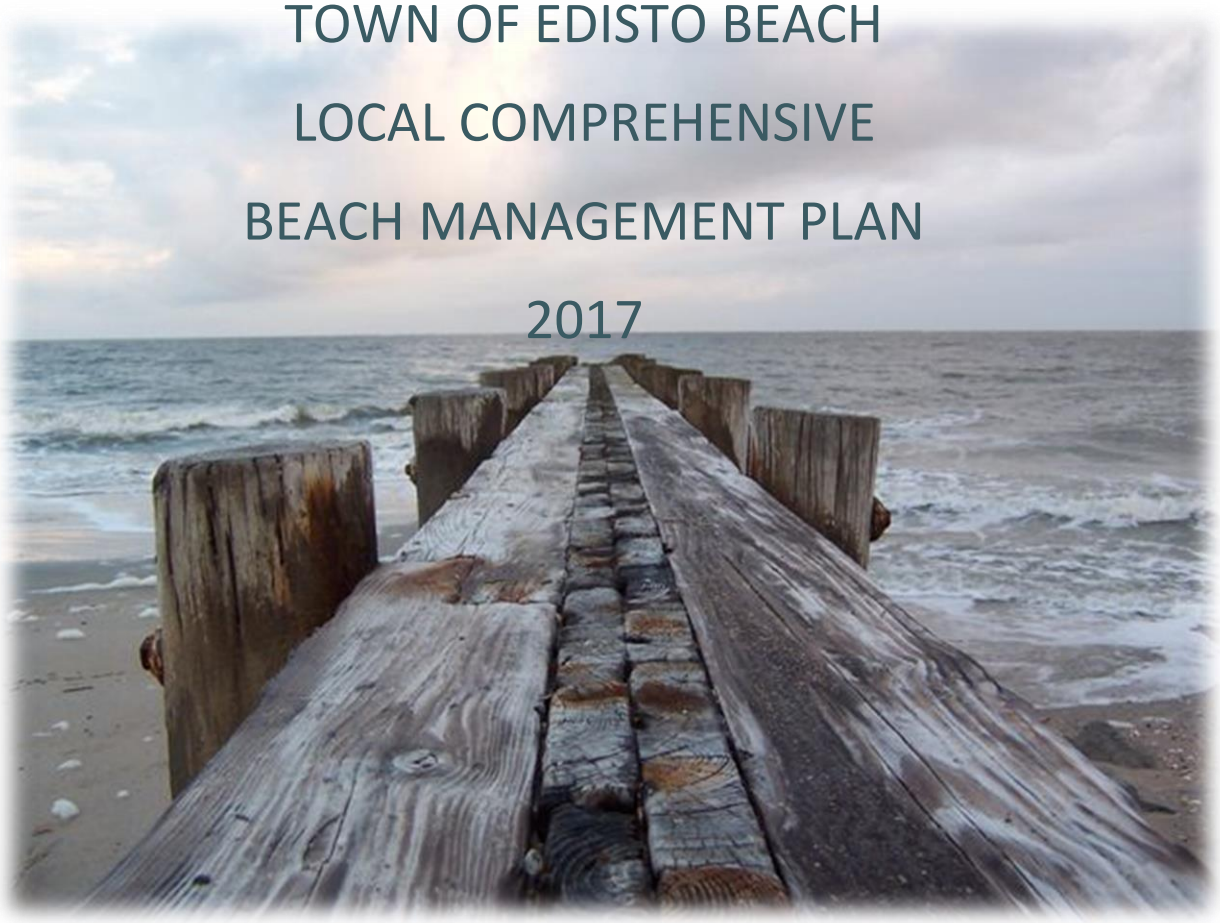
TOWN OF EDISTO BEACH

LOCAL COMPREHENSIVE

BEACH MANAGEMENT PLAN

2017



Previous State Approved-February 1, 2012

Beachfront Management Committee Adoption-April 12, 2017

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1. Introduction

1.1 Purpose

In accordance with the State Beachfront Management Act, the Town of Edisto Beach has prepared this 2017 local comprehensive beach management plan in coordination with the South Carolina Department of Health and Environmental Control's Office of Ocean and Coastal Resources Management (DHEC OCRM).

The purpose of the plan is to help Edisto Beach direct and control future growth, and serve as an essential tool in all the forthcoming planning activities and to enable the Town to qualify for its share of future beach nourishment funding. The Town's local comprehensive beach management plan represents considerable effort, inventory and deliberation on the part of the Town, and establishes a strategy for the management of the Town beach for the sustainable enjoyment by residents and visitors. This local beach management plan is intended for incorporation into the State Beachfront Management Plan in accordance with the provisions of the State Beachfront Management Act.

One of the most important provisions of the Beachfront Management Act requires local beachfront counties and municipalities to develop and adopt local comprehensive beach management plans which refine the State's beach management strategy to address local conditions and issues.

Local beach management plans are required to include a minimum of ten elements:

1. An inventory of beach profile data and historic erosion rate data for each standard erosion zone and inlet erosion zone under the local jurisdiction;
2. An inventory of public beach accesses along with a plan for enhancing public access and parking;
3. An inventory of all structures located in the area seaward of the setback line;
4. An inventory of turtle nesting and important habitats of the beach/dune system and a protection and restoration plan if necessary;
5. A conventional zoning and land use plan consistent with the purposes of the Act for the area seaward of the setback line;
6. An analysis of beach erosion control alternatives, including renourishment of the beach under the local government's jurisdiction;
7. A drainage plan for the area seaward of the setback zone;
8. A post disaster plan including plans for cleanup, maintaining essential services, protecting public health, emergency building ordinances, and the establishment of priorities, all of which must be consistent with the Act;
9. A detailed strategy for achieving the goals of this chapter by the end of the forty-year retreat period. Consideration must be given to relocating buildings, removal of erosion control structures, and the relocation of utilities; and
10. A detailed strategy for achieving the goals of preservation of existing public accesses and the enhancement of public accesses to assure full enjoyment of the beach by all residents of the State.

1.2 History of Plan Approvals and Revisions

In 1977, after realizing that its coast was a depleting resource, the State of South Carolina enacted the Coastal Zone Management Act (§48-39-350), establishing for the first time a coastal zone permitting management agency.

However, in 1988, after years of loosely controlled growth, beach erosion, and depletion of coastal resources, the State saw the need to increase its beach management authority by amending its Coastal Zone Management Act. In July 1988, the South Carolina Beachfront Management Act (Act) became law. The Act was subsequently amended by the state legislature in 2016. The law requires the use of scientific studies of coastal processes to establish precise building setback lines along the coast. It also prohibits the construction of seawalls, limits the size of buildings within the predicted erosion zone and adopts a policy of retreat away from the erosional beach. These amendments called for the preparation of a State Comprehensive Beach Management plan drafted and implemented by communities on the South Carolina coast.

The Act is intended to protect both life and property, as well as protect and preserve unique coastal habitats and beaches. Provisions of the Act address:

- the preservation of a sand beach,
- public access opportunities,
- measures to renourish eroding beaches, and
- protection of natural vegetation within the beach/dune system.

The responsibility for the development of these plans falls, in the most part, on the local communities. If the community fails to meet this responsibility, it will automatically lose its eligibility to receive any State funds designated for beach renourishment programs. As a result, the Town of Edisto Beach, like many other coastal communities in South Carolina, developed and implemented a Beach Management Plan.

The Town first initiated drafting its first Local Comprehensive Beach Management Plan (LCBMP) in 1990. A Plan prepared by Planning Services Group, Inc. was submitted to the South Carolina Coastal Council (SCCC) on June 13, 1991. In September 1991, the Town adopted the first Local Comprehensive Beach Management Plan. In 1994, Professor Grant Cunningham, Ph.D. and Josh Selway of Clemson University prepared an evaluation of the plan. Subsequent Local Comprehensive Beach Management Plan updates have been completed in 1996 and 2002. In 2011, the Planning Commission adopted the LCBMP which was locally adopted October 13, 2011. DHEC OCRM approved the LCBMP on February 1, 2012. This version is the five-year review.

1.3. Overview of Municipality

Some sources indicate that Edisto was settled before Charleston, but no records prove or disprove this statement. Edisto was purchased from the Edisto tribe of Indians by the Earl of Shaftsbury, one of the original Lord Proprietors, for some cloth, hatchets, beads and other goods in 1674. Rice and

indigo were among the crops grown on Edisto. During this period, sea- island cotton became world famous. As the cotton industry prospered, many owners built plantation homes that are still present.[1]

Following the Civil War and advent of the boll weevil, the cotton industry was destroyed. Islanders started shrimping, fishing and truck farming. Tourism is now the largest industry on Edisto.

Edisto Beach, once known as "McConkey's Island" was purchased in the early 1900's by the Edisto Beach Company of Sumter, South Carolina and resort development began. They acquired this property for the "purpose of affording those who find pleasure by the seashore an opportunity to enjoy an all-season resort without the prohibitive cost encountered at similar places in Florida and elsewhere.[2]" Beachgoers had to time their visits to coincide with low tide in order to cross the marsh areas. There was no electricity or running water. Development continued gradually. In 1940, a major hurricane destroyed 175 cottages and cut the dunes back by 30 to 120 feet. Following World War II, development increased.

Edisto Beach is located on "McConkey's" or "Big Bay Island" immediately adjacent to Edisto Island. Originally located in Charleston County, the Town is now within Colleton County. (The Town left Charleston County in 1975 to become a part of Colleton County.) Adjacent to this beach is a mound over a hundred years old referred to as the "Spanish Mound". The "Spanish Mound" was subsequently destroyed by Hurricane Matthew in 2016. Tradition has it that this was a part of an old fort erected there by the Spaniards in the earliest colonial times, during the wars that were then fought between the Spanish colonists of Saint Augustine and the English colonists on the South Carolina coast.

The Town of Edisto Beach is in southeastern South Carolina, approximately 45 miles southwest of the City of Charleston. Bounded by Charleston County to the north, St Helena Sound to the southwest, and the Atlantic Ocean to the east, Edisto Beach is the barrier island part of Edisto Island which is located landward in Charleston and portions of Colleton Counties.

Big Bay Creek, Scott Creek, Jeremy Creek and salt marsh separate Edisto Beach from the main body of Edisto Island[3]. According to the Edisto Beach Management Plan by Planning Services Group, Inc., Edisto Beach's beachfront is 4.0 miles (6.4 km) long, a length of 4.4 miles (7.1 km), and a maximum width, including both high ground and marsh, of 1.5 miles (2.4 km). There are 920 acres of high land and 464 acres of salt marsh. The Island is roughly 2.16 square miles, and elevations on the island range from sea level to 20 feet above sea level (9.1 m). With 48 acres of sandy beachfront, Edisto Beach provides 63 percent of the sandy beachfront in Colleton County.[4] Edisto Beach is geographically located at Latitude 32.487613N, Longitude - 80.324402N in the Eastern Standard Time Zone.

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[1] Cunningham, Grant M., Ph.D and Selway, Josh. January 2004. "Edisto Beach: A Beach Access Management Plan". Clemson University, South Carolina.

[2] Edisto Beach Company. "Edisto Beach, McConkey's Island, South Carolina, a Seaside Development". Sumter, South Carolina.

[3] Planning Services Group, Inc. "Town of Edisto Beach, South Carolina, A Beachfront Management Plan". 1991. Columbia, South Carolina p 6.

[4] Mathews, T.D., F.W. Stapor, Jr., C.R. Richter, Et al., eds. 1980. "Ecological Characterization of the Sea Island coastal region of South Carolina and Georgia". Vol. I: Physical features of the characterization area. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, D.C. FWS/OBS-79/40. 212 pp.

Edisto Beach is the second smallest incorporated place in coastal South Carolina. Pawley's Island is the smallest.

Edisto Beach State Park occupies approximately one-third of Edisto Beach at the northern end. The Edisto Beach State Park is an oceanfront campground on a palmetto-lined beach.

The west end of the island has been developed as a planned unit development (Ocean Ridge/Wyndham Resorts formerly known as Fairfield Ocean Ridge) that includes an eighteen-hole golf course known as 'The Plantation Course' at Edisto Beach. The rest of the island is privately owned by small landowners.

The Town's vision for beach management developed by the Beachfront Management Committee and Town Council are:

- Have a dry protective dune and sand beach at all stages of the tide, capable of providing recreational opportunities for residents and visitors, protecting upland development and sustain our natural resources;
- Remedy chronic and periodic erosion problems that threaten buildings and loggerhead nesting habitat along the shoreline;
- Minimize the need for emergency protection of upland structures and development;
- Encourage building as far landward on lot as possible; and
- Cooperation between all Town residents to ensure that this vision is implemented and that generations to come can enjoy the beach on Edisto.

The Town has pursued this vision through the following actions:

- Instituting regulations and policies for planning, zoning, development, environmental protection and public safety;
- Maintaining an excellent public beach access system;
- Maintaining a groin field;
- Monitoring beach and dune conditions; and
- Acting as permit applicant and providing funds for beach nourishment projects

1.3.1 Local Beach Management Policies

The Town of Edisto Beach manages its oceanfront beach as one contiguous stretch of sand, and its beach regulations apply uniformly along the entire oceanfront. These regulations are as follows:

- Chapter 6. Article II. Dogs, Section 6-36. Running at large.
- Chapter 10. Article II Beach Regulations, Division 1. Generally, Section 10-31. Shark Fishing.
- Chapter 10. Article II Beach Regulations, Division 1. Generally, Section 10-32. Throwing Trash, Rubbish, Debris Prohibited.
- Chapter 10. Article II Beach Regulations, Division 1. Generally, Section 10-33. Vehicles Limited.
- Chapter 10. Article II Beach Regulations, Division 1. Generally, Section 10-34. Motorized Watercraft/jet skis.

- Chapter 10. Article II Beach Regulations, Division 1. Generally, Section 10-36. Glass Containers prohibited on the beach.
- Chapter 10. Article II Beach Regulations, Division 1. Generally, Section 10-37. Camping, picnicking and use of tents, canvas awnings and umbrellas on the beach and beach access; holes on the sandy beach.
- Chapter 10. Article II Beach Regulations, Division 1. Generally, Section 10-38. Limitations of launching boats from beaches.
- Chapter 10. Article II Beach Regulations, Division 1. Generally, Section 10-39. Fires Prohibited.
- Chapter 10. Article II Beach Regulations, Division 1. Generally, Section 10-40. Beach access vegetation and fencing.
- Chapter 10. Article II Beach Regulations, Division 2. Protection of Sea Turtles.
- Chapter 14. Article IV. Flood Damage Prevention.
- Chapter 82. Article IV. Storm water Management.
- Edisto Beach Emergency Operations Plan.
- Chapter 86. Article IV. Districts. Section 86-145.

Local Standard Operating Procedures require garbage to be emptied from beach accesses twice weekly during the tourist season.

Litter is removed from the beach by the Turtle patrol while performing daily turtle nesting inspections from May until October. Recently, the DHEC OCRM Marine Debris Initiative implemented an "Adopt a Beach" program that promotes organization participation in keeping beaches free of litter. Boy Scout Troup 63 has adopted one section of the beach on Edisto.

1.4 Local Beach Management Issues

The most significant local beach management issue facing Edisto Beach is *chronic beach and dune erosion and the preservation of the beach system for storm protection, economic and ecosystem benefits.* The erosion problem is a continual problem that is exacerbated by storm surge/natural disasters, sea level rise (long term threat), tides and wave action. In conjunction with erosion, are funding and sand resource concerns. Are there enough funding and/or resources to correct erosion as it occurs? Coastal communities and the SC Beach Advocates advocate the State have a permanent funding source.

Maintaining the dunes by installing sand fence and vegetation has been a chronic issue. Sand fencing on the front beach requires annual replacement and repairs because, as erosion occurs, it is washed away or damaged. Vegetation to stabilize the sand around sand fencing has been beneficial, but erosion has also destroyed this vegetation.

E*mergency protection of threatened buildings and infrastructure* goes hand-in-hand with the episodic erosion threat, and is a challenging issue. Because South Carolina has had only modest success with its policy of retreat, Edisto will need to decide where retreat is a viable option, and if not, employ other erosion control measures to protect threatened buildings and infrastructure.

Dog management is an issue on Edisto Beach. Although the Town has enacted ordinances that prohibit unleashed dogs on the beach and require owner responsibility for pet waste removal, enforcement is often difficult. The Town has purchased and installed dog waste bag stations at all beach accesses. Stations are stocked with biodegradable pet waste bags. The problem is used bags are often left on the beach for others to dispose of.

All the properties on the front beach on Edisto Beach are on *septic sewage systems*. Septic tanks on the beach pose a beach management issue when exposed or destroyed in the wake of a major disaster or chronic erosion.

Vehicular and pedestrian traffic and parking are a concern on Edisto Beach, particularly on holidays and summer weekends. Palmetto Boulevard is a four-lane primary highway and during the summer, all but the two center lanes are utilized for parking. Pedestrians must cross this busy highway from around parked cars which limits visibility. This limited visibility combined with distracted drivers on electronic devices is of concern.

"Day Trippers" have recently become of concern. These visitors utilize Town services, but provide no financial support for the services. An approved major subdivision (Spring Grove) with 7,500 homes with the closest beach being Edisto Beach may have significant future impacts.

2. Inventory of Existing Conditions

2.1 General Characteristics of the Beach

Edisto Beach is a four-mile long barrier island with an additional one mile of beach fronting St. Helena Sound. The island is situated between Jeremy Inlet and the South Edisto River Inlet, but is also strongly influenced by the tidal deltas of the North Edisto Inlet and St Helena Sound.

Several Inlets, South Edisto River Inlet, Big Bay Creek Inlet and Jeremy Inlet impact the shoreline of Edisto Beach. Inlets are areas of special concern in any coastal management program. Their location and configuration characteristics are dependent upon the balance of forces from waves, currents and volumes of sand moving through the inlet area under their influence. This balance is delicate, with minor changes in the driving and shaping forces being capable of producing dramatic changes in the configuration of the inlet.

The South Edisto River is a deep channel that lies close to the Edisto Beach shore. Water depths are up to 37 feet at Mean Low Water (MLW) within 100 yards of the shore. Large offshore sand deposits are a feature of this inlet and historically this inlet has been an area of substantial accretion[5]. In the Shoreline Management Plan in 1987, this inlet had advanced 800 feet during the 131-year period of record or an average of 6.1 feet per year. This inlet known as the South Edisto River Inlet Management Zone has a direct positive influence on the adjacent ocean front from Big Bay Creek to Marianne Street.

[5] Cubit Engineering, LTD. (1987). "Shorefront Management Plan, Edisto Island, Jeremy Inlet to Big Bay Creek, South Carolina", Volume I: Management Program. P2-3 through 2-5.

At the confluence of Big Bay Creek and the South Edisto River known as "the Bay Point", there have been cycles of shoreline advance and recession. The maximum change in the Big Bay Creek shoreline is about 110 feet[6].

Jeremy Inlet located at the northern end of the Edisto Beach State Park is generally stable. Although short term changes tend to be more dramatic, over the 131-year period from 1852 to 1983, the inlet has migrated only about 50 feet southwest into the state park property.

Another influence on beach fronts is storm hazards and the erosion damage to beaches and dunes that accompanies storm surges. Using hypothetical storm conditions, dune recession varies from 31.9 feet to 56.2 feet during a 25-year storm event and 50-year storm event.[7] According to the Federal Emergency Management Agency (FEMA) in June 1987, the entire Town of Edisto Beach would be flooded during a 100-year storm event causing further erosion to the beach. This was realized when Hurricane Matthew impacted Edisto Beach in October 2016. Approximately 4 feet of water inundated the island.

Edisto Beach has conducted numerous nourishment and groin projects in the past to maintain the beach. The borrow area for nourishment projects has typically been the north shoal of the South Edisto River Inlet which infills rapidly with beach-quality sand and is available for reuse. The most current borrow area study (2014) by the US Army Corps of Engineers indicates that at least 30 million cubic yards of suitable beach quality sand sufficient for 50 years of initial and subsequent renourishment is available. The composite mean grain size of sand on Edisto is 0.404 millimeters (mm) which is a medium coarse sand as compared to other South Carolina beaches[8]. This is due to several factors: 1) up drift sediment supply from Edingsville Beach has high concentrations of oyster shell and mud; 2) the 1954 nourishment project used marsh sediment from the Yacht Basin; 3) groin cells trap coarse sediments.

The primary dunes are typically vegetated and the Town has been constructing and maintaining sand fencing to build secondary dunes. Hurricane Bill that passed offshore in 2009, damaged much of the sand fencing and plantings constructed prior to May 2009, and deposited approximately two additional feet of sand on the north end of the beach. Hurricane Matthew further decimated the existing primary dune and sand fencing. The Town has re-established this asset.

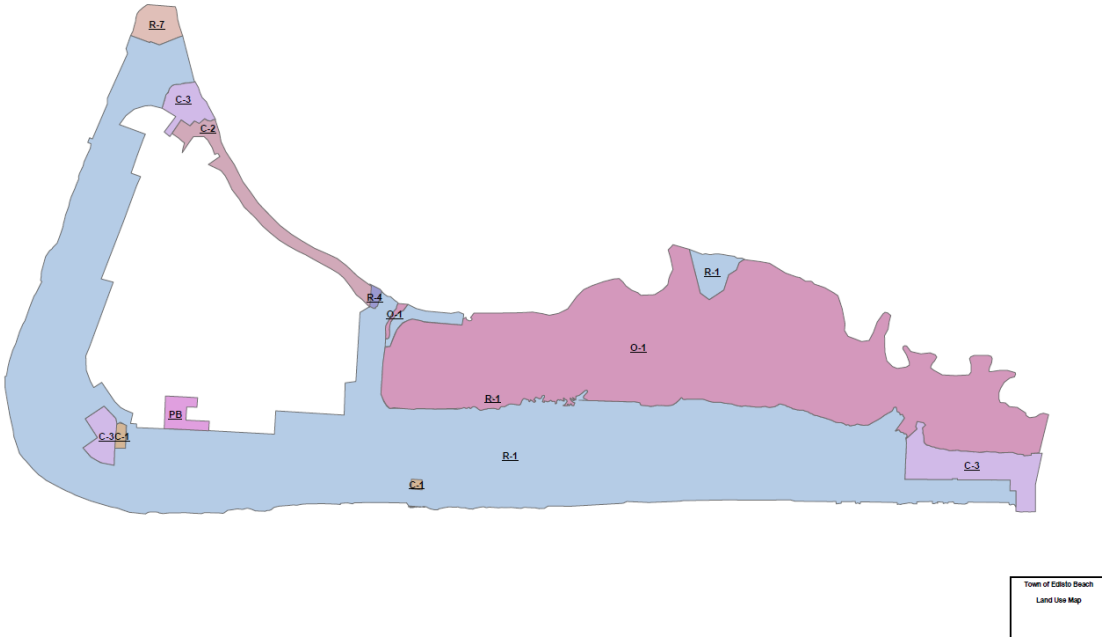
[6] Cubit Engineering, LTD. (1987).
[7] Cubit Engineering, LTD. Volume I (1987), p 2-10.
[8] Coastal Science Engineering, "Geotechnical Data Report". July 2008, p. 43.

FIGURE 1 LOCATION MAP (OCTOBER 21, 2014)

2.1.1 Land Use Patterns

Land use on Edisto Beach is primarily residential in the form of single and multiple-family dwelling units, including those located within the gated community of Ocean Ridge/Wyndham Resorts. Residential development on Edisto Beach began in the 1920's.

FIGURE 2 LAND USE MAP (MAY 18, 2007)



The Census in 2010 indicated that there are 2,303 total housing units in the Town, and that 346 (15.0%) are occupied and 1,957 (85.0%) are vacant housing units, including those under construction, not occupied year-round, or occupied by persons with primary residences elsewhere. The Census also reported that 310 (89.6%) are owner-occupied single-family homes and the median value of these houses is $509,000. Renter-occupied units comprised 36 (10.4%) of the total housing units.

The Town of Edisto Beach has relatively few commercial units. Of the approximately 1,531 acres on the beach, roughly 34 acres or 2% of the beach is zoned commercial, excluding resort amenities within the gated section of Ocean Ridge/Wyndham Resort. Commercial development is limited and includes a grocery store, a liquor store, restaurants, a service station, a video store, some coffee shops, real estate offices and tourist related retail.

Ocean Ridge/Wyndham resort was built as a planned unit development (PUD). One 18-hole championship golf course, 'The Plantation Course' at Edisto Beach is located on the beach within the gated community. The golf course winds around many "natural looking" lagoons connected to Big Bay Creek.

Integrated throughout the Town are 4.67 miles of bike/walking trails that provide recreational activities for the public. These bike paths were constructed using combined Town and grant funding from state and federal sources. Sidewalks are exclusively located on Palmetto Boulevard. Sidewalk replacement by the State was completed in 2016 on all blocks and are Americans with Disabilities (ADA) compliant.

The South Carolina Parks Recreation and Tourism owns and operates the Edisto Beach State Park which was named one of the top ten beaches in the United States by the United Kingdom Trip Watch. Edisto Beach State Park occupies approximately one-third of Edisto Beach at the northern end and abuts Jeremy Inlet. Part of the park is located along the Atlantic Ocean. The park has 60 camp sites along the Atlantic Ocean side with electrical and water hookups. All sites are located near restrooms, showers, and beach accesses. The park offers numerous scheduled activities and educational opportunities.

2.1.1.1 Major Roads and Bridges

The Town of Edisto Beach is accessible from Edisto Island and the mainland via the SC 174. The McKinley Washington, Jr., bridge connects Edisto Island to the mainland. Although many of the roads on Edisto Beach are paved, most Town-owned roads are unpaved.

Major local roads on the island include Palmetto Boulevard (SC 174), Lybrand Street, Jungle Road, Dock Site Road and Myrtle Street.

- Palmetto Boulevard is the longest shore-parallel road on the beach, extending from the causeway to Dock Site Road, a distance of 4.1 miles. It is primarily a four-lane road which narrows to two lanes the last quarter of its length. During 2011, Palmetto Boulevard from Holmes Street to the marina was repaved and drainage was improved. In 2014, the remainder of Palmetto Boulevard was repaved and the curb and gutter was improved.

- Jungle Road extends along the marsh side of the island from SC 174 and Lybrand Street for a distance of 1.9 miles.
- Lybrand Street extends from SC 174 to Dock Site Road and transects the island. It is 0.4 miles long.
- Dock Site Road extends 0.8 miles.
- Myrtle Street extends from Lybrand Street to SC 174, a distance of 1.7 miles.

The total length of roads on Edisto Beach is estimated to be 22 miles [including privately owned roads in the Planned Unit Development (PUD)], with approximately 12.70 miles of roads under the jurisdiction the South Carolina Department of Transportation (SCDOT). Of the roads within the Town limits, 4.24 miles are primary roads and 8.46 miles are secondary roads. Maintenance of the roads within the State system is provided through an agreement between Charleston County and the SCDOT. Roads within the PUD total approximately 4.5 miles and are privately owned and maintained. The Town is responsible for maintaining approximately 5.64 miles of roads, of which 4.0 miles are not paved. Unpaved roads are graded on average three times annually and streets are repaired as needed. The SCDOT and the Town are responsible for maintaining the rights-of-way along public roads; however, in the past, the Town has undertaken maintenance along some State roads to expedite mowing and upkeep.

2.2.1 Beach Uses

Like most South Carolina beaches, Edisto Beach is used for a wide variety of recreational activities, including sunbathing, swimming, beachcombing, walking/jogging, cycling, fishing, surfing, sand sculpting, beach games, etc. Special events have become popular on Edisto such as weddings, parties, and receptions. Special events are allowed with administrative approval.

Dogs are allowed on the beach, but only if on a leash from May through October. At other times, dogs are allowed on the beach and have to be under the owner's control.

2.2.2 Benefits and Value of Beach

Edisto Beach is an affordable, family beach which is primarily residential with a modest commercial base that influences the local economy. The desire to live near the coast has created relatively high property values and creates a considerable tax base.

The Town of Edisto Beach contributes tax revenue in the form of property, income, sales, accommodation and hospitality taxes. The Town's beach and accompanying rental properties create a number of jobs in fields like hospitality, retail, property management, property service (cleaning, landscaping) and municipal government.

The Town's 4.67 miles of beachfront is its industrial park. Golf, boating and fishing are also popular activities. The economy of Edisto Beach revolves around tourism and tourism-related industries. Edisto Beach is located in Colleton County which is a rural, Tier III, under-developed county. Forty-five percent (45%) of the County's property tax income comes from Edisto Beach.

Last year there were 337,651 visitors at the Edisto Beach State Park (Edisto Beach State Park 2016). This does not include "day-trippers" from surrounding cities and counties estimated at 2,000 per day (traffic counts). Because Edisto Beach remains one of the few non-commercialized beaches, beach

activities are the main reason to visit Edisto Beach, as well as visiting surrounding areas, such as Beaufort and Charleston.

The economic value of one recreational beach day was conservatively estimated at about $10.57 per person, and the extrapolation of this value leads to an estimated annual total of economic recreational value to the Town beach being $3,055,800.

Edisto Beach receives no supplement from other counties regarding the distribution of South Carolina Statewide 2% Accommodations Tax Revenues. The Town's tourism tax revenues continue to steadily increase and is a vital income for maintaining and monitoring the beachfront.

FIGURE 3 TOURISM TAXES

According to the Edisto Chamber of Commerce, the beach contributes over $12 M in direct economic value to Colleton County. It is estimated that 387 full and part-time jobs have been created from tourism on the beach and attracts employees from Colleton, Charleston and other nearby counties. The Town estimates there are approximately 1,950 rental units on the beach (rental properties and second homes), and the reasonable assumption is this is due to the Town's proximity to the Atlantic Ocean and tidal marshes. According to the Town's business permit gross receipts, the rental units grossed over $27.5 million annually which accounts for over $118,000 in business license fees collected by the Town. These units also generate a large part of the accommodations taxes received by the Town.

Natural habitats and resources are recognized for the economic benefits that they provide. Protection of natural resources is identified in the Town's Comprehensive Plan as essential to maintaining the high quality of life. Residents indicate that the attributes of coastal ecosystems, including marshes, marine waters, and sandy beaches influenced their decision to live on Edisto Beach. Eco-tourism has become increasingly popular especially since Edisto is located in close proximity to the Ace Basin and

Botany Bay. On October 16, 2009, SC Scenic Highway 174 from the McKinley Washington, Jr., Bridge to Palmetto Boulevard was designated as a National Scenic Byway by the US Department of Transportation.

Edisto Beach's shoreline is a diverse and productive ecosystem and is a critical asset between the water and the land. The sandy beach and dunes system serve as the island's first line of protection from high winds and waves associated with storm activities. This area supports a rich and intricate ecosystem that forms numerous food webs. The beach provides critical habitat for the threatened loggerhead sea turtle. The beach also provides numerous recreational activities such as swimming, fishing, sunbathing, beachcombing, and bird watching and contributes significantly to the Town's tourism industry. There is an annual benefit of $4.2 million value on protecting the marine turtle species that depend on Edisto Beach's nesting habitat.

Tourism in SC is a 20.2 Billion industry (US Travel Assoc. SCPRT). South Carolina beaches are one of the biggest economic engines in the State. In 2016, SC beach counties contributed 72% of the SC State Accommodations tax revenues. SC beaches directly and indirectly support about 39,300 state jobs. Sixty percent of the State's total tourism economic activity occurs along the coast (SCPRT) with an annual impact of $11.5 billion to the State economy. The economic impact of the coastal areas has also been recognized by DHEC OCRM in a report issued in October 2002. According to this report, 22% of the state's economy is a result of the output of revenues from coastal areas.[9]

2.3 Beachfront Developments and Zoning

Chapters 10, 14 and 86 of the Town Code contain regulations pertaining to the Building Code, zoning and land use regulations. The Beachfront Management Overlay District (86-145) establishes a beachfront overlay district that encompasses the entire beachfront seaward of Palmetto Boulevard, and extending down seaward of Yacht Club Road. The purpose of this district is to provide guidance of development in accordance with the State of Carolinas' retreat strategy, and to protect, promote, and improve the public health, safety, morals, convenience, order, appearance, prosperity and general welfare. All of the property is Zoned R-1, with the occasional non-conforming uses mixed in from before the Town's Zoning Ordinance. The Town's Beachfront Management Overlay district compliments the state's retreat policy by establishing an additional setback line ten (10) feet landward of the state's baseline, and requiring that all new redevelopment be located as far landward as possible. Figure 4 depicts the current zoning on Edisto Beach.

As recommended in the Town's first Beach Management Plan adopted in 1991, a Beach Management Overlay Zoning District was adopted in 1992. The purpose of the Beach Management Overlay Zoning District is to implement and enforce the retreat strategy and hazard mitigation plan adopted by the Town to protect life and property located within close proximity to the baseline established by the South Carolina Coastal Council. It also is used to educate persons owning property along the beach about the hazards connected with erosion, storms and flooding in areas close to the beach. This District is compatible with the intent of the South Carolina Beach Management Act where it relates

[9] Henry, M.S. & Barkley, D.L. 2002. "*The Contribution of the Coast to the South Carolina Economy*". Clemson University Regional Development Research Laboratory.

to setback lines, permitting, nonconforming buildings and uses and parking. Figure 2 shows the current Town of Edisto Beach land use map.

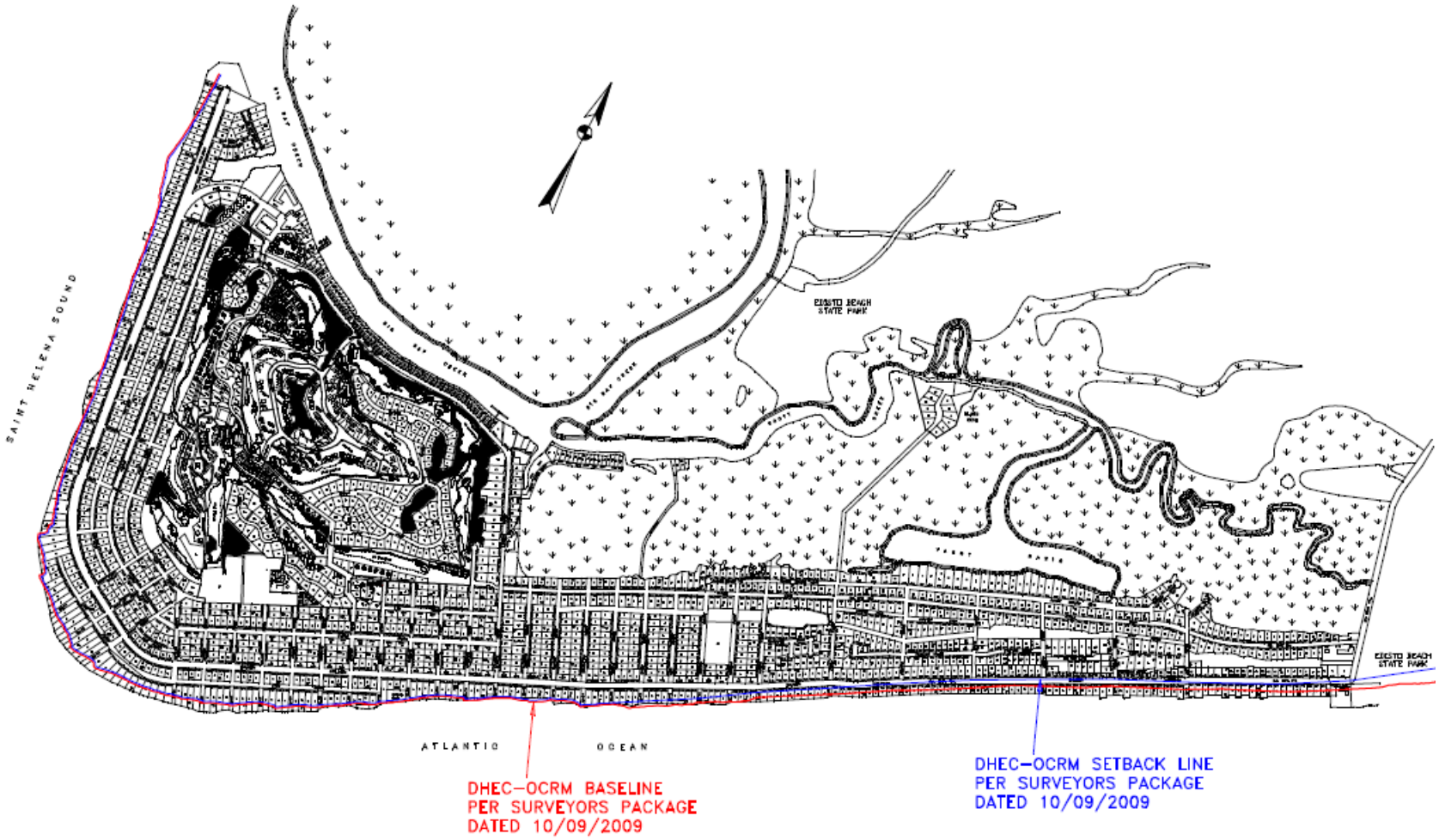


FIGURE 4 ZONING MAP INCLUDING BASELINE AND SETBACK LINE

Most of the Town is comprised of single family homes; however, there are some small subdivisions scattered throughout the Town which consist of duplexes, condominiums and timeshares. Over 85% of the Town has been developed.

No subdivisions or developments are located on the beachfront.

Ocean Ridge Community

The Ocean Ridge Community (originally developed under the name "Oristo Ridge") was designated a Planned Unit Community ("PUD") by the Town of Edisto Beach in June, 1981 under the Town's initial Comprehensive Plan and Zoning Ordinance. Ocean Ridge remains the only PUD located within the municipal limits of Edisto Beach.

The Community was initially owned and developed by Fairfield of South Carolina, Inc. and was subsequently acquired by Wyndham Vacation Resorts, Inc., through a series of mergers. During the course of its development, a mixture of residential dwellings was constructed within the Community, including single family residences, condominiums and timeshare units.

The timeshare units are currently managed by Wyndham Vacation Resorts and are part of Wyndham's time-share exchange program. Timeshare units also exist outside the main Community on non-contiguous properties. These units include Bay Point (Yacht Club Road); Beachwalk (Murray Street); Marsh Point (Palmetto Blvd. and Sunset Street); South Point (Myrtle Street) and the Village (Docksite Road). Although outside the main Community, these timeshare units are subject to the regime of the Ocean Ridge Community.

Time share units make up only one third of the total residential dwellings in the Ocean Ridge Community. Privately owned single family residences and condominium units constitute the bulk of the residential dwellings in the Community and are the permanent homes for many residents of the Ocean Ridge Community.

All properties identified on the Master Plan for the Ocean Ridge Community are subject to Declarations of Covenants, Restrictions and Conditions which establish the permitted uses and limitations imposed on all property within the Community and on the offsite timeshare units.

Wyndham Vacation Resorts

- Bay Point, owned by Wyndham Vacation Resorts, was permitted in 1987, has 48 timeshare units and is located on Yacht Club Road on Big Bay Creek.
- Beachwalk, owned by Wyndham Vacation Resorts, was permitted in 2001, has 8 timeshare units and is located on Murray Street.
- Marsh Point, owned by Wyndham Vacation Resorts, was permitted in 1989, has 52 timeshare units and id located on SC 174 and Sunset Street.
- South Point, owned by Wyndham Vacation Resorts was permitted in 1999, has 11 timeshare units and is located on Myrtle Street.
- The Village, owned by Wyndham Resorts, was permitted in 2001, has 34 timeshare units and is located on Dock Site Road.

Egrets Pointe

- Egrets Pointe was permitted in 1987 has 24 units and located in the Planned Unit Development.

The Retreat

- The Retreat was permitted in 2000, has 12 units and is located behind the Palmetto Plaza off Jungle Road.

Bay Creek Villas

- Bay Creek Villas was permitted in 1985, has 62 condominium units and is bounded by Dock Site Road and Big Bay Creek.

Marsh Side

- Marsh Side was permitted in 2005, has 8 duplexes and is located on Jungle Road

2.3.1 Beachfront Structural Inventory

Section 48-39-350(A)(3) of the Beachfront Management Act requires all communities to include an inventory of all structures located seaward of the DHEC OCRM setback line as part of this plan. One hundred thirty-four structures within the Town of Edisto Beach are located seaward of the DHEC OCRM jurisdictional setback line. These include 84 habitable structures, 34 groins, 9 bulkheads, 6 revetments, zero seawalls and zero pools. Of these structures, 32 habitable structures and all 34 groins are located seaward of the DHEC OCRM baseline. Structures located seaward of the DHEC OCRM baseline and setback line are shown in the structure inventory tables in Section 7.2 of this plan.

In the early 1970s, 4 houses in the 2800 block washed away during a winter storm right after groin 23, the last wooden groin in the series, was constructed. The house at 2802 was up on cribbing, ready to be moved, but was washed away. The Newton house at 2704 was saved by shortening groin 23 and placing a riprap wall around three sides. The Whaley house at 2807 was saved by riprap walls around three sides.

Shorter, lower rock groins were added after the big erosion event of the 70s. They are groins 24,25,26,27,28, and 29. These created a natural accretion to the extent that the Point had 200 feet of beach by 1980.

However, in the early 90s the deteriorating wooden groins were lengthened back to their original length without renourishment and erosion at the Point started again. Some houses lost 180 feet of beach leading to construction of a revetment. Shortening of groin 23 alleviated the problem and the beach stabilized and subsequent renourishment filled in the groin compartments. The Point is now stable with about as much sand as the low, short groins can hold.

The revetment located at “the point” extends from Groin 25 to Groin 27, passing through Groin 26. It extends from 1 foot below low tide to 8 feet above mean sea level or about even with the native elevation at beachfront. It was on a 2:1 slope. It was constructed by shaping the trench which was covered with heavy geotextile cloth, then covered with basketball sized rocks. "Armor" stone of around three feet each was placed on top. The purpose was to stop the high tide from getting under houses in the 2800 block. The revetment was buried until 2016 and became exposed after Hurricane Matthew.

2.4 Natural Resource and Ecological Habitats

Edisto Beach, like most South Carolina barrier islands, is characterized by a beach and dune ridge system, partially surrounded by an extensive tidal marsh. The island is surrounded, in part, by navigable waters and provides some opportunities for access by boat and numerous beach access points. Prior to development, the island was covered by a maritime forest.

Of concern is the protection and conservation of coastal natural resources and ecological habitats. The beachfront exhibits a variety of natural resources due to the diversity of ecotypes and habitats that occur. The interaction between shifting terrestrial sand dune and beach habitats, shallow coastal waters, and the open ocean create a dynamic landscape and comprise three terrestrial habitats: 1) the beach community, 2) maritime shrub thicket, 3) maritime forest.

Because of the intensive development along the beach front, very little natural vegetation remains on the dunes other than scattered sea oats (*Uniola paniculata)*, blanketflower (*Gaillardia aristata*), bitter panicgrass (*Panicum amarum*), seabeach evening-primrose (*Oenothera humifusa*), dune water pennywort (*Hydrocotyle bonariensis*), beauty berry (*Callicarpa*), american beachgrass (*Ammophila breviligulata* Fernald), sand spurs and broomsedge (*Andropogon virginicus L*). The Town had installed sand fencing to rebuild the dune area and sea oats and beachgrass were planted in conjunction with the sand fencing installation. This was destroyed by Hurricane Matthew. During high tides, sea wrack (comprised primarily of dead spartina grass) is deposited on the beach and provides an additional habitat periodically throughout the year.

The sand dunes provide habitat to many mammals and include the Norway rats (*Rattus orvegicus*), Marsh rats (*Holochilus sciureus*), Whitetail deer (*Odocoileus virginianus*), Raccoons (*Procyon lotor*), Horned Toad Lizard (*Phrynosoma cornutum*) and feral cats (*Felis catus*). (Dawdry, Apex Exterminators)

Edisto Beach is typical of any barrier island habitat. Some of invertebrate genera on the sand beach or immediate shoreline identified by Johnson et al. 1974 are *Arenicola* (polychaete worm), *Balanoglossus* (acorn worm), *Donax* and *Cardium* (clams), *Haustoria*, *Orchestia* and *Talorchestia* (amphipods), *Ocypoda* (ghost crab), *Callinectes* (blue crab), *Oliva* and *Terebra* (snails), *Clibarius* and *Pagurus* (hermit crabs), and *Busycon* (whelk)[10]. Shore bird species (plovers, sanderlings, sandpipers, turnstones, seagulls, etc.) feed on the shore line.

The importance of Edisto Beach's habitat for plants and animals is significant. Many animals are dependent on smaller prey available on open beach habitats as part of complex food chains. The primary dunes provide nesting sites, and sub-tidal bars can support numerous species of marine invertebrates and fish that cannot survive in open water. Long-term or permanent alterations to these ecosystems can impact the type, health and viability of the flora and fauna.

[10] Johnson, A.S., H.O. Hillestad, S.F. Shanholtzer, and G.F. Shanholtzer. 1974. "An Ecological Survey of the Coastal Region of Georgia". National Park Service Science Monogr. Series No. 3.

Beach vitex is a widespread plant found from Japan and China south to Malaysia, India, Sri Lanka, and Australia (Wagner et al. 1999). Since it is a prostrate, spreading woody shrub, it is considered an excellent beach stabilizing plant. Because of this threat, the introduction of Beach vitex is a concern on Edisto Island, as the island is a heavily used site for sea turtle nesting. In the past, there have been problems with vitex (*Vitex rotundfolia*). Council has prohibited the planting of beach vitex and any occurrences are eradicated immediately. Currently there is no beach vitex on Edisto Beach.

The beach zone area is comprised of a dry berm zone located beyond the high tide line, an intertidal zone that is alternately covered and exposed by tidal action, and a subtidal zone that occurs below the low tide line and extends seaward, merging with the ocean surf. In general, beaches are gently sloping communities that serve as transitional areas between open water and upland terrestrial communities. These communities experience almost continuous changes as they are exposed to erosion and deposition by winds, waves and currents. Sediments are unstable and vegetation is absent. Wave action, longshore currents, shifting sands, tidal rise and fall, heavy predation, and extreme temperature and salinity fluctuations combine to create a rigorous environment for macro-invertebrates. Macro-invertebrates are the predominant faunal organisms inhabiting the beach region and most live beneath the sand surface where salinities and temperatures are most constant. Relatively few species inhabit sandy beaches, but those present frequently occur in large numbers. Consequently, high-energy beaches are far from being biological deserts, and together with the associated fauna they act as extensive food-filtering systems. Typical beach inhabitants are beach fleas (*Orchestia sp*.) and ghost crabs (*Ocypode quadrata*) in the beach berm. Coquinas (*Donax variabilis*), mole crabs (*Emerita talpoida*) and various burrowing worms inhabit the beach intertidal zone, and blue crabs (*Callinectes sapidus*), horseshoe crabs (*Limulus polyphemus*), sand dollars (*Echinarachnius parma*) and numerous clams and gastropod mollusks inhabit the beach subtidal areas.

Maritime shrub thickets normally occur landward of the dune where it is protected from ocean spray and waves. These habitats are rare and sporadic along the beachfront of Edisto Island, occurring on the marsh side of the island and at the Edisto Beach State Park area. Dominant shrubs and trees in this community are wax myrtle (*Myrica cerifera*), yaupon (*Ilex vomitoria*), red cedar (*Juniperus virginica*), live oak (*Quercus virginiana*), and loblolly pine (*Pinus taeda*). Vines are also common with greenbriar (*Smilax bona-nox*), pepper-vine (*Ampelopsis arborea*) and grape (*Vitus rotundifolia*) being particularly abundant. This community offers cover for a variety of songbirds. Other important species that may be found in the thickets include the seaside sparrow, painted bunting, saltmarsh sharp-tailed sparrow, Nelson's sharp-tailed sparrow, and marsh and sedge wrens.

Remnants of the maritime forest are still visible today although altered by development. The maritime forests typically found on barrier islands are characterized by slow-growing and salt tolerant species. Tree canopy species on Edisto include southern live oak (*Quercus virginiana*), laurel oak (*Q. laurifoia*), magnolia (*Magnolia sp.*), loblolly pine (*Pinus taeda*), slash pine (*P. elliottii*), cabbage palm (*Sabal palmetto*), dwarf palmetto (*Sabal minor*), red bay (*Persea*) and long leaf pine (*P. palustris*) and are often found in hammock-like islands.

Typical of the understory plants (shrub thicket) include cabbage palm (*Sabal palmetto*), southern red cedar (*Juniperus silicicola*), eastern red cedar (*J. virginiana*), American holly (*Ilex opaca*), yaupon holly (*Ilex vomitoria*), purple passionflower (*Passiflora incarnate*), squaw vine (*Mitchella repens*), tall nutrush,

(*Scleria triglomerata*), and blackseed needlegrass (*Stipa avenacea*). Dispersed throughout this native maritime forest vegetation are non-native, imported species that have been used on the beach for landscaping. Landscaping has evolved from natural grasses to irrigated lawns of St. Augustine, Zoysia, Paspalum, and Bermuda grasses.

Wetlands are transitional habitats between water and dry land. The coastal wetlands that are prevalent at Edisto Island consist primarily of salt marshes. In contrast to surrounding states, South Carolina does not have adequate habitat for submerged aquatic vegetation and coastal areas consist predominantly of intertidal emergent habitat (http://portal.ncdenr.org/c/document_library/get_file?uuid=6edc629c-628d-48fb-a8bf-dbbfbca94a2c&groupId=38337). Other wetlands in the project area include bottomland hardwood swamps and fresh marshes. Marsh communities have been well documented in terms of productivity, animal diversity and importance to the marine system (and to people). In fact, they are among the most productive ecosystems on Earth (Stedman and Dahl 2008).

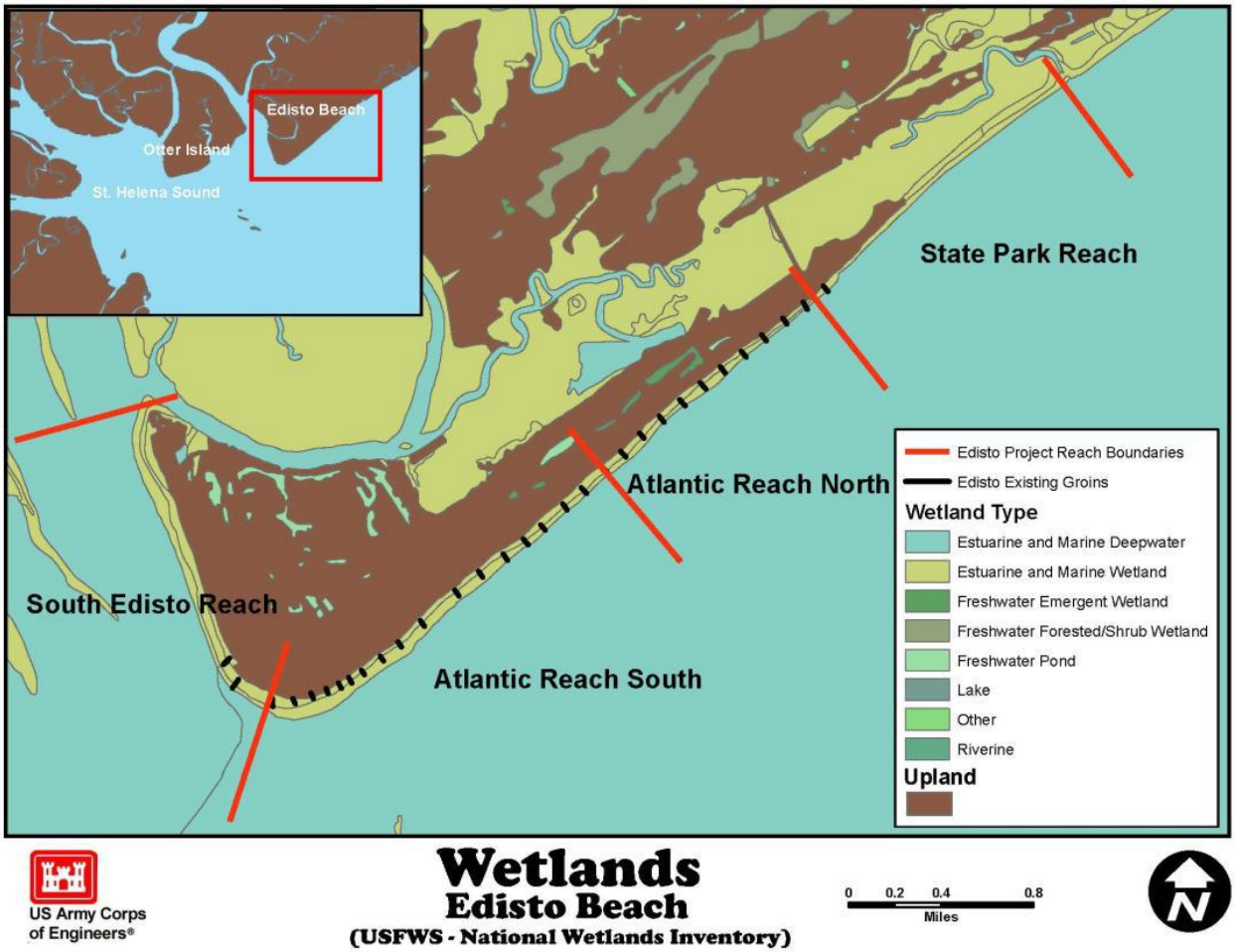


FIGURE 5 WETLAND MAP

Tidal marshes serve many important functions and are prevalent on the backside of Edisto Beach. The basis of the importance of these marsh communities involves the basic high productivity of the marsh

itself and its ability to capture and retain nutrients. The dense plant growth in the marsh also provides excellent cover for many species of birds, aquatic and semi-aquatic mammals, reptiles and amphibians and typically provides spawning grounds, nurseries, shelter and food for many species of finfish, shellfish, birds and other types of wildlife. Besides the water quality and habitat benefits, marshes also serve to buffer storm waves and slow shoreline erosion. Substrates in these communities are inhabited by a myriad of foraminiferans, nematodes, annelids, arthropods, mollusks such as the salt marsh snail (*Melampus bidentatus*), marsh periwinkle (*Littorina littorea*), ribbed muscle (*Modiolus demissus*) and eastern oyster (*Crassostrea virginica*) and crustaceans such as the penaeid shrimps (*Penaeida*e), sand fiddler (*Uca pugilator*), mud fiddler (*U. pugnax*) and blue crabs (*Callinectes sapidu*s). The marsh community provides a nursery ground for the principal commercial marine organisms of the state - white *(Litopenaeus setiferus*) and brown shrimp (*Farfantepenaeus*) and blue crabs.

Marshes also serve as spawning and nursery grounds for many commercial and sport fishes and shellfishes, in addition to being valuable shellfish growing areas. Numerous shorebirds, waterfowl, gulls, herons and egrets can be found throughout these marsh communities. Birds such as the clapper rail (*Rallus longirostris*), plovers (*Charadrius sp*. and *Pluvialis sp*.), dowitchers (*Limnodromus sp*.) and sandpipers (many species) thrive on the benthic invertebrate population around the shoreline and on open flats. In the open water bordering these communities, waterfowl feed on vegetation or small marine fishes and free-swimming invertebrates. The herons and egrets feed on fish, invertebrates, reptiles, amphibians and small mammals. They also are found nesting and roosting during the summer months. Many gulls utilize these communities for resting and scavenging year-around. Other birds such as the red-winged blackbird (*Agelaius phoeniceus*), common and boat-tailed grackles (*Quiscalus sp*.), sparrows and warblers can be found nesting and feeding on insects and grains. Birds of prey such as the osprey (*Pandion haliaetus*) and marsh hawk (*Circus cyaneus*) also utilize these communities to some degree. Mammals of the marshes typically include the raccoon (*Procyon lotor*), otter (*Lutra canadensis*), marsh rice rat (*Oryzomys palustris*), opossum, (*Didelphis virginiana*), marsh rabbit *(Sylvilagus palustris*) and American mink (*Mustela vison*).

The Town of Edisto Beach has implemented numerous natural protection efforts. These efforts include beach nourishment, dune rebuilding and revegetation, ordinances to protect sea turtles, wetlands, beach and waterways, storm water management, trees, sea turtle monitoring, and code enforcement personnel.

2.4.1 Threatened and Endangered Species

In correspondence from the United States Department of the Interior, Fish and Wildlife Service dated October 18, 2005, a biological opinion along the shoreline of Edisto Beach, the piping plover (*Charadrius melodus*) and the sea-beach amaranth (*Amaranthus pumilus*) per section 7 of the Endangered Species Act of 1973 are not present in this area. Piping plovers are threatened and have been found at 4 areas of designated critical wintering habitat near Edisto Beach. From north to south these areas are (1) Seabrook Island, (2) Deveaux Bank, (3) Otter Island and (4) Harbor Island. Edisto Beach is not known to have any overwintering piping plovers (Melissa Bimby, USFWS, personal communication). Until 2009, the Loggerhead Sea Turtle was the only endangered species on Edisto Beach. In 2009, a Leatherback Sea Turtle *(Dermochelys coriacea)* nested at the Edisto Beach State Park. Green and Kemp's Ridley turtles can nest on South Carolina beaches, but nesting on Edisto is rare. A current list of rare, threatened and endangered species on or near Edisto Island provided by the South Carolina Department of Natural

Resources is shown in Table 1 and Table 2 provides a current list of the United States Fish and Wildlife Service of threatened and endangered species in Colleton county, SC.

TABLE 1. NMFS LISTED THREATENED AND ENDANGERED SPECIES FOUND IN SOUTH CAROLINA

Common Name	Scientific Name	Status	Date Listed
Marine Mammals			
Blue whale	*Balaenoptera musculus*	E	12/2/1970
Finback whale	*Balaenoptera physalus*	E	12/2/1970
Humpback whale	*Megaptera movaeangliae*	E	12/2/1970
North Atlantic right whale	*Eubalaena glacialis*	E	12/2/1970
Sei whale	*Balaenoptera borealis*	E	12/2/1970
Sperm whale	*Physeter macrocephalus*	E	12/2/1970
Turtles			
Kemp's ridley sea turtle	*Lepidochelys kempii*	E	12/2/1970
Leatherback sea turtle	*Dermochelys coriacea*	E	6/2/1970
Loggerhead sea turtle	*Carretta caretta*	T	7/28/1978
Green sea turtle	*Chelonia mydas*	T	7/28/1978
Hawksbill sea turtle	*Eretmochelys imbricate*	E	6/2/1970
Fish			
Atlantic sturgeon	*Acipenser oxyrinchus*	E	2/6/2012
Shortnose sturgeon	*Acipenser brevirostrum*	E	3/11/1967
E-Federally endangered	T-Federally threatened		

TABLE 2 USFWS LISTED THREATENED AND ENDANGERED SPECIES OCCURRING OR POSSIBLY OCCURRING IN COLLETON COUNTY, S.C.

Colleton County T&E Species			
Common Name	Scientific Name	Status	Occurrence
Bald eagle	*Haliaeetus leucocephalus*	BGEPA	Known
Wood stork	*Mycteria Americana*	E	Known
Red-cockaded woodpecker	*Picoides borealis*	E	Known
Piping plover	*Charadrius melodus*	T,CH	Known
Kemp's ridley sea turtle	*Lepidochelys kempii*	E	Known
Leatherback sea turtle	*Dermochelys coriacea*	E	Known
Loggerhead sea turtle	*Caretta caretta*	T, CH	Known
Green sea turtle	*Chelonia mydas*	T	Known
Shortnose sturgeon	*Acipenser brevirostrum*	E	Known
Atlantic sturgeon	*Acipenser oxyrinchus*	E	Known
Pondberry	*Lindera melissifolia*	E	Possible
Canby's dropwort	*Oxypolis canbyi*	E	Known
Southern dusky salamander	*Desmognathus auriculatus*	SC	Possible
Angiosperm	*Elytraria caroliniensis*	SC	Known
Godfrey's privet	*Forestiera godfreyi*	SC	Known
Pondspice	*Litsea aestivalis*	SC	Known
Boykin's lobelia	*Lobelia boykinii*	SC	Known
Carolina bird-in-a-nest	*Macbridea caroliniana*	SC	Known
Crested fringed orchid	*Pteroglossaspis ecristata*	SC	Known
Bachman's sparrow	*Aimophila aestivalis*	SC	Possible
Kirtland's warbler	*Dendroica kirtlandii*	E	Possible
Henslow's sparrow	*Ammodramus henslowii*	SC	Possible
Rufa Red knot	*Calidris canutus rufa*	P	Possible
Black-throated green warbler	*Dendroica virens*	SC	Possible
Swallow-tailed kite	*Elanoides forficatus forficatus*	SC	Known
American kestrel	*Falco sparverius*	SC	Possible
American oystercatcher	*Haematopus palliates*	SC	Known
Loggerhead shrike	*Lanius ludovicianus*	SC	Possible
Black rail	*Lateralius jamaicensis*	SC	Possible
Painted bunting	*Passerina ciris ciris*	SC	Known
Gull-billed tern	*Sterna nilotica*	SC	Known
Bluebarred pygmy sunfish	*Elassoma okatie*	SC	Known
Southern hognose snake	*Heterodon simus*	SC	Known
Island glass lizard	*Ophisaurus compressus*	SC	Known
Rafinesque's big eared bat	*Corynorhinus rafinesquii*	SC	Known

E-Federally endangered T-Federally threatened P-Proposed
BGEPA-Bald and Golden Eagle Protection Act CH-Critical Habitat Designated
SC-State Species of Concern. These species are rare or limited in distribution but are not currently legally threatened or endangered

2.4.2 Turtle Nesting

The Town of Edisto Beach continues to do a commendable job in monitoring the nesting activities of the Loggerhead Turtle. In 1990, a group of volunteers organized to start the annual monitoring activity. This volunteer group has grown and remains diligent in monitoring nesting activities. To accommodate the Turtle Patrol, the Town has staff embedded in the organization to ensure disturbance from human activity is curtailed during the nesting season and provide a conduit for communication to resolve issues that may impact the nesting activities. In 2010, the Georgia and South Carolina Department of Natural Resources, and North Carolina Wildlife Resource Commission participated in a multi-state genetics research project along with the University of Georgia to look at basic loggerhead sea turtle nesting habits. An egg from each nest was collected and tested for DNA to identify individual loggerhead nesting females. Data from this study can be obtained from www.Seaturtle.org. In September 2011, the U.S. Fish and Wildlife Service and NOAA National Marine Fisheries Service (NMFS) jointly published a final rule revising the loggerhead's listing from a single worldwide threatened species to nine distinct population segments (DPS) listed as either endangered or threatened (76 FR 58868). The Northwest Atlantic DPS of loggerhead sea turtle is listed as threatened. The U.S. Fish and Wildlife Service, published a final rule in the Federal Register July 10, 2014, that designated specific areas in the terrestrial environment of the U.S. Atlantic and Gulf of Mexico coasts as critical habitat for the Northwest Atlantic Ocean distinct population segment of the loggerhead sea turtle under the Endangered Species Act of 1973, as amended. This new designation included Edisto Beach. Table 3 provides historical data on sea turtle nesting on Edisto Beach. Figure 6 provides a map of the 2016 sea turtle nesting sites on Edisto Beach.

TABLE 3 INVENTORY OF SEA TURTLE NESTING ON EDISTO BEACH

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Number of Nests	88	50	104	49	77	80	42	173	109	41	102	162
False Crawls	66	54	N/A	24	65	50	44	151	66	27	73	75
Nest Relocated	44	22	36	32	39	51	31	103	78	34	65	118
Nest Success*	83	46	67	35	59	72	38	163	105	40	101	
Nest Success %**	96.51	92.00	64.00	71.00	76.6	89.6	89.9	94.4	97.2	92.5	96.8	72.2
Emerged Hatchling***	7851	4481	5669	3895	5250	4912	2992	13335	8094	3106	7407	8902
Mean Hatch Success****	76.5	71.0	71.0	77	56.9	66.9	65	77.1	73.6	65.7	73.1	70
Strandings	1	3	5	2	4	6	3	4	3	1	5	2

*Nest Success = number of nests that hatch with a 10% or greater hatch success.

**Nest Success % = percentage of the nests that hatched with a 10% or greater hatch success.

***Emerged Hatchling = number of hatchlings that emerged live from the nest.

****Mean Hatch Success = Average of all the nests of the season. Hatch success assesses the number of eggs that hatched.

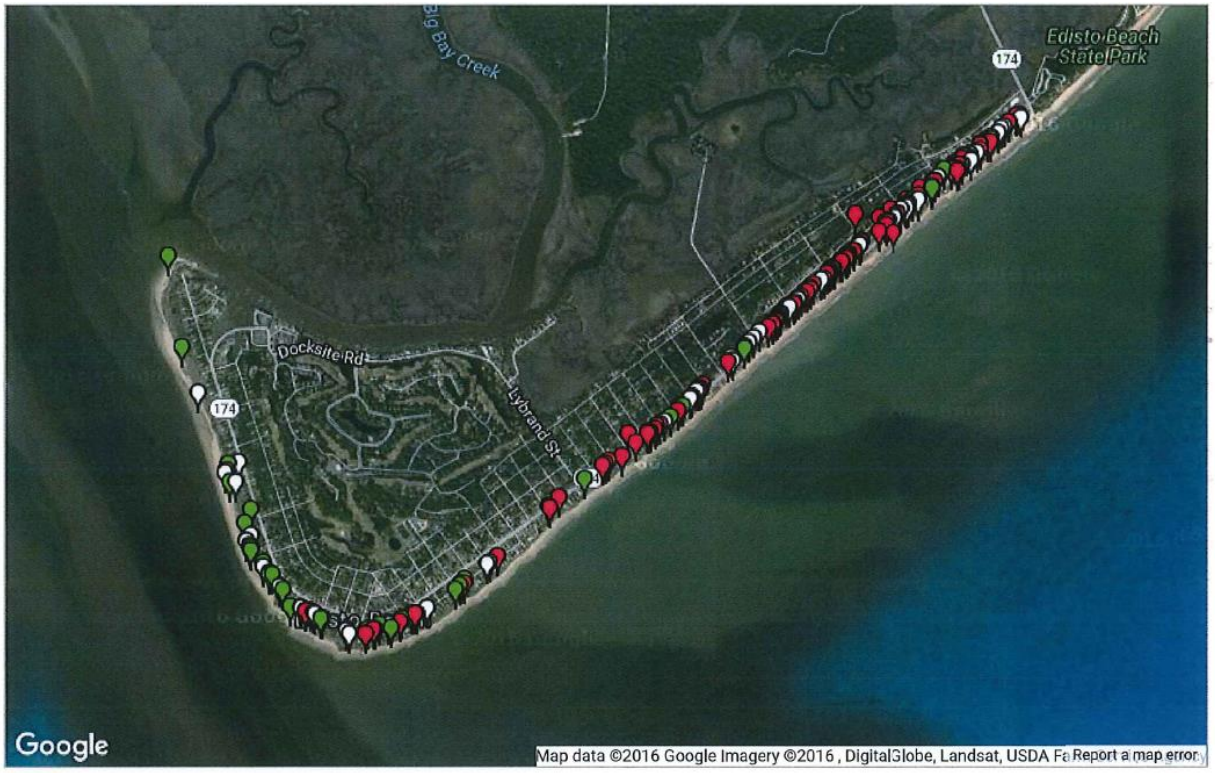


FIGURE 6 TURTLE NESTING HABITAT MAP (2016)

2.5 Existing Public Access and Map

According to the Beachfront Management Act of 1990, as amended, the General Assembly of South Carolina realizes that it is in the best interest of the State to protect and promote the increase in public access to the state's beaches. If a local government wants to participate in the state bonding programs created for beach renourishment or other beach funding programs, the governing body must adopt and enforce a local beachfront management plan that is consistent with the State Beachfront Management Act. Those not in compliance with the Coastal Council's regulations for access and parking would not be eligible for funding for beach nourishment projects.

The South Carolina Coastal Zone Management Program states "public funds can only be expended for beach or shore erosion control in areas, communities, or on barrier islands to which the public has full and complete access" (p. IV-64). Table 4 below defines the Beachfront Management Act definition of "full and complete access".

TABLE 4 DHEC OCRM PUBLIC BEACH ACCESS FACILITY CLASSIFICATION

Type of Facility	Distance on Either Side of Access Point Which Will be Considered as Having Full and Complete Access	Minimum Facilities
Public Access Point	1/8 Mile	Trash receptacle; walkover/improved surface

		access, signage, on-street parking for 6 vehicles
Local Public Access Park	¼ mile	As above, parking for 10 vehicles
Neighborhood Public Access Park	½ mile	As above, parking for 25 vehicles
Community Public Access Park	¾ mile	As above, showers, lifeguards, concession, handicapped access and parking, parking for 75 vehicles
Regional Public Access Park	1 mile	As above, parking for 150 vehicles or greater

Based on the three factors that comprise 'reasonable' in the definition of public beach access and parking, the Town of Edisto Beach's number and distribution of public access points are excellent for visitors to Edisto Beach.

Excluding the State Park, the Town has 38 public beach access points that lie along Palmetto Boulevard, Point Street and Yacht Club Road. Because the beach access points were previously street termini, the average width of each access point is 50 feet with an average distance between each access point of 400 ft.

Public parking along the rights-of-way of the Town's streets is permitted by the Town. Signs are posted indicating where parking is not allowed, and the Town takes the position that public parking is allowed wherever it is not prohibited. Beach visitors are accustomed to this arrangement and the need to post signs stating where parking is allowed has not been necessary. According to the Edisto Beach Beachfront Management Plan prepared by Planning Services Group, Inc. in 1991, there are 113 on-street parking spaces. In addition, the Town purchased property within 1,000 feet of the Atlantic Ocean and established a public parking lot that provides twenty (20) public parking spaces within walking distance of the beach.

The on-street parking count procedure utilized involved measurement of distances along the rights-of-way where parking would be possible (not prohibited by the Town; not blocking driveways or sidewalks, not precluded by vegetation/landscaping, not precluded by property owner obstruction); where parking is parallel to the road, each parking space was assumed to require 30 feet of right-of-way; where parking is perpendicular to the road or a street-end, parking space widths were assumed to be approximately 12-15 feet. There are no fees for on-street parking.

Between 1991 and 2008, no additional off-street parking was constructed. In 2009, Mitchell Street, Baynard, Jenkins and Neptune Streets were opened for additional off-street parking totaling 43 additional spaces. In 2011, 8 additional off-street parking spaces were added at the Baynard Street beach access. At the time of this update, the Town of Edisto Beach has 206 off-street parking spaces. Hurricane Matthew changed the layout of many beach accesses and off-street parking will be re-evaluated and additions may be implemented.

Each access point is identified with highly reflective “Beach Access” signs numbered 1 through 38. Each access point has a trash receptacle, a pet waste bag disposal station, a life ring, a viewing bench, a bicycle rack and rules signs. Annual maintenance is performed at each access point by volunteer groups and town personnel.

In 2008, each access was delineated with rope fencing and waste can enclosures were constructed. In 2009, signage was replaced with highly reflective blue signs that are numbered to correspond with block numbers on Palmetto Boulevard. Corresponding numbered signs were placed on the beach front to provide visitors with a landmark for ease of access/egress or for emergency response since houses are not numbered on the beach front. Old wooden pet waste bag disposal stations were replaced with composite (Green) pet waste bag disposal stations with biodegradable bags and bags are replenished as needed. Other amenities such as bicycle racks and viewing benches were installed at all beach accesses. In 2010, all “Keep off the Dunes” signs were replaced as well as “Danger Keep Off” signs placed at all groins. All accesses are accessible with beach wheelchairs provided free of charge to the public through the Edisto Beach Fire Department or for a fee at a local retail establishment.

There are several privately owned vacant lots on the beachfront that are utilized by the general public to gain access to the beachfront. The Town does not promote access across private property and across dune areas. Beside the access point at Baynard Street is an additional private access area that serves Wyndham Resorts. The right-of-way leading to the facility is owned by the Town. This facility is accessible to the public and contains a drop-off area for a tram shuttle, concessions, showers, and restrooms, handicap access, trash receptacles, signage and a walk-over structure. Off street parking was improved in 2010.

The Town has worked diligently to remove private encroachments and prohibits any new encroachments. Some long-established encroachments persist due to complex legal issues, but these encroachments have been accounted for in the parking counts of the plan. License agreements between the Town and homeowners were executed on access points with private encroachments to ensure that as these residences are repaired or replaced, encroachments are eliminated from the public access.

The number and distribution of public access points are excellent, and sufficient access facilities and parking exist to classify 100 % of Edisto Beach as having full and complete access per the State guidelines (SCC, 1995; see Table 3). DHEC OCRM recognizes that full and complete public access is provided along approximately 7 miles of the beach from a point 1/8 mile (660 feet) west of the public beach access at Coral Street (Beach Access 1) to a point 1/8 mile (660 feet) of the public beach access at Yacht Club Road.

There are 113 on-street parking areas. There are 24 public access points that provide an additional 222 parking spaces. Two private parking areas-Pavilion Pier and facility at Baynard Street (Wyndham Resort) provide additional parking as well as the State Park. Baynard Street also has a private restroom area provided by Wyndham Resort. Table 5. provides a list of the Edisto Beach accesses and amenities.

TABLE 5 EDISTO BEACH PUBLIC ACCESS TABLE

Location	Distance to Next Access	Sign Number	Pedestrian Only	Boardwalk	Walkover	Private	Concessions	Off-Street Parking	On-Street Parking	Pet Waste Bag Disposal Station	Handicapped Access	Trash Receptacles	Showers/Restrooms	Fencing	Signage	Notes
Coral St.	842	1						6	√	√		√		√	√	
Fenwick St.	807	1a	√			√			√	√				√	√	Landscape
Mary St.	829	2	√						√	√		√		√	√	
Whaley St.	791	3	√			√			√	√		√		√	√	Septic
Matilda St.	797	4	√						√	√		√			√	
Cupid St.	787	5	√						√	√		√		√	√	
Atlantic St.	802	6	√						√	√		√		√	√	
Portia St.	797	7	√						√	√		√		√	√	
Dawhoo St.	300	8						12	√	√		√		√	√	
Cheehaw St.	288	9				√		10	√	√		√		√	√	Block wall
Osceola St.	290	10				√		10	√	√		√		√	√	Landscape
Byrd St.	300	11	√			√			√	√		√		√	√	Fence
Nancy St.	302	12						10	√	√		√		√	√	
Thistle St.	317	13						11	√	√	√	√		√	√	
Chancellor St.	300	14	√					8	√	√		√		√	√	
Dorothy St.	300	15	√			√			√	√		√		√	√	Drive/Trellis
Marianne St.	284	16				√		10	√	√	√	√		√	√	Driveway
Lybrand St.	300	17		√	√	√		10	√	√	√	√		√	√	wall
Catherine St.	300	18	√	√					√	√		√		√	√	
Mitchell St.	303	19			√	√		12	√	√	√	√		√	√	Walkway
Baynard St.	300	20	√		√		√	12	√	√	√	√		√	√	8 tba 2011
Edings St.	300	21		√	√		√	12	√	√	√	√		√	√	
Jenkins St.	300	22						8	√	√	√	√		√	√	
Seabrook St.	300	23				√		7	√	√	√	√		√	√	Propane tank
Murray St.	300	24						10	√	√	√	√		√	√	
Holmes St.	308	25				√		6	√	√	√	√		√	√	Hedgerow
Loring St.	300	26				√		6	√	√	√	√		√	√	Driveway
Laroche St.	300	27				√		8	√	√	√	√		√	√	Driveway
Neptune St.	907	28	√					12	√	√	√	√		√	√	
Billow St.	300	29	√	√		√		8	√	√		√		√	√	Driveway
White Cap St.	350	30						7	√	√	√	√		√	√	
Edisto St.	387	31				√		7	√	√	√	√		√	√	Retain Wall
Mikell St.	599	32		√				5	√	√	√	√		√	√	
Townsend St.	1249	33	√					3	√	√		√		√	√	
Louise St.	600	34	√	√				2	√	√		√		√	√	
Ebb Tide St.	1425	35		√	√			7	√	√	√	√		√	√	
Yacht Club Rd	865	36	√	√		√			√	√		√		√	√	Sidewalk/walk
Yacht Club		37		√				3	√					√	√	

FIGURE 7 PUBLIC BEACH ACCESS (DHEC 2017)

[11]

[11] SC Beach Guide http://gis.dhec.sc.gov/beachaccess/

3. Beachfront Drainage Plan

Controlling storm water and other discharges along the beachfront is a priority for the Town. Uncontrolled, direct discharge to a beach not only erodes dunes and beach areas, but impacts water quality.

In 1999, the U. S. Environmental Protection Agency (EPA) issued the Storm Water Phase II General Rule. The program uses the National Pollutant Discharge Elimination System (NPDES) permit coverage to address storm water run-off from smaller municipal separate storm sewer systems (MS4s) in urbanized areas and construction sites greater than one acre. Phase II is intended to reduce impacts on water quality caused by storm water runoff by instituting controls to unregulated sources of discharges. Although the Town does not currently fall under the Phase II regulations, in the future this could change so the Town decided to take a proactive approach and begin addressing storm water issues.

In 2004, the Town of Edisto Beach contracted with B.P. Barber & Associates, Inc. (BPB) to develop a Storm Water Management Plan to address storm water quality and quantity issues. Six measures identified by the Environmental Protection Agency (EPA) and the South Carolina Department of Health and Environmental Control (SCDEHC) were reviewed by BPB and best management practices were developed for implementation by the Town.[12]

The six measures and corresponding best management practices are:

1. Public Education and Outreach
   - Use EPA and DHEC Phase II recommendations
   - Use existing program components such as local access TV channel, water bills, local newspaper, real estate agents, and welcome packages
   - Partnership with other governmental entities
   - Implement classroom education
   - Distribute storm water educational materials tailored for specific groups.
2. Public Participation/Involvement
   - Storm water Advisory Board
   - Surveys
   - Sponsored community activities
3. Illicit Discharge Detection and Elimination
   - Prepare storm sewer system map
   - Prepare storm water ordinance (8-9-07)
   - Identify illicit discharges
4. Construction Site Runoff Control
   - Structural controls
   - Develop and enforce an ordinance and storm water and sediment reduction plan
   - Increase enforcement
   - Waste management for general construction sites
   - Storm water advisory board meetings
5. Post-Construction Runoff Control

[12] BPB (2004) "Town of Edisto Beach Storm Water Management Plan".

- Structural best management practices
- Revise land development standards
- Formulate a land development plan
- Implement a post-construction management plan

6. Pollution Prevention/Good Housekeeping
    - Implement an employee education program
    - Adopt internal regulations and practices
    - Periodic monitoring and reporting of employee activities

Water quality concerns from flooding are being addressed through changes in zoning ordinances included in the Engineering Study for Impervious Area Zoning Requirements (January 2003).[13] In 2002, the Town adopted two ordinances placing limits on impervious surfaces. The approach taken by Council involved placing limits on the size of residential dwellings and other impervious areas within an R-1 lot. By limiting the impervious area allowed in future development, the Town is lessening the impact that development will have on the already burdened storm water drainage system. In 2011, this ordinance was modified to account for larger lots versus percent of impervious area.

A Flood Damage Prevention Ordinance was adopted by the Town on November 8, 2007. [14] The objectives of this ordinance are to protect human life and health, to help maintain a stable tax base by providing for sound use and development of flood-prone areas in such a manner as to minimize flood areas and to ensure that potential home buyers are notified that property is in a flood area. The provisions of this ordinance are intended to minimize damage to public facilities and utilities such as water and gas mains, electric, telephone, and sewer lines, streets and bridges located in the floodplain, and prolonged business interruptions. Another objective of this ordinance is to minimize expenditures of public money for costly flood control projects and rescue and relief efforts associated with flooding.

The Town does not have an extensive storm water collection system and relies heavily on storm water ditches to convey runoff to areas of detention before release to the receiving streams or infiltration of the excess water into the ground. Due to the flat slopes and low elevations characteristic of the Town within the coastal plain that is already hindered by tidal influence, localized flooding will continue to increase. Along with the Storm Water Management Ordinance and associated plan, the Town has been working with the South Carolina Department of Transportation (SCDOT) to address flooding and related drainage issues on Palmetto Boulevard (SC 174). Curb and gutter systems installed by SCDOT on Palmetto Boulevard are not connected to an outfall. The Town has been actively working to re-establish roadside ditches to drain storm water to the lagoons before septic systems can be impacted. One major drainage problem on the north end of Myrtle Street is being addressed through a joint project between the Town and the Department of Transportation. The Town is also reviewing ways to address other problems as part of an initiative to increase our Community Rating Score.

[13] BPB (2003). "Engineering Study for Impervious Area Zoning Requirements", 22pp +appendices.
[14] Code of Ordinances, Town of Edisto Beach, South Carolina, Municipal Code Corporation, Chapter 14, Article IV. http://library.municode.com/index.aspx?clientId=13036&stateId=40&stateName=South%20Carolina.

The Town cooperates with the DHEC to monitor beach water quality at 12 locations.[15] These sites are located at:

- LC-077 Pavilion Restaurant
- LC-077A2 Mary Street
- LC-077A Matilda Street
- LC-077B Atlantic Street
- LC-078 Cheehaw Street
- LC-078B Dorothy Street
- LC-079 Edings Street
- LC-079A Neptune Street
- LC-080 Edisto Street
- LC-080A Mikell Street
- LC-081 Ebb Tide Street
- LC-082 Bay Point

Edisto Island is located in Region 8 and all sites are tested every other week between May 15th and October 15th. The Town has a standard protocol for warning swimmers if bacteria levels in swimming waters are elevated. DHEC will notify the Town if water quality sampling results indicate unsafe conditions, at which time the Town and/or DHEC will post signs in any affected areas (media reports do not always reach visitors and residents, and are not relied upon). The signs warn against wading, swimming, shell collecting and fishing until bacteria levels return to normal. All postings of signs are coordinated between the Town and DHEC.

"During the summer of 2010, eight (8) routine samples collected at these stations exceeded 104 CFU/100ml. Of these, four (4) samples exceeded 500 CFU/100ml. On August 9, 2010, three consecutive stations, LC 080, LC-080A, and LC 081 had sample results of 521, 3255, and 691 CFU/100ml, respectively. The fourth sample that exceeded 500 CFU/100ml occurred on September 27 at station LC 080A (644 CFU/100ml)." (Edisto Beach Ocean Water QAPP, Rev. 0. December 2010, prepared by David Payne, DHEC)

[15] Bureau of Water (January 2009) "Ocean Water Quality Monitoring and Notification Program". www.scdhec.gov/beach

FIGURE 8 DHEC MONITORING LOCATION MAP (2016)

The advisories issued in 2010 had been the first advisories issued at Edisto Beach since 2004. However, there had been other samples exceeding 104 CFU/100ml, particularly at station LC 082 at the end of Yacht Club Road located near the confluence of Big Bay Creek with the South Edisto River. Big Bay Creek is located within Shellfish Management Area 13. The lower reaches are classified administratively as "Prohibited for Shellfish harvesting" due to the presence of a marina and numerous boat docks. The upper reaches of Big Bay Creek and its tributary, Scott Creek are classified as "Restricted" based on water quality sampling data for fecal coliform bacteria.

Upon issuance of any advisories, the Town checks with all septic companies to see if there are septic failures in the area of contamination. Failing septic systems during the tourist season have become a chronic issue and need to be monitored and correlated to increased bacteria levels.

According to DHEC, this increase in swimming advisories in 2010 warranted a sampling study to try and identify potential/probable sources of enterococcus bacteria. This study was completed in November of 2014 by Mr. David Payne, SC Department of Environmental Control. The study provided ocean water monitoring for Enterococcus bacteria at 14 stations of Edisto Island twice per month between May 1 and September 30. Enterococcus bacteria is an indicator of fecal waste from human or animal sources. The results showed that although four lagoon system discharges had the highest average bacteria

concentrations, they were reduced to background levels at the next stations downstream. The study results did not show a direct impact of these discharges on water quality at the beach monitoring stations. None of the outfalls are on the beachfront.

Since the study, there were six advisories in 2011 at LC-077A Matilda access, LC-080A Mikell Street, LC-081 Ebbtide and LC-082 Yacht Club; two advisories in 2012, LC-082 Yacht Club, LC-078B Dorothy Street; two advisories in 2013 at LC-082 Yacht Club and LC-081 Ebbtide Street; no advisories in 2014; six advisories in 2015, LC-077 State Park, LC-077B Atlantic Street, LC-078 Cheehaw Street, LC-078B Dorothy Street, LC-080A Mikell Street, and LC-081 Ebbtide Street and after Hurricane Matthew the beachfront was closed but no sampling was performed.

Impacts of Hurricane Matthew on septic systems highlighted the need to review future planning for a beachfront sewer system. Numerous traditional and engineered septic systems were destroyed or impacted. The Town had discussed the desire that DHEC require these systems be installed further away from the original permitted site if on the ocean side as part of an initiative to reduce the likelihood of repetitive damage, but this was not the case. DHEC even allowed engineered systems be replaced with traditional septic systems which the Town did not agree with.

4. Beach Management and Authorities

4.1 State Authorities

A summary of federal and state agencies with regulatory or management authority over the beach and their role in management of local beaches is included in Appendix 7.6.

4.1.1. Overview of State Policies (Beachfront Management Act)

The State Beachfront Management Act (S.C. Code Ann. § 48-39-250 *et seq)* became law in 1988, as amended (2016), and is intended to protect both life and property, protect unique ecological habitats, and preserve the beach for future use by all citizens of South Carolina. The Act addresses preservation of a dry, sand beach, public access opportunities, measures for renourishment on eroding beaches, and the protection of natural vegetation within the beach and dune system. The Act rejects the construction of new erosion control devices and adopts retreat and renourishment as the basic state policies for preserving and restoring oceanfront beaches in South Carolina. The Act directs DHEC OCRM to implement the forty-year retreat policy by designating a baseline and setback line (See Section 5.1) and regulating development on all oceanfront properties seaward of the setback line. The Act also provides establishment of a long-range comprehensive State plan for management of the beach and dune resources.

One of the most important provisions of the Act requires local beachfront counties and municipalities to develop and adopt local comprehensive beach management plans which refine the State's beach management strategy to address local conditions and issues. The Act requires that these local plans be long-range, comprehensive, and consistent with the State Beachfront Management Act. Once adopted locally, DHEC OCRM reviews the plan for approval, and approved local plans become part of the State

Beachfront Management Plan. Once approved, the local plan is required to be updated every five years in coordination with DHEC OCRM.

4.1.2 Beachfront Setback Area

The State of South Carolina established a 40-year policy of retreat as part of the Beachfront Management Act. DHEC OCRM, as the steward of the State's coastal resources, is responsible for implementing this policy. The implementation is derived from a baseline (Figure 9) established by DHEC OCRM which runs parallel to the shoreline on oceanfront beaches. The baseline is evaluated and redrawn by DHEC OCRM every 8 to 10 years and, as directed by the Beachfront Management Act, stretches of beach are divided into standard erosion zones and inlet zones based on their erosion characteristic. The Act was amended in 2016, prohibiting movement of the baseline seaward after December 31, 2017. (Note: the baseline map is in the process of review as of the date of this report)

The baseline for a standard erosion zone is established at the location of the crest of the primary oceanfront sand dune in that zone. If the shoreline in a standard erosion zone had previously been altered naturally or artificially by the construction of erosion control or other anthropogenic structures, the baseline is established where the crest of the dunes would be had the disturbance not occurred. Historically, nourished beach shorelines are not used to determine the baseline.

The baseline for inlet erosion zones is determined differently for inlets that are stabilized by jetties, groins or other structures, and inlets that are not stabilized. For unstabilized inlets, DHEC OCRM establishes the baseline at the most landward point of erosion at any time during the past forty years. For inlet zones that are stabilized by jetties, groins, or other structures, DHEC OCRM establishes the baseline at the location of the crest of the dune, and not at the location that the dunes would be had the inlet remained unstabilized.

All baseline decisions are determined by DHEC OCRM, founded on the best scientific and historical data available. In determining the baseline location for inlet erosion zones, DHEC OCRM must consider historical inlet migration, inlet stability, channel and ebb tidal delta changes, the effects of sediment bypassing on shorelines adjacent to the inlets, and the effects of nearby beach restoration projects on inlet sediment budgets.

The second part of implementing the 40-year retreat policy at the State level is the setback line. The setback line (Figure 9) is a boundary established by DHEC OCRM that is landward of the established baseline at a distance equal to forty times the average erosion rate, and not less than 20 feet.

No new construction is permitted seaward of the baseline, with the exception of wooden walkways no more than 6 feet wide, wooden decks no larger than 144 square feet, public fishing piers, golf courses, normal landscaping, pools that were located landward of existing functioning erosion control structures, groins built before 1988, or structures permitted by a DHEC OCRM special permit. A DHEC OCRM permit is required for all of the above actions except the construction of wooden walkways not more than 6 feet wide.

Construction within the State setback line is restricted in order to implement the State 40-year retreat policy. Construction, reconstruction, or alterations between the State baseline and setback lines are governed as habitable structures, erosion control devices and swimming pools. All other construction

between the baseline and setback lines requires a permit from DHEC OCRM. New habitable structures built between the baseline and the setback line may not exceed five thousand square feet of heated space, must be located as far landward on the property as possible, and must not incorporate any erosion control structure or device as part of the integral habitable structure. Edisto Beach further restricts building between the baseline and setback line. New habitable structures may not exceed 3,250 square feet. No part of the building may be constructed seaward of the baseline or on the primary sand dune. The permit applicant must certify to DHEC OCRM in writing that these conditions are accurate, and submit a drawing that shows the footprint of the structure on the property, a cross section of the structure, and the structure's relation to property lines and setback lines which may be in effect.

Owners may replace habitable structures permitted within the setback that have been destroyed beyond repair by natural causes after notifying DHEC OCRM. The owner must certify that the total square footage of the replacement structure seaward of the setback line is not greater than the original square footage beyond the setback line, that the replacement structure is no further seaward than the original structure, and that it is constructed as far landward as possible, considering local zoning and parking requirements.

No new erosion control devices are allowed to be constructed seaward of the setback line, except to protect a public highway which existed prior to the enactment of the Beachfront Management Act. Erosion control structures that existed before 1988 may not be repaired or replaced if destroyed by more than fifty (50 %) above grade. DHEC OCRM is responsible for assessing the damage to erosion control devices and structures, as well as habitable structures, to determine the extent of damage following hurricanes or other events.

Finally, no new pools are permitted to be constructed seaward of the setback line, unless they are located as far landward as possible from an existing, functional erosion control device (must be behind a seawall). Pools that existed prior to 1988 may be repaired or replaced, if destroyed beyond repair, and if the owner certifies to DHEC OCRM that the pool is moved as far landward as practical, is rebuilt no larger than the destroyed pool, and is constructed in such a manner that cannot become or act as an erosion control device. DHEC OCRM may issue a special permit for all other construction or alterations between the setback line and baseline.

FIGURE 9 BASELINE AND SETBACK LINE MAPS (2009)


Legend
OCRM Setback Line
OCRM Baseline
N
0 500 1,000 2,000 Feet


Jeremy Inlet
Legend
OCRM Setback Line
OCRM Baseline
N
0
500
1,000
2,000 Feet

4.2 Local Government and Authorities

The Town has jurisdiction over lands within its boundaries and is responsible for planning, zoning, building regulation, code enforcement, floodplain management, emergency services, etc. According to Title 5, Chapter 7 of the South Carolina Code of Laws, the municipal jurisdiction extends one-mile seaward of the high tide line[16]. The following Town departments have authority over the beach and nearby areas:

- Police and fire (public safety, emergency operations, evacuations, etc.)
- Building and planning (regulation of new and existing construction, land use and development, code enforcement, floodplain management)
- Public works (beach maintenance, street signs, access signs, ditch maintenance, collection of garbage and debris and overall rights of way maintenance)
- Municipal courts (adjudication of beach-related violations of the Town code)
- Town Council (policy implementation regarding beach related issues)

4.2.1 Municipality's Comprehensive Plan

The Comprehensive Plan provides a conventional zoning and land use plan for the area seaward of the setback plan. The first Comprehensive Plan was adopted in 1996 in compliance with the South Carolina Local Government Comprehensive Planning Enabling Act of 1994. Revised and adopted in 2003 and 2010, the Comprehensive Plan is a dynamic planning program for the physical, social and economic growth, development and redevelopment of the beach. It is intended to document the history of development for the Town of Edisto Beach, to identify the community's problems and needs, and to articulate a vision for its future. The plan is not a final product; it is part of a continuing planning process and is updated and revised as new information becomes available or as new problems and needs arise. The Plan was recently revised and adopted by Town Council in February 9, 2010. (http://townofedistobeach.com/departments/building.aspx) The plan was reviewed in 2015.

Other elements of the Comprehensive Plan promote protection and preservation of the beach and dune systems. The Natural Resources and Cultural element describes the beach systems and coastal dunes, as well as the endangered, threatened and rare plant communities and species. It lists goals to conserve and protect critical and sensitive natural and cultural resources in the Town. This section also discusses the implementation of the beach retreat and storm mitigation policy requiring new construction and reconstruction in the beach management overlay district meet certain setback requirements and encourages voluntary compliance with the 40-year setback zones. The Land Use element describes the challenges of accommodating new development while preserving the quality of its existing environment.

4.2.2 Municipality's Hazard Mitigation Plan

The Hazard Mitigation Plan is required by the Federal Emergency Management Agency (FEMA) for all counties in the State of South Carolina. The Town of Edisto Beach is included in the plan for Colleton, Hampton, and Jasper Counties, prepared by the Low Country Council of Governments. This plan represents

[16] South Carolina Code of Laws. Title 5, Municipal Corporations, Chapter 7, General Structure, Organization, Powers, Duties, Functions and Responsibilities of All Municipalities. Section 5-7-140. http://www.scstatehouse.gov/code/t05c007.htm.

the commitment of the jurisdictions to reduce the risks from natural hazards. Participants who comply with this requirement are eligible for pre-disaster mitigation funding from FEMA. The initial plan was submitted for review to the South Carolina Emergency Management Department and FEMA January 9, 2004. Formal plan submission was completed June 1, 2004. The Town update was completed in 2015.

4.2.3 Municipality's Disaster Preparedness and Evacuation Plan

The Town of Edisto Beach annually updates the Emergency Operations Plan which incorporates the Colleton County Emergency Preparedness Plan and the State of South Carolina Emergency Preparedness and Hurricane Plans. Under this plan, the Town government addresses the evacuation of citizens and visitors, damage assessment, and recovery. The Town plans to work with all appropriate agencies, in advance of the disaster and after, to minimize potential injury and damage and expedite recovery and redevelopment.

The purpose of the plan is to establish procedures for the preparation, staffing, organization, activation and operation of the Town of Edisto Beach Municipal Emergency Operations Center (MEOC) during peacetime emergency conditions. Additionally, to provide for the protection of the people and the resources within the Town, to minimize damage, injury and loss of life resulting from any peacetime emergency, provide for damage assessment and to provide for the continuity of government.

The plan establishes the policies and procedures by which the Town will coordinate local, state and federal response to disasters impacting the Town of Edisto Beach and its citizens.

- It describes how the Town will mobilize resources and conduct activities to guide and support local emergency management efforts through preparedness, response, recovery, and mitigation planning.
- It utilizes the Emergency Support Function (ESF) concept to marshal and apply resources and describes the responsibilities of Town departments in executing effective response and recovery operations.
- The plan supports the National Incident Management System (NIMS) which is a nationwide template enabling federal, state, local, and tribal governments and private sector and non-governmental organizations to work together effectively and efficiently to prevent, prepare for, respond to, and recover from domestic incidents regardless of cause, size, or complexity.
- The plan's procedures are applicable to all town and non-town employees, either assigned or attached to the MEOC. The governing body of each county shall operate, in accordance with Regulation 58-1, Local Emergency Preparedness Standards, their respective Emergency Operations Plans (EOPs) and Standard Operating Procedures (SOPs).

The Town of Edisto Beach is designated by the State Hurricane Plan as a Category 1 evacuation area, meaning that all tourists and residents should evacuate in the event that a Category 1 hurricane threatens the area.

- Coastal areas of South Carolina are at risk from the threat of hurricanes. There is significant possibility that a hurricane will strike the South Carolina coast and impact political jurisdictions within Colleton County with extremely strong winds, storm surge, and torrential rains; tornadoes may also be spawned by the hurricane. The potential for damage will depend on the storm's strength, where it makes landfall, and the storm path.
- When a hurricane/tropical event occurs, the Town of Edisto Beach will follow the Incident Command System (ICS) to control and direct the first response with the state, coordinating and providing support as needed.
- Movement of people into and within the disaster area will be controlled by the Town of Edisto Beach Police Department with the assistance of the Colleton County Sheriff's Office and the National Guard.

- The evacuation of residents and tourists from Edisto Beach is along SC 174 to US 17 South to SC 64 to Walterboro.
- The special medical needs shelter is Colleton Medical Center, located at 501 Robertson Boulevard, Walterboro, South Carolina. The Colleton County shelter is Colleton County Middle School, 1379 Tuskegee Airmen Drive, Walterboro SC.
- There are no hurricane shelters on the beach or island.
- When an emergency exceeds local resource and response capabilities, the local government will request assistance from the next higher level of government.
- Both local government and state agencies will utilize resources obtained by pre-arranged agreements with neighboring jurisdictions, states and federal entities, and the local private sector prior to seeking the next higher-level assistance.
- The federal government will be available with financial and additional resources when response and recovery operations exceed the capabilities of state government in a Presidential declared disaster or emergency. In some instances, federal agencies may provide direct assistance without a Presidential declaration.

RECOVERY

The Town's recovery plan establishes the following recovery goals:

- Maintain leadership;
- Promote economic recovery;
- Utilize local initiatives and resources;
- Maximize state/federal programs and benefits;
- Establish and maintain communication to and from citizens;
- Provide a point of contact for disaster victims; and
- Make maximum use of damage assessment for recovery planning.

The organization of the Town's recovery activities is consistent with the concepts of the Incident Command System (ICS) and Integrated Emergency Management System (IEMS). Storm recovery is divided into short term and long-term recovery.

OPERATIONS

Short-term Recovery efforts focus on the assessment of public safety and health concerns and an assessment of restoring essential public and social services in the following priority:

- Depending on the severity of the disaster, it may be necessary to conduct a public safety/security and health assessment to assess life and property prior to the general damage assessment by the DA team;
- Conduct detailed damage assessments to determine the need for supplemental Federal assistance;
- Conduct a debris assessment;
- Follow procedures for requesting Federal disaster assistance;
- Relax protective actions and coordinate access into evacuated areas;
- Restore essential public facilities and services;
- Coordinate Federal disaster assistance with special emphasis on temporary housing;
- Coordinate resources and materials;
- Coordinate volunteer organizations;
- Coordinate information and instructions to the public; and

- Identify post-disaster hazard mitigation activities to reduce future risks.

4.2.4 Beachfront Development Regulations

Non-Conforming Structures

Reconstruction of damaged non-conforming buildings and other structures along the oceanfront (and elsewhere on the beach) are governed by the Town Code, specifically:

Section 14-110 through Section 14-241 (Flood Damage Prevention) requires any work on substantially damaged or improved non-conforming structures to be in accordance with the requirements for new construction.

Section 86-171 provides that any non-conforming building or land uses may be repaired or reestablished as long as the extent of its pre-damage non-conformity is not increased, and repair or reconstruction begins within six months of damage. (i.e. the repaired or rebuilt structure shall not be larger than the original structure footprint, or size), it will have to meet all other requirements for new construction.

District Regulations

The Town has established the following zoning districts under Section 86-111:

R-1	Low density residential district
R-2	Two-family residential district
R-4	Low density residential and clubhouse district
R-7	Multi-family residential district
C-1	Office commercial district
C-2	Marine commercial district
C-3	Commercial district
PB	Public and semipublic district
PUD	Planned unit development district
O-1	Open space district
	Beach Overlay Zoning District

All property on the beachfront is zoned R-1 low density residential, except for the most northern section at the Pavilion which is zoned commercial C-3. Although the zoning ordinance defines a mobile home district, there are no mobile homes located on the beach. The current map does not show any R-2 districts, however the Town does have a few R-2 zoned residences constructed when R-2 zoning was allowed. Section 4.3 of this plan discusses provisions of the beach overlay zoning district that pertain to beach management.

Landscaping and Tree Removal

Tree protection, addressed under Sections 86-250 through 86-260 of the Town Code, includes regulations for tree removal. Section 86-187 of the Town Code addresses landscaping and storm water runoff.

4.2.5 Regulations on Beach and Shoreline Protection

The Town of Edisto Beach regulations pertaining to beach protection require conformance with the State's Beachfront Management Act. The Town's beach regulations also regulate development and other activities within the beach management overlay zoning district (86-145) that includes the area from the mean high water, and extends landward of the edge of Palmetto Boulevard. Within this beach management overlay zoning district (86-145), and the areas between this district and the first public street right of way running

parallel to the beachfront the Town prohibits new seawalls, bulkheads, rip-rap, and/or any hard erosion control structures, but allows revetments located landward of the OCRM baseline in accordance with 14-114 (g) (5) (existing erosion control structures may be maintained or repaired, but not enlarged, and are subject to local, state and federal permitting requirements). Town regulations also protect public beach accesses by prohibiting encroachments into public beach access routes and by prohibiting vehicle parking that blocks or obstructs public beach accesses. Any pre-existing encroachments have been licensed and upon such time as the home is destroyed or requires work on any encroachment, the owners must remove such encroachments.

Chapters 10, 14 and 86 of the Town Code contain regulations pertaining to the Building Code, zoning and land use regulations. The Beachfront Management Overlay District (86-145) establishes a beachfront overlay district that encompasses the entire beachfront seaward of Palmetto Boulevard, and extending down seaward of Yacht Club Road. The purpose of this district is to provide guidance for development in accordance with the South Carolina retreat strategy, and to protect, promote, and improve the public health, safety, morals, convenience, order, appearance, prosperity and general welfare. All of the property is Zoned R-1, with the occasional non-conforming uses mixed in from before the Town's Zoning Ordinance. The Town's Beachfront Management Overlay district compliments the state's retreat policy by establishing an additional setback line ten (10) feet landward of the state's baseline, and requiring that all new redevelopment be located as far landward as possible.

Chapter 86 of the Code defines zoning provisions including those pertaining to various districts including 86-145 which address the Beach Management Overlay Zoning District. Chapter 10 contains provisions that specifically address beach regulations. Chapter 14 addresses building and building regulations including building code enforcement and flood damage prevention under Article IV. [17] The Town also implemented an ordinance revision into the Flood Damage Prevention Ordinance [14-114 (g)(4)] that prohibits the new or reconstruction of seawalls, within the Beachfront Management Overlay District (86-145), even if located outside of the state's jurisdiction. Revetments however, are permissible under Town Ordinance 14-114(g)(5) and erosion control structures (even if temporary) in the event of an emergency under Town Ordinance 14-114(g)(8).

4.2.6 Other Regulations on Beach Management

Section 10-31 through Section 10-67A of the Town Code addresses beach regulations. Included in these sections are codes that address:

- Shark fishing: Section 10-31 unlawful to use chum to shark fish
- Throwing trash, rubbish, debris prohibited: Section 10-31
- Vehicles limited: Section 10-33
- Motorized watercraft, jet skis: Section 10-34 prohibited
- Camping: Section 10-37 overnight camping prohibited
- Limitations on Launching Boats from Beach: Section 10-38
- Fires prohibited: Section 10-39
- Beach Access Vegetation and fencing: Section 10-40
- Glass containers prohibited: Section 10-36

[17] Code of Ordinances, Town of Edisto Beach, South Carolina, Municipal Code Corporation, http://library.municode.com/index.aspx?clientId=13036&stateId=40&stateName=South%20Carolina

Sea Turtle Outdoor Lighting Regulations:

Sections 10-61 through 10-67a specify lighting requirements for the protection of sea turtles. Disorientations of sea turtles have become an increasing issue on Edisto Beach.

Flood Damage Prevention

Section 14-110 through Section 14-241 (Flood Damage Prevention) of the Town Code govern development activities within the Special Flood Hazard Area. The Town Code has adopted the most recent Flood Insurance Study (FIS) and Flood Insurance Rate Maps (FIRMs) for the Town of Edisto Beach (Federal Emergency Management Agency, 2017). The Town has established the minimum elevation of the lowest floor for new construction at the BFE, consistent with NFIP minimum requirements.

Dogs

The Town of Edisto Beach requires dogs be on a leash between May 1 and October 31. At all other times, dogs must be under the direct control of his owner or other competent person.[18]

Beach and Marine Regulations

The Town of Edisto Beach regulates many aspects of the beach and marine environment including shark fishing, garbage, motorized vehicles, motorized watercrafts, glass containers, camping, fires, boat launching, vegetation and sand fencing, digging and filling holes, dumping foreign objects into bodies of water, sea rescue, beach preservation fee, and beach management overlay zoning district.[19]

Regulation of Activities Affecting Protected Species and Habitats

The Town of Edisto Beach regulations require protection of sea turtles. The purpose of this division is to protect the threatened and endangered sea turtle that nest along the beaches of the Town by safeguarding the adult female turtle laying her eggs and hatchlings from sources of artificial light that cause disorientation and subsequent death.[20]

Vehicle Operation on the Beach or Beach Accesses

The Town of Edisto Beach regulates the driving or operating of any motor vehicle on the beach.[21]

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[18] Code of Ordinances, Town of Edisto Beach, South Carolina, Municipal Code Corporation, Chapter 6, Article II, Section 6-36.
http://library.municode.com/index.aspx?clientId=13036&stateId=40&stateName=South%20Carolina.

[19] Code of Ordinances, Town of Edisto Beach, South Carolina. Municipal Code Corporation, Chapter 10, Article II, Division I, Sections 10-40, Chapter 58, Sections 58-67, Chapter 64, Chapter 74, Section 74-34 and Chapter 86, Article IV, Division II, Section 86-145.

[20] Code of Ordinances, Town of Edisto Beach, South Carolina, Municipal Code Corporation, Chapter 10, Article II, Division 2.
http://library.municode.com/index.aspx?clientId=13036&stateId=40&stateName=South%20Carolina.

[21] Code of Ordinances, Town of Edisto Beach, South Carolina, Municipal Code Corporation, Chapter 10, Article II, Division 1, Section 10-33.
http://library.municode.com/index.aspx?clientId=13036&stateId=40&stateName=South%20Carolina.

Destruction of Sea Oat Plants

The Town of Edisto Beach prohibits the destruction of sea oat plants. It is unlawful for any person to damage, walk upon, vandalize, place objects or items upon, remove or in any other manner disrupt or disturb, the vegetation and fencing located on the beach, beach accesses, street ends adjacent to the beach, or any Town owed land.[22]

5. Erosion Control Management

5.1. Shoreline Change

Littoral transport is the movement of beach sediments caused by wave action or other influences such as wind, tide and non-tidal influences. Littoral transport can be perpendicular or parallel to the beach and impacts the location and orientation of the shoreline. Short term shoreline changes are caused by storm events and the modification of the shoreface by removal or installation of structures or renourishment.

By comparing shoreline data over a long period of time, short term effects associated with storms are eliminated and trends become apparent. These trends can provide a planning tool for measuring the future shoreline location. The southwestern end of Edisto Island where coastal and inlet processes interact plays a critical role in Edisto's long-term shoreline change.

According to the Cubit Engineering's Shorefront Management Plan, the shoreline on Edisto was stable between 1857 and 1937, but this pattern has not continued.[23] Between 1939 and 1954, major erosion was experienced; however corresponding accretion is most likely attributable to littoral drift and river sediment deposits. Previous studies indicate no clear net erosion or accretion trends are evident, making reasonable prediction of shoreline changes impossible.

In the Shorefront Management Plan the shoreline retreat at Jeremy Inlet is about 3.5 feet per year. At Mary Street in the northern portion of the Town, the shoreline change is about 1.5 feet per year. The nodal point of this long-term shoreline change occurs around Marianne Street. Southwest of Marianne Street, the coast has historically accreted.

Long term shoreline change data shows the coastline is eroding at an average rate of 31,000 cubic yards per year. The area subject to erosion loss extends from Marianne Street to the northern limit at Jeremy Inlet.[24]

According to the DHEC OCRM 2009 Annual State of the Beaches Report, areas located along the South Edisto Inlet shoreline generally only experience minimal seasonal changes because this area is sheltered from the open ocean. The area between Edisto Street and Billow Street known as "the Point" has been stable in recent years. The oceanfront southern half of Edisto Beach has experienced minor changes and has eroded 10-25 feet per year between 2006 and 2007 and 2007 and 2008. The northern half of the beachfront "was one of the most critically eroded sections of the beach anywhere in the state until the 2006 renourishment"[25]. The renourishment created a 100+ foot berm in most areas. After the 2006 renourishment, erosion was minimal with some areas of accretion especially at the Mikell Street area. According to the CSE Annual Beach and

[22] Code of Ordinances, Town of Edisto Beach, South Carolina, Municipal Code Corporation, Chapter 10, Article II, Division 1, Section 10-40. http://library.municode.com/index.aspx?clientId=13036&stateId=40&stateName=South%20Carolina.
[23] Cubit Engineering, LTD, Volume II (1987), p. 4-10.
[24] Cubit Engineering, LTD. Volume I (1987), p 2-3.
[25] DHEC OCRM. South Carolina Annual State of the Beach Report (2009), pp 20-22.

Inshore Surveys Assessment of Beach Groin Conditions Survey Report No. 9 dated January 7, 2016, "since the 2006 nourishment project, the beach has fluctuated between erosion and accretion with some yearly periods showing losses up to 212,000 cy (7.5 cy/ft) and others showing gains up to 46,500 (1.6 cy.ft). Reach 2 and Downcoast 1 lost 0.6 cy/ft and 5.1 cy/ft (respectively), while the remaining reaches gained up to 4.0 cy/ft."

5.1.1 Beach Profiles

Stations and reaches along Edisto Beach are used to measure changes in sand volume. Permanent monuments established by the State of South Carolina are situated from Big Bay Creek (OCRM 2110) to the State Park (OCRM 2270). These stations have been monitored since the early 1990s using OCRM lines as well as numerous intermediate profiles. Because of the presence of groins, typically three profiles per groin cell are monitored (CSE 2001), which provides for better accounting of fillets as sand shifts north or south within each groin cell as a function of wave direction.

Coordinates reference the landward control point along the beach-monitoring baseline (typically the centerline of Palmetto Boulevard). Stationing within groin cells 1–28 references the cell number followed by the distance (feet) downcoast of the respective updrift groin. "Offset" and "cutoff" refer to distances in feet along the profile from the baseline over which changes were calculated. The "2000-series" stations are OCRM permanent survey lines.

According to the DHEC 2016 State of the Beaches Report, Beach profile data was collected from 27 monitoring stations at Edisto Beach in October 2013 and November 2015. Monitoring Stations 2105E to 2130E are located along the South Edisto River shoreline and are sheltered from the open ocean. There is a wide, well-established dune field here, with dune crests of 8 to 10 feet, and a moderate expanse of dry-sand beach before the profile drops into the inlet. Monitoring Stations 2135 at Edisto Street and 2140 at Billow Street are located on The Point, where the shoreline curves from the South Edisto River to the open Atlantic. This section of shoreline, which can be very dynamic, is also the southern end of the Edisto Beach groin field. Beach profiles at these two monitoring stations show a narrower dune field and a narrower dry-sand beach seaward of the dune.

The southern half of Edisto Beach, from Monitoring Stations 2145E at Laroche Street to 2165 at Thistle Street, is the wider, more stable section of shoreline. There is a narrow but well-defined sand dune here, with a height of 10 to 12 feet, with a modest dry-sand beach at the base of the dune. The northern half of the developed portion of Edisto Beach extends from Monitoring Station 2170E at Osceola Street to Station 2200 at the Pavilion restaurant and pier, which is the northern end of the groin field. This section of beach has a chronic sand deficit. As a result, there is minimal or no sand dune here, with oceanfront houses encroaching on the beach. The beach profile is narrow and steep at this location. Monitoring Stations 2210E to 2290E are located in Edisto Beach State Park. Monitoring Station 2210E is in the campground section, while Monitoring Stations 2230, 2250E, and 2290E are on the narrow overwash spit to the northeast of the campground. The profile at Monitoring Station 2210E resembles the other northern-half profiles, with a steeply sloping sand dune and beach face. The last three monitoring stations are characterized by a low-lying sand spit, which has a salt marsh located directly behind it.

TABLE 6 EDISTO BEACH PROFILES

Edisto Beach Profile Stations (North - South)

Station	Distance to Next (ft)	Northing	Easting
Upcoast 1			
2270	1,160	248,569	2,221,530
2250	1,380	247,834	2,220,635
Park 3300	300	246,957	2,219,572
Park 3000	300	246,767	2,219,341
Park 2700	20	246,576	2,219,109
Upcoast 2			
2230	280	246,560	2,219,091
Park 2400	300	246,365	2,218,896
Park 2100	110	246,152	2,218,685
2210	190	246,070	2,218,604
Park 1800	300	245,935	2,218,477
Park 1500	300	245,716	2,218,272
Park 1200	300	245,498	2,218,066
Park 900	300	245,279	2,217,861
Park 600	300	245,065	2,217,651
Park 300	300	244,852	2,217,440
Park 0	110	244,638	2,217,229
Reach 1			
1+75	225	244,574	2,217,181
1+300	225	244,443	2,217,003
1+525	143	244,295	2,216,826
2+75	225	244,206	2,216,715
2+300	225	244,068	2,216,539
2+525	145	243,928	2,216,361
3+75	225	243,838	2,216,248
3+300	225	243,699	2,216,072
3+525	155	243,559	2,215,894
4+75	225	243,461	2,215,768
4+300	225	243,314	2,215,582
4+525	153	243,182	2,215,415
5+75	225	243,089	2,215,297
5+300	225	242,950	2,215,120
5+525	145	242,811	2,214,944
6+75	225	242,730	2,214,841
6+300	225	242,591	2,214,663
6+525	155	242,452	2,214,487
7+75	225	242,359	2,214,369
7+300	225	242,220	2,214,191
7+525	150	242,064	2,214,008
8+75	225	241,963	2,213,897
8+300	225	241,811	2,213,731
8+525	158	241,660	2,213,565
9+75	225	241,558	2,213,452
9+300	225	241,406	2,213,285
9+525	150	241,258	2,213,122
10+75	225	241,159	2,213,012
10+300	225	241,007	2,212,845
10+525	155	240,855	2,212,678
Reach 2			
11+75	225	240,756	2,212,568
11+300	225	240,614	2,212,413
11+525	170	240,476	2,212,261
12+75	225	240,363	2,212,133
12+300	225	240,198	2,211,945
12+525	185	240,053	2,211,780

Station	Distance to Next (ft)	Northing	Easting
Reach 2 (cont)			
13+75	225	239,935	2,211,645
13+300	225	239,803	2,211,495
13+525	170	239,665	2,211,337
14+100	250	239,550	2,211,206
14+350	250	239,385	2,211,018
14+600	160	239,220	2,210,830
15+65	180	239,115	2,210,711
15+245	205	238,995	2,210,574
15+450	145	238,863	2,210,423
Reach 3			
16+75	225	238,767	2,210,313
16+300	225	238,642	2,210,159
16+525	175	238,508	2,209,980
17+75	225	238,404	2,209,839
17+300	225	238,257	2,209,642
17+525	200	238,111	2,209,445
18+75	225	237,991	2,209,284
18+300	225	237,844	2,209,087
18+525	200	237,697	2,208,888
19+100	425	237,570	2,208,734
19+525	430	237,284	2,208,416
19+955	200	236,998	2,208,098
20+100	250	236,864	2,207,949
20+350	250	236,696	2,207,763
20+600	185	236,527	2,207,574
21+75	190	236,409	2,207,443
21+265	165	236,284	2,207,305
21+430	165	236,174	2,207,176
22+75	193	236,069	2,207,045
22+268	192	235,965	2,206,881
22+460	190	235,862	2,206,719
23+100	120	235,761	2,206,560
23+220	205	235,699	2,206,471
Reach 4			
24+100	90	235,592	2,206,293
24+190	175	235,544	2,206,218
25+100	100	235,465	2,206,054
25+200	215	235,432	2,205,962
26+115	120	235,352	2,205,747
26+235	200	235,311	2,205,636
27+145	145	235,249	2,205,376
27+290	275	235,227	2,205,233
Downcoast 1			
28+130	147	235,184	2,204,955
28+277	725	235,163	2,204,811
2135	639	235,103	2,204,088
2130B	642	235,477	2,203,569
2130A	729	236,041	2,203,261
Downcoast 2			
2130	596	236,729	2,203,018
2120	1,298	237,299	2,202,841
2115	1,000	238,527	2,202,418
2113	1,145	239,476	2,202,101
2110	0	240,553	2,201,713

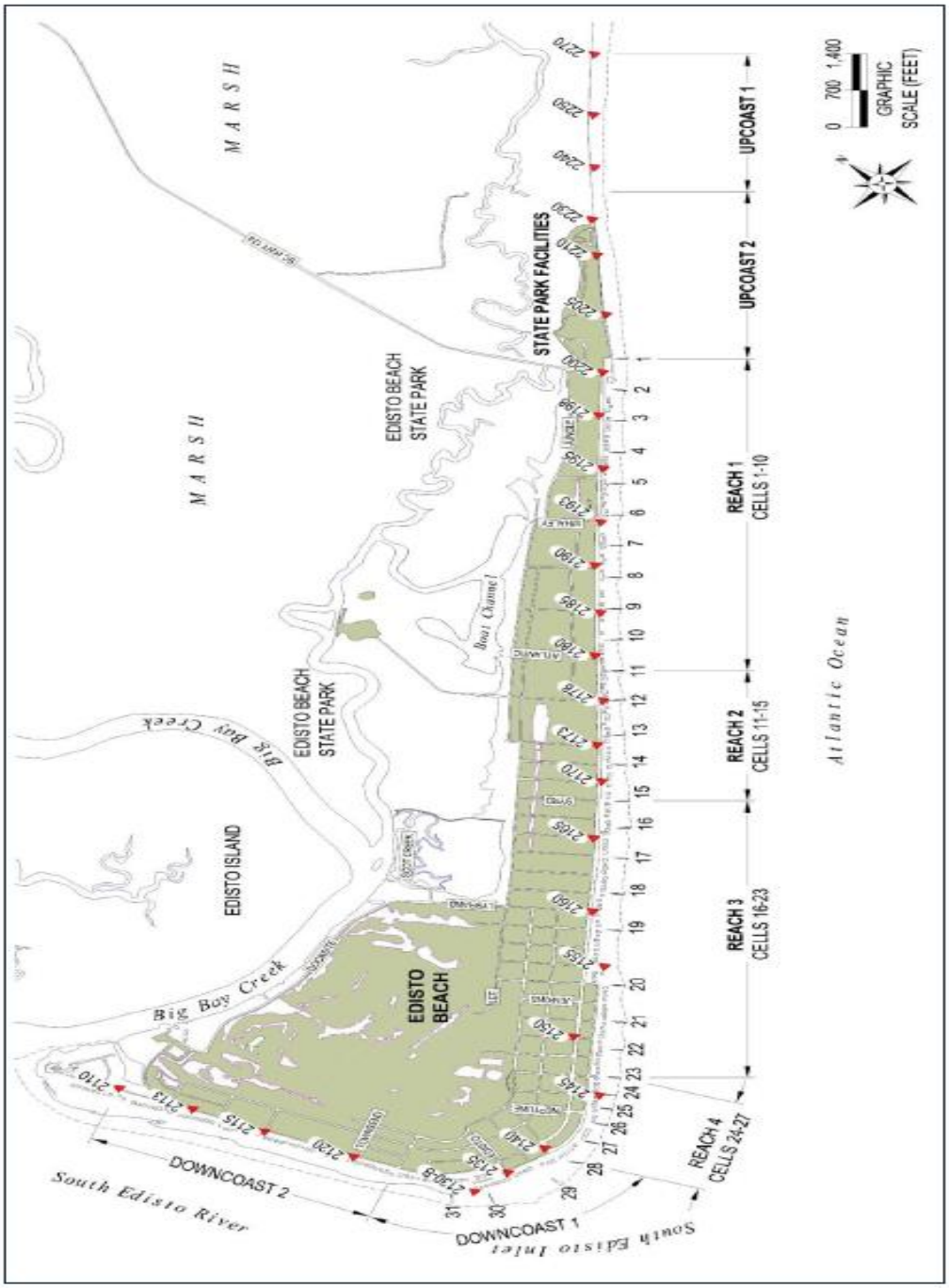


FIGURE 10 MONITORING STATIONS AND NUMBERS MAP

[26] Coastal Science & Engineering, 2014. 2006 Edisto Beach Restoration Project, Colleton County, South Carolina, Survey Report No. 8 November 2014.

5.1.2 Long-Term Erosion Rates and Shoreline Change

Long-term erosion rates are calculated based on beach shoreline positions dating back to 1872 at Edisto Beach. Based on an assessment methodology that was developed by the U.S. Geological Survey, the calculated long-term erosion rates for Edisto Beach are shown in Table 7 and Figure 12. South of station 2160 (Marianne St.), the island is classified as an unstabilized inlet zone and is slightly accretional. The rest of the island, including the state park, is a standard zone with low long-term erosion rates. In some cases, groin fields on Edisto Beach have more recently counteracted a long-term erosional trend to produce a relatively stable shoreline, with an official average long-term erosion rate of 0.99 feet/year for the entire island. However, localized long-term erosion rates may be as high as -7.2 feet/year.

Long-Term Erosion Rates: Edisto Beach		
Monument	**Beach Zone Classification**	**Long-Term Erosion Rate (ft./yr.)**
2105	Unstabilized Inlet	11.3
2110	Unstabilized Inlet	6.7
2113	Unstabilized Inlet	3.7
2115A	Unstabilized Inlet	3.3
2120A	Unstabilized Inlet	4.4
2130	Unstabilized Inlet	6.2
2135	Unstabilized Inlet	9.0
2140	Unstabilized Inlet	9.6
2145A	Unstabilized Inlet	8.4
2150	Unstabilized Inlet	7.0
2155A	Unstabilized Inlet	2.5
2160A	Unstabilized Inlet / Standard	-0.3
2165	Standard	-0.6
2170A	Standard	-1.1
2173	Standard	-1.6
2178A	Standard	-1.8
2180	Standard	-2.1
2185A	Standard	-2.2
2190	Standard	-2.1
2193A	Standard	-2.2
2195A	Standard	-2.1
2198	Standard	-2.2
2200A	Standard	-2.6
2210	Standard	-5.8
2230	Standard	-6.0
2250	Standard	-5.6
2290	Unstabilized Inlet	-7.2

TABLE 7 LONG TERM EROSION RATES

There are two principal sources of historical shoreline change information: 1) historical maps and charts, and 2) historical and recent aerial photographs. Both are available for Edisto Beach, and both have been used to assess shoreline change.

Digital high-water shoreline position maps covering Edisto Beach have been compiled for the years 1852, 1920, 1933, 1952, 1964, 1970, 1983, 1985, and 2006 (Anders et al., 1990; Harris et al., 2009). DHEC OCRM reviewed aerial photographs to locate the vegetation line in the unstabilized inlet zone south of station 2160 for the years 1959, 1967, 1973, and 1988 for the original establishment of its baseline and 40-year setback line along Edisto Beach in 1990. The baseline and setback line were revised in October 1999 using additional data including aerial photographs from 1993 and 1998. The current baseline and setback line positions for Edisto Beach were adopted on October 9, 2009 using aerial photographs from 1973, 1988, 1993, 1998, and 2006.

Figure 11 depicts the historical shoreline changes for representative time periods and Figure 12 depicts the long-term erosion rates for Edisto Beach.

The shoreline position at The Point (Billow, White Cap, and Edisto Streets) is somewhat dynamic, but this area has been accretional in recent years (Figure 13). Since 1852, this section of shoreline has grown seaward by about 1,200 feet.

In contrast, north of station 2160 in the standard beach zone, groins and renourishment have helped stabilize the shoreline position to some degree, but it is still erosional with a long-term rate of about -2 feet/year. The shoreline position in this area is now approximately 320 feet further landward than it was in 1852, and many houses are located very near the active beach (Figure 14).

The erosion rate near Edisto Beach State Park is even higher, at -6 feet/year. The shoreline has migrated landward a distance of about 750 feet since 1852 and about 100 feet since 1964 (Figure 15).

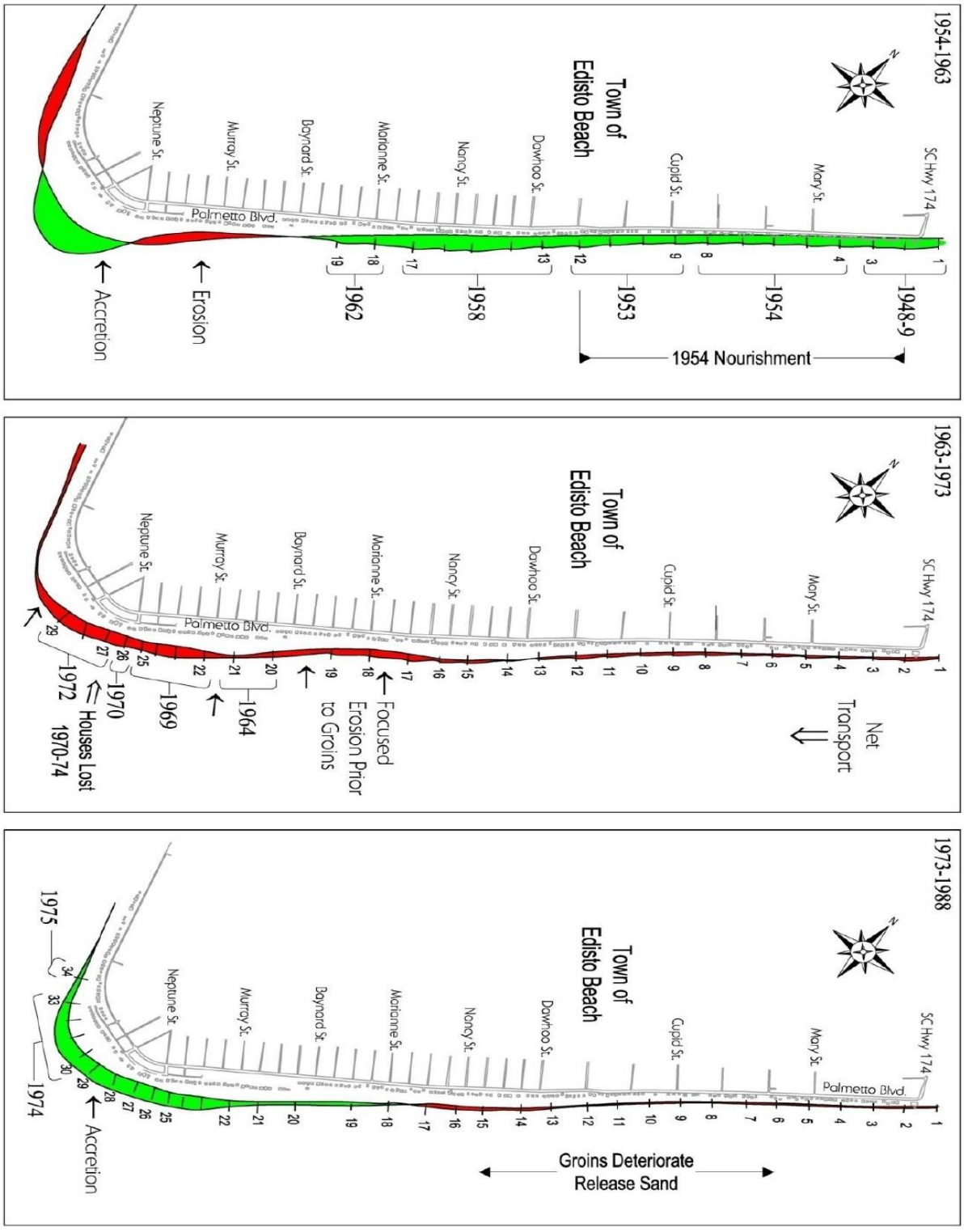


FIGURE 11 HISTORICAL SHORELINE TRENDS

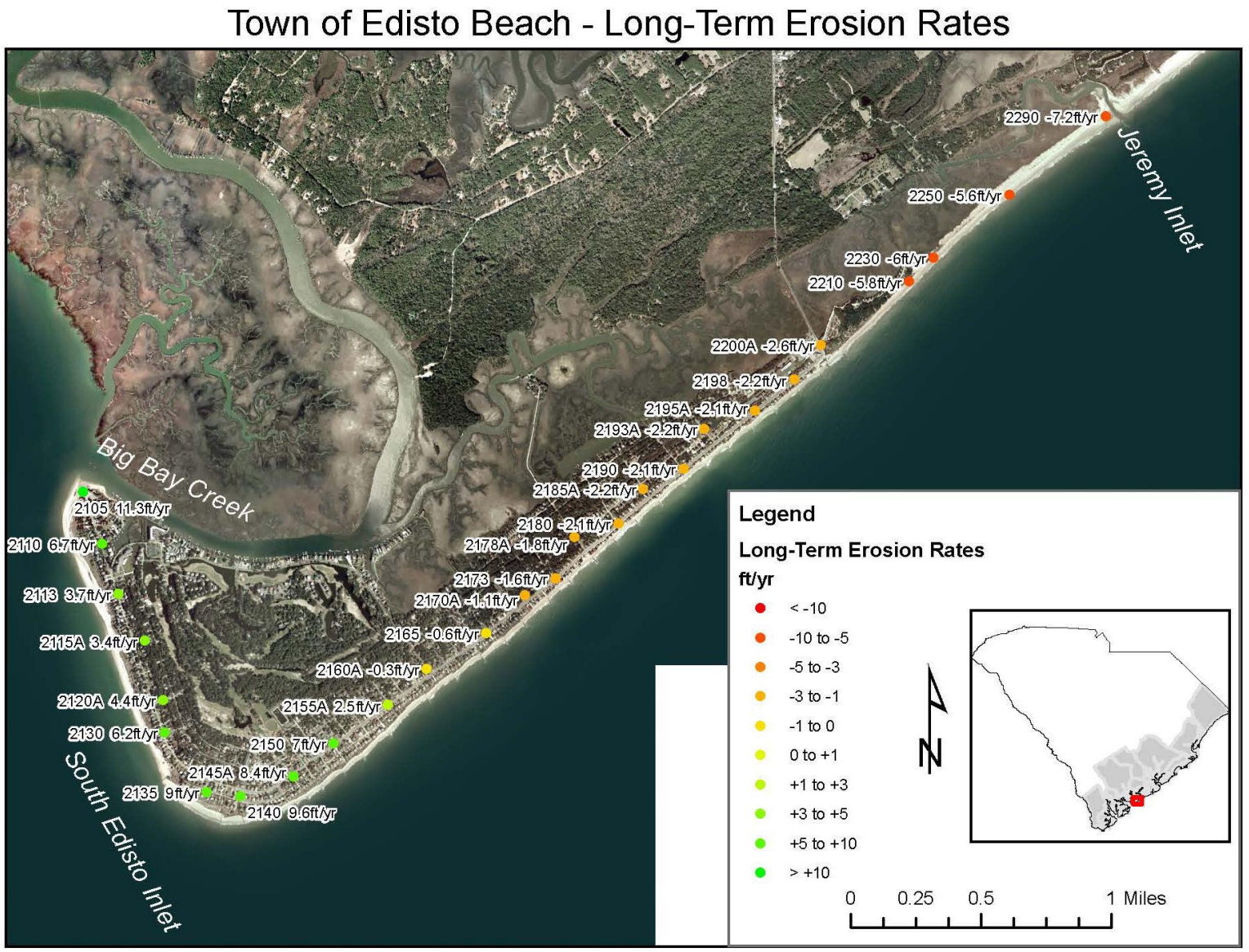


FIGURE 12 LONG TERM EROSION RATES ON EDISTO BEACH

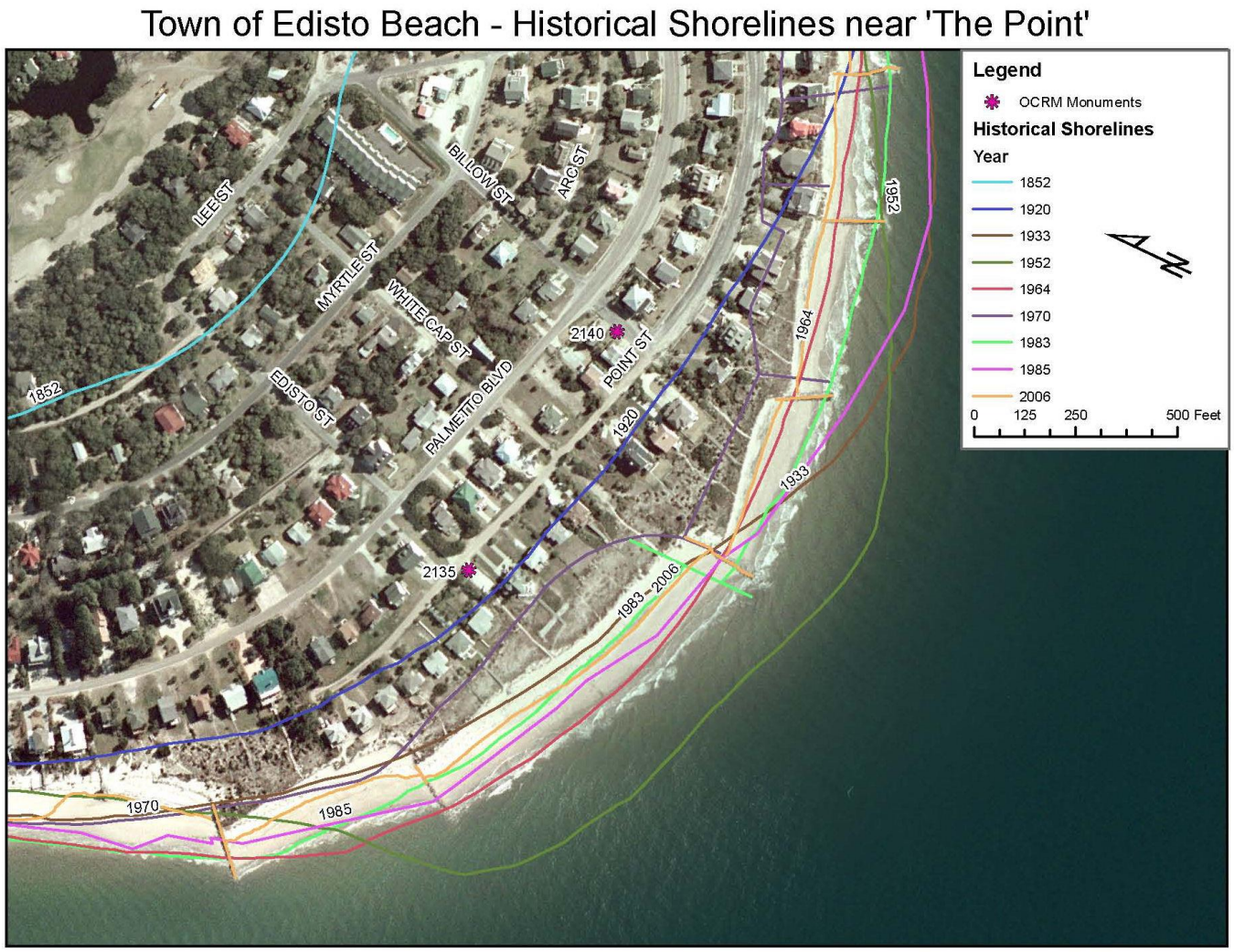


FIGURE 13 HISTORICAL SHORELINES NEAR "THE POINT"

FIGURE 14 HISTORICAL SHORELINES IN A STANDARD BEACH ZONE

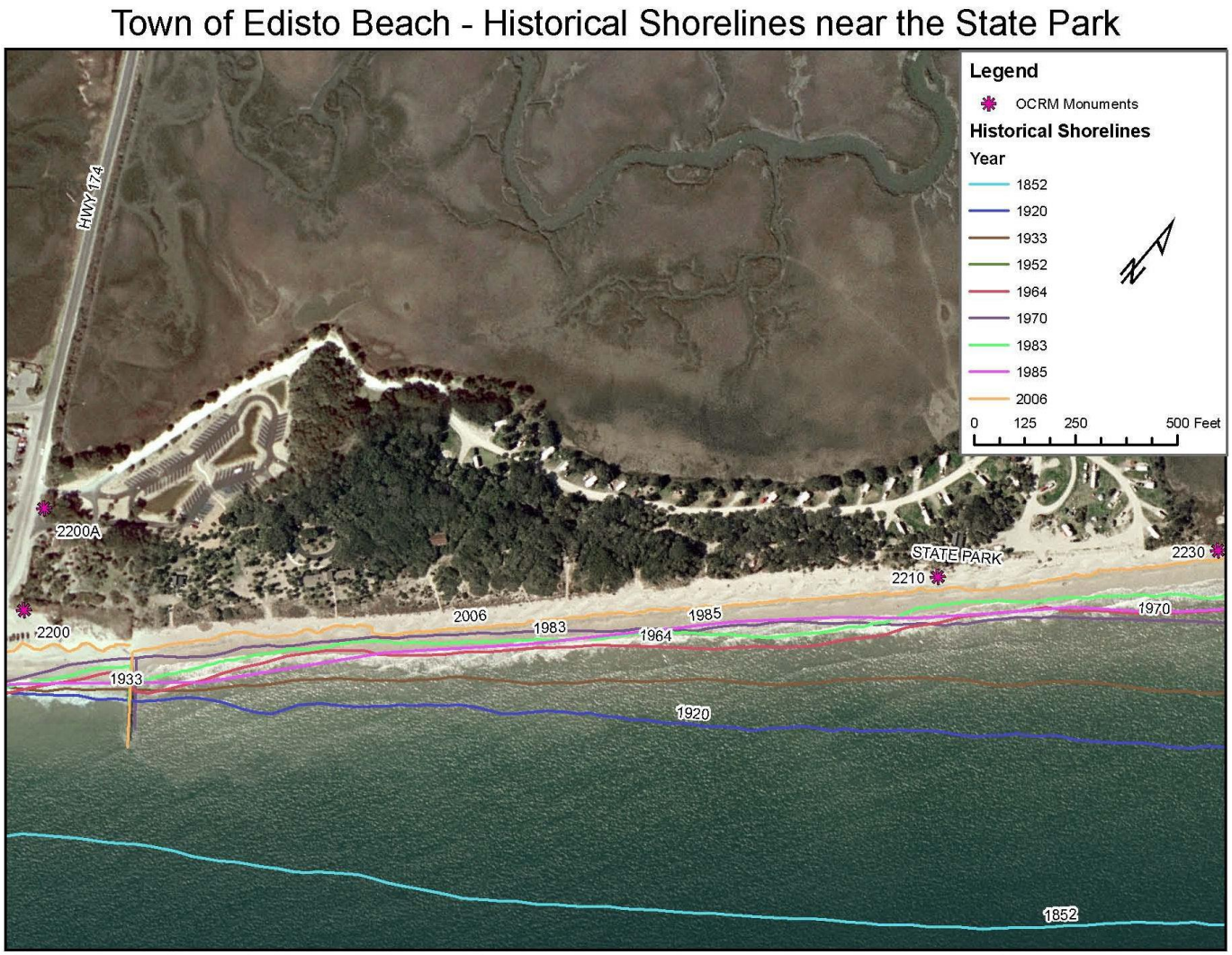


FIGURE 15 HISTORICAL SHORELINES NEAR THE STATE PARK

5.2 Beach Alteration Inventory

Groins

Erosion along Edisto Beach led to construction of the first groins in 1948 near the pavilion. During the next decade, 17 groins were built from north to south in an attempt to halt the loss of sand, or at least slow its southerly movement. Erosion continued down-coast of the structures as each group of groins was built, sometimes to the point where houses were washed out (CSE, 2001). This prompted construction of more groins through 1975 for a total of 34 groins on Edisto Beach. Other than Folly Beach with 47 existing groins, Edisto Beach has the second largest groin field with 34 groins.

Groin 1 is located approximately 390 feet north of the ruins of the Pavilion fishing pier with all other groins located south of the pier. Groin 34 is situated along the South Edisto River Inlet Shoreline, about 3,000 feet from Big Bay Creek.

The sand-trapping capacity of individual groins impacts erosion rates along the beachfront. Gaps in deteriorating groins allow sand piping and leaking, which results in erosion within the groin cell and accretion downcoast. Conversely, when updrift groins are repaired and their trapping capacity is restored, downcoast areas may erode. Sand volumes around The Point area (at the southern tip of Edisto Beach) are particularly influenced by the condition of groins along the oceanfront (Kana et al, 2004). Groins are numbered from updrift to downdrift (Figure 16).

FIGURE 16 GROIN FIELD (JANUARY 2013)

Description of the Groin System

According to The Shorefront Management Plan, prepared by Cubit Engineering, Ltd, 1987, the groin field is located on the southern shoreline of Edisto Island from a point where SC 174 (Palmetto Blvd.) intersects the coast extending approximately three miles southwest past Bay point and approximately one mile up the Edisto River. Groin numbers and locations are listed in Table 8 below.

TABLE 8 GROINS CONSTRUCTED ALONG EDISTO BEACH

Groin	Year Built	Location	Groin	Year Built	Location
1	1948	State Park	18	1962	1602 Palmetto Blvd
2	1948	108 Palmetto Blvd	19	1962	1802 Palmetto Blvd
3	1949	122 Palmetto Blvd	20	1964	2101 Point St
4	1949	134 Palmetto Blvd	21	1964	2301 Point St
5	1954	204 Palmetto Blvd	22	1969	2403 Point St
6	1954	218 Palmetto Blvd	23	1969	2601 Point St
7	1954	312 Palmetto Blvd	24	1969	2604 Point St
8	1954	406 Palmetto Blvd	25	1969	2704 Point St
9	1953	420 Palmetto Blvd	26	1970	2802 Point St
10	1953	514 Palmetto Blvd	27	1972	2806 Point St
11	1953	608 Palmetto Blvd	28	1972	2811 Point St
12	1953	702 Palmetto Blvd	29	1972	2903 Point St
13	1958	718 Palmetto Blvd	30	1974	3105 Point St
14	1958	902 Palmetto Blvd	31	1974	3116 Palmetto Blvd
15	1958	1102 Palmetto Blvd	32	1974	3328 Palmetto Blvd
16	1958	1206 Palmetto Blvd	33	1974	3414 Palmetto Blvd
17	1958	1402 Palmetto Blvd	34	1975	

Groin History

Due to severe beach erosion, the South Carolina Highway Department began constructing the timber groins in the vicinity of the fishing pier in 1948 and proceeded southward through 1975. During this period, some of the initial timber only groins had rubble structures appended. Groins south of groin 23 are entirely rubble structures. As repairs were made, timber only groins have been replaced with rubble. Timber groins were not maintained and were allowed to rot and fall apart. Groins 25-28 have been restacked and grouted. Groin 29 is partially restacked but not grouted. As repairs were made, the timber portions that have been destroyed have been partly covered with Gunite and partly replaced with grouted rubble.

In 1981 and 1987, Cubit Engineering, LTD conducted a physical examination of the groins which included measurements, photographs and visual observation of each groin. Lengths were measured from the first visible pile or stone on the landward end of the groin. The results of these studies are inserted below.

TABLE 9 SUMMARY OF GROIN PARAMETERS

SUMMARY OF GROIN PARAMETERS

			1981 SURVEY						1987 SURVEY									
NO	DATE	INSTALLED LENGTH	TYPE	GOOD	TIMBER POOR	TIMBER LENGTH	ROCK LENGTH	TOTAL LENGTH	TYPE	GOOD	TIMBER POOR	TIMBER LENGTH	ROCK GOOD	ROCK POOR	ROCK LENGTH	TOTAL LENGTH	SLUMP	NOTES
1									compound	83	22	105	60	0	60	165	2-3	
2	1948	300	compound	85	0	85	80	165	compound	50	25	75	60	0	60	135	2-2.5	1)
3	1949	271	timber	80	60	140	0	140	compound	110	5	115	60	0	60	175	1.5	
4	1949	271	timber	84	45	129	0	129	compound	90	30	120	60	0	60	180	1-1.5	
5	1954	222	compound	75	0	75	89	164	compound	95	30	125	60	0	60	185	2	2)
6	1954	240	compound	78	0	78	90	168	compound	63	22	85	60	0	60	145	2.5-3	3)
7	1954	272	compound	78	0	78	95	173	compound	88	14	102	60	0	60	162	2	
8	1954	272	compound	65	0	65	83	148	compound	88	17	105	70	0	70	175	2.5-3	
9	1953	240	compound	56	0	56	87	143	compound	71	21	92	80	0	80	172	(1-2)	
10	1953	241	compound	78	0	78	78	156	compound	80	40	120	70	0	70	190	2.5-3	
11	1953	240	compound	64	0	64	96	160	compound	81	0	81	100	0	100	181	2-2.5	
12	1953	240	compound	80	0	80	93	173	compound	90	30	120	80	0	80	200	2-3	
13	1958	241	timber	104	60	164		164	timber	110	60	170				170		4)
14	1958	241	timber	68	90	158		158	timber	77	93	170				170		
15	1958	241	timber	86	72	158		158	timber	75	95	170				170		
16	1958	241	timber	88	72	160		160	timber	70	100	170				170		
17	1958	241	timber	88	82	170		170	timber	74	86	160				160		
18	1962	261	timber	100	72	172		172	timber	60	100	160				160		
19	1962	261	timber	100	60	160		160	timber	70	80	150				150		
20	1964	225	timber	50	78	128		128	timber	65	95	160				160		
21	1964	225	timber	48	80	128		128	timber	68	92	160				160		
22	1969	264	timber	80	64	144		144	timber	90	80	170				170		
23	1969	277	timber	88	72	160		160	timber	85	75	160				160		

Notes:
1) 15 ft gap between dune and groin
2) Asphalt placed in 20 ft gap between dune and groin
3) Asphalt placed in 10 ft gap between dune and groin
4) Total length estimated, end of groin submerged

In 1996, the groins were repaired (CSE 1996 (a,b), 1997, 1999, 2001). Through 1998 to 2001, Edisto Beach conducted extensive groin repair. Elevations were raised and some groins were extended. In 2003 and 2004 additional groin repairs were made and the last inspection of the groins was performed by Coastal Science & Engineering in 2011. In 2013, CSE prepared an "Assessment of the Groin Field and Conceptual Plan for Groin Lengthening Report". The Groins were substantially modified in 2017 to incorporate the CSE plan for groin lengthening and the USACE groin modifications identified in the National Economic Development (NED) Plan.

TABLE 10 GROIN MODIFICATIONS

Groin	Year Built	Lengths*	Modifications	
1	1948	339	Repairs made in 2014	2017, lengthened 90 ft. sheet piling, rock placed on mattresses, capped and grouted
2	1948	333	2017, lengthened 85 ft. sheet piling, rock placed on mattresses, capped and grouted	
3	1949	298	2017, lengthened 90 ft. sheet piling, rock placed on mattresses, capped and grouted	
4	1949	313	1999, raised elevation from 0.2 ft. to 1.1 ft.	2017, lengthened 90 ft. sheet piling, rock placed on mattresses, capped and grouted
5	1954	366	1999, raised elevation from 0.25 ft. to 1.1 ft.	2017, lengthened 100 ft. sheet piling, rock placed on mattresses, capped and grouted
6	1954	315	1999, raised elevation from -1.0 ft. to 1.1 ft.	2017, lengthened 100 ft. sheet piling, rock placed on mattresses, capped and grouted
7	1954	304	1999, raised elevation from -1.0 ft. to 1.1 ft.	2017, lengthened 90 ft. sheet piling, rock placed on mattresses, capped and grouted
8	1954	292	1998, raised elevation from -0.5 ft. to 1.1 ft.	2017, lengthened 90 ft. sheet piling, rock placed on mattresses, capped and grouted
9	1953	295	1998, raised elevation from -0.5 ft. to 1.1 ft. and extended from 317 ft. to 342 ft.	2017, lengthened 95 ft. sheet piling, rock placed on mattresses, capped and grouted
10	1953	276	1998, raised elevation from -0.6 ft. to 1.1 ft. and extended from 311 ft. to 342 ft.	2017, lengthened 95 ft. sheet piling, rock placed on mattresses, capped and grouted
11	1953	292	1997, raised elevation from -1.0 to 1.1 ft. and extended length from 342 to 343 ft.	2017, lengthened 95 ft. sheet piling, rock placed on mattresses, capped and grouted
12	1953	259	2017, lengthened 45 ft. rock placed on mattresses and grouted	
13	1958	244	2017, lengthened 80 ft. sheet piling, rock placed on mattresses, capped and grouted	
14	1958	199	2017, lengthened 65 ft. sheet piling, rock placed on mattresses, capped and grouted	
15	1958	187	1999, lengthened groin from 381 ft. to 426 ft.	2017, lengthened 40 ft. rock placed on mattresses and grouted
16	1958	183		2017, lengthened 20 ft. rock placed on mattresses and grouted
17	1958	196		2017, lengthened 20 ft. rock placed on mattresses and grouted
18	1962	194	1999	2017, lengthened 40 ft. rock placed on mattresses and grouted
19	1962	147	1999	
20	1964	218	1999	2017, lengthened 40 ft. rock placed on mattresses and grouted
21	1964	199	1999	2017, lengthened 30 ft. rock placed on mattresses and grouted
22	1969	175	1998	2017, lengthened 30 ft. rock placed on mattresses and grouted
23	1969	151	1998	2017, lengthened 30 ft. rock placed on mattresses and grouted
24	1969	201	1998	2017, lengthened 30 ft. rock placed on mattresses and grouted

25	1969	191	1997	2017, lengthened 40 ft. rock placed on mattresses and grouted
26	1970	223	2017, lengthened 50 ft. rock placed on mattresses and grouted	
27	1972	195	2017, lengthened 50 ft. rock placed on mattresses and grouted	
28	1972	137	2017 restacked	
29	1972	221	2017 restacked	
30	1974	101		
31	1974	266		
32	1974	210		
33	1974			
34	1975			

5.2.1 Beach Renourishment

In the mid-1950s, erosion near the Pavilion had progressed so far that groins alone were not sufficient to protect Palmetto Boulevard (SR 174). The South Carolina Highway Department combined groin construction with the first nourishment of Edisto Beach in 1954 using sand, shells, and mud from the marsh behind the island. Excavations created the "Yacht Basin" and reclaimed nearly 1.2 miles of shoreline between Groins 1 and 12. Much of the material was very fine and washed away leaving coarser sand and broken shells.

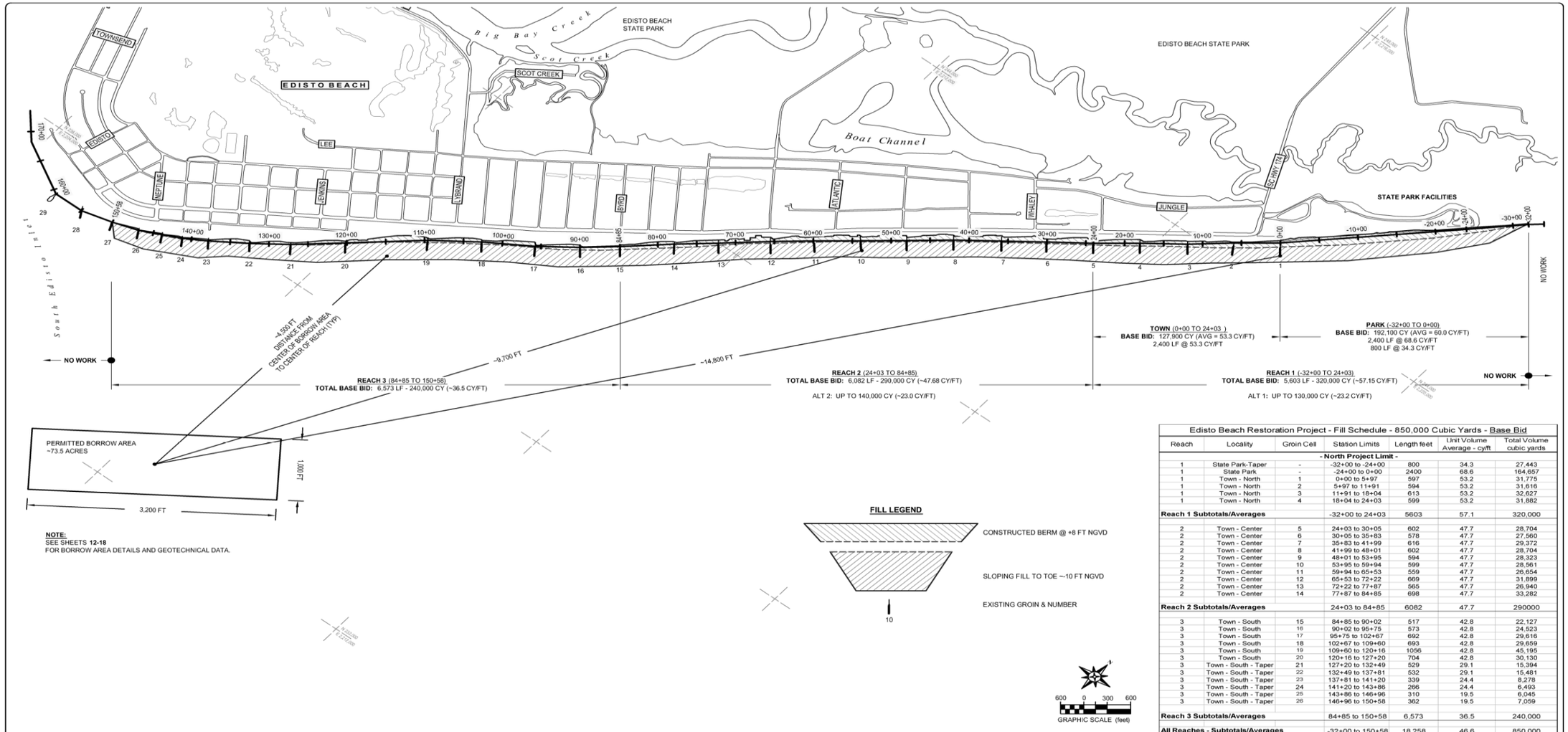
In April 1995, selected areas of Edisto Beach were renourished (a total of 155,000 cubic yards between Groins 1 to 17 and 24 to 28), and groins (1-16) were repaired (CSE 1996 (a,b), 1997, 1999, 2001). The borrow area was located ~2,500 feet off The Point at the southern tip of Edisto Beach and was characterized by coarse beach-quality sand. By the summer of 2001, roughly one-third of the renourishment volume was still present in the project area.[27] Plans called for lengthening of groins 1-10 so that at the seaward end of the groins formed a straight line. The cost of construction was approximately $1,500,000 including groin repairs. The Town received $1,000,000 from the 93/94 State Supplement budget as provided by an agreement with DHEC. The agreement required a $500,000 match.

With erosion of the 1995 nourishment sand, groins became more exposed and less effective for sand retention because groins were not impermeable and groins were not maintained.

The 2006 beach restoration project was necessitated by increased erosion rates in down-coast areas, insufficient protection of beachfront properties, and insufficient beach width to support dune formation and recreational beach access. The 2006 beach renourishment project addressed critically eroded areas along the majority of the beachfront and added to the sand supply and beach width. The project was constructed between March and May of 2006 by Great Lakes Dredge and Dock Company and was engineered by Coastal Science & Engineering. The length of the project area was 18,258 linear feet, including 3,200 linear feet in the state park area. Fill volumes were varied along the beach with the goals of achieving a standard, minimum profile volume of at least 100 cubic yards/feet for the length of the project area. The greatest volumes were added to the park and updrift areas in anticipation of sand moving south. Post-project erosion rates along the northern half of the project area were expected to be

[27] Coastal Science & Engineering. November 2001. "Edisto Beach 1995 beach nourishment project. Survey Report No 5".

rapid during the first few years as the groins were buried and nonfunctional. The Figure below indicates the project limits.



NOTE:
SEE SHEETS **12-18**
FOR BORROW AREA DETAILS AND GEOTECHNICAL DATA.

Edisto Beach Restoration Project - Fill Schedule - 850,000 Cubic Yards - Base Bid

Reach	Locality	Groin Cell	Station Limits	Length feet	Unit Volume Average - cy/ft	Total Volume cubic yards
			- North Project Limit -			
1	State Park-Taper	-	-32+00 to -24+00	800	34.3	27,443
1	State Park	-	-24+00 to 0+00	2400	68.6	164,657
1	Town - North	1	0+00 to 5+97	597	53.2	31,775
1	Town - North	2	5+97 to 11+91	594	53.2	31,616
1	Town - North	3	11+91 to 18+04	613	53.2	32,627
1	Town - North	4	18+04 to 24+03	599	53.2	31,882
Reach 1 Subtotals/Averages			-32+00 to 24+03	5603	57.1	320,000
2	Town - Center	5	24+03 to 30+05	602	47.7	28,704
2	Town - Center	6	30+05 to 35+83	578	47.7	27,560
2	Town - Center	7	35+83 to 41+99	616	47.7	29,372
2	Town - Center	8	41+99 to 48+01	602	47.7	28,704
2	Town - Center	9	48+01 to 53+95	594	47.7	28,323
2	Town - Center	10	53+95 to 59+94	599	47.7	28,561
2	Town - Center	11	59+94 to 65+53	559	47.7	26,654
2	Town - Center	12	65+53 to 72+22	669	47.7	31,899
2	Town - Center	13	72+22 to 77+87	565	47.7	26,940
2	Town - Center	14	77+87 to 84+85	698	47.7	33,282
Reach 2 Subtotals/Averages			24+03 to 84+85	6082	47.7	290000
3	Town - South	15	84+85 to 90+02	517	42.8	22,127
3	Town - South	16	90+02 to 95+75	573	42.8	24,523
3	Town - South	17	95+75 to 102+67	692	42.8	29,616
3	Town - South	18	102+67 to 109+60	693	42.8	29,659
3	Town - South	19	109+60 to 120+16	1056	42.8	45,195
3	Town - South	20	120+16 to 127+20	704	42.8	30,130
3	Town - South - Taper	21	127+20 to 132+49	529	29.1	15,394
3	Town - South - Taper	22	132+49 to 137+81	532	29.1	15,481
3	Town - South - Taper	23	137+81 to 141+20	339	24.4	8,278
3	Town - South - Taper	24	141+20 to 143+86	266	24.4	6,493
3	Town - South - Taper	25	143+86 to 146+96	310	19.5	6,045
3	Town - South - Taper	26	146+96 to 150+58	362	19.5	7,059
Reach 3 Subtotals/Averages			84+85 to 150+58	6,573	36.5	240,000
All Reaches - Subtotals/Averages			-32+00 to 150+58	18,258	46.6	850,000

NO.	REVISION	BY	DATE

ENGINEER:
COLUMBIA ● MOREHEAD CITY CSE
Coastal Science & Engineering
PO BOX 8056
COLUMBIA SOUTH CAROLINA 29202-8056
PHONE 803-799-8949
FAX 803-799-9481

OWNER:
TOWN OF EDISTO BEACH
2414 MURRAY STREET
EDISTO ISLAND, SC 29438

PROJECT:
BEACH RESTORATION PROJECT
EDISTO BEACH
COLLETON COUNTY, SC

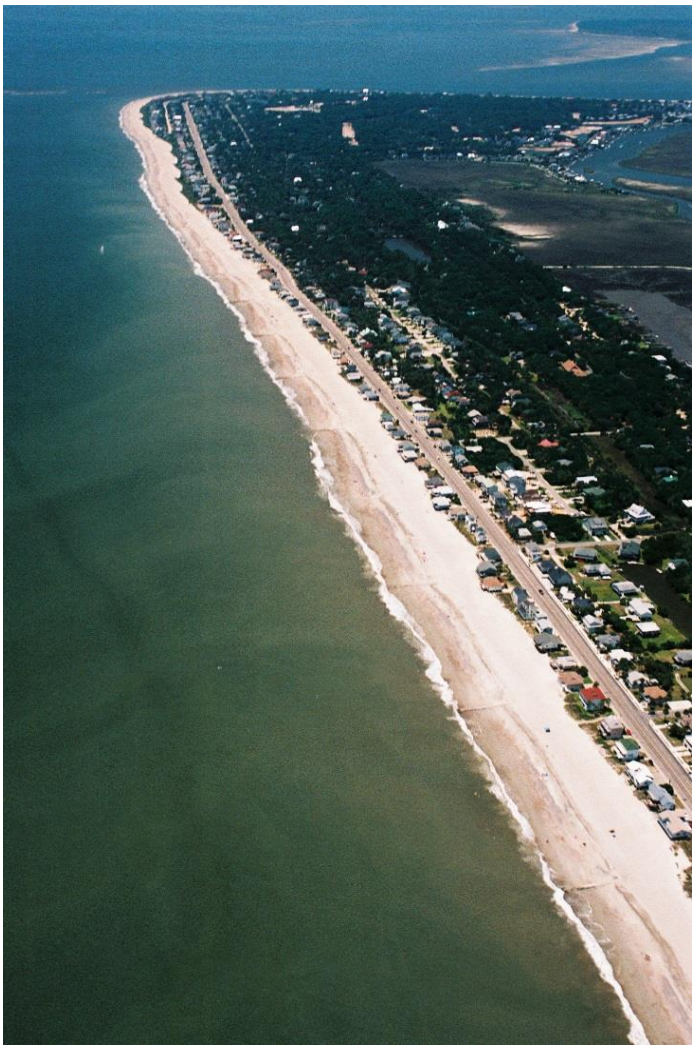
DRAWING TITLE:
PROJECT PLAN MAP

PRELIMINARY DRAWING
NOT FOR CONSTRUCTION

SCALE:	AS SHOWN
DATE:	28 DEC 2005
DRAWN BY:	JJH
APPROVED BY:	TWK/JWF
PROJECT #:	2208

SHEET # 02
02
OF: 18

The total sand volume added in the 2006 restoration was 877,647 cubic yards of which 181,728 cubic yards (20.7%) were placed along the park (north of Groin 1) and 695,919 cubic yards (79,3%) were placed between Groins 1 and 27. This exceeded the original contract volume of 850,000 cubic yards. The cost of the project was $8,063,445. Of this cost $1,960,000 covered mobilization and demobilization. The Town of Edisto Beach and the South Carolina Department of Parks Recreation sponsored the project with a



combination of local, county and state funds. Both the House of Representatives and the Senate overrode the Governor's veto to the Beach Renourishment Act providing the Town of Edisto Beach $4.75 million for the project. Of this amount, $1.75 million was used on State Park property. The remaining $3,313,445 million was funded from Colleton County ($1.5 million) and Edisto Beach local accommodations tax funds ($1,813,445).

In January 2017, Edisto Beach performed a beach nourishment and groin lengthening project as part of a scheduled nourishment on a ten-year cycle. Not only had the beach been subjected to normal erosion, but several storm events severely eroded the beachfront. In addition, the groins were lengthened to

provide a wider span of beachfront and a longer nourishment cycle as proposed under the US Army Corps of Engineers National Economic Development plan.

Construction for the 2017 project began in January. Two contractors were hired to perform the work. Marinex of Charleston was awarded the nourishment contract at an original cost of $11,698,780, subsequently amended to $12,198,772. Crowder construction of Charlotte, North Carolina was awarded the groin lengthening contract for $5,324,000 which was amended by $32,500 (Change Order No. 1) and $54,000 (Change Order No. 2).

The project was funded by Town of Edisto Beach tourism taxes ($3,000,000), Colleton County Capital Project Sales Taxes ($4,000,000), a South Carolina Parks, Recreation and Tourism Grant ($6,800,000), federal funding from the Federal Emergency Management Agency due to damages from Hurricane Joaquin ($1,086,379) and Hurricane Matthew ($1,458,315) and State Park monies ($3,270,624) who partnered with the Town to nourish the state park at the same time. Total nourishment of this project consisted of 1,176,209 cubic yards of dredged sand.

According to the permit, groins could be lengthened up to a total of 1,765 feet:

Groin Number	Permit	Actual	Groin Number	Permit	Actual
Groin 1 (South of Finns)	90 feet		Groin 16 (1206 Palmetto)	20 feet	
Groin 2 (106 Palmetto)	85 feet		Groin 17 (1402 Palmetto)	20 feet	
Groin 3 (120 Palmetto)	90 feet		Groin 18 (1602 Palmetto)	40 feet	
Groin 4 (136 Palmetto)	100 feet		Groin 19 (1802 Palmetto)	0 feet	
Groin 5 (202 Palmetto)	100 feet		Groin 20 (2101 Point)	40 feet	
Groin 6 (218 Palmetto)	90 feet		Groin 21 (2301 Point)	30 feet	
Groin 7 (310 Palmetto)	90 feet		Groin 22 (2402 Point)	30 feet	
Groin 8 (406 Palmetto)	95 feet		Groin 23 (2601 Point)	30 feet	
Groin 9 (420 Palmetto)	95 feet		Groin 24 (2701 Point)	30 feet	
Groin 10 (512 Palmetto)	95 feet		Groin 25 (2704 Point)	40 feet	
Groin 11 (608 Palmetto)	95 feet		Groin 26 (2803 Point)	50 feet	
Groin 12 (702 Palmetto)	45 feet		Groin 27 (2806 Point)	50 feet	
Groin 13 (718 Palmetto)	80 feet		Groin 28 (2810 Point)	0 feet	
Groin 14 (902 Palmetto)	65 feet		Groin 29 (2904 Point)	0 feet	
Groin 15 (1102 Palmetto)	40 feet		Groin 30	0 feet	

5.2.2 Emergency Orders and Sandbags

Several emergency orders were issued after Hurricane Matthew. The Emergency Orders were 16-EO-HM1 for the placement of sandbags, 16-EO-HM2 to allow emergency sand scraping, 16-EO-HM3 to allow minor nourishment, 16-EO-HM4 to allow debris removal from critical areas, and 16-EO-HM5 to return sand to the beach. The Town utilized 16-EO-HM5 and returned sand to the beach. The beach nourishment project that occurred immediately after the event was performed under a general permit and not an emergency order. Individual homeowners have utilized emergency orders in the past to protect their property.

5.2.3 Previous Hurricanes and Storm Events

Edisto Island has been impacted by a number of damaging storms and hurricanes. Some of the major hurricane events to impact Edisto in recent history include:

- On August 11, 1940, a powerful (unnamed) hurricane directly hit Edisto Island at high tide, damaging nearly every house on the island and completely destroying more than half of the estimated two hundred beachfront homes at the time.
- Hurricane Able struck Edisto Beach on August 31, 1952. The storm completely destroyed many beach cottages and damaged many others. Palmetto Boulevard (SC Hwy 174) also sustained heavy damage.
- Hurricane Gracie, a Category 3 storm, made landfall on the southern edge of Edisto Island on September 29, 1959. The Pavilion's fishing pier was largely destroyed, 16 homes were wrenched from their foundations, and 63 other homes were severely damaged. If Gracie had not come ashore at low tide, the amount of damage would have undoubtedly been much worse.
- Hurricane Hugo, a Category 4 storm, made landfall 40 miles to the north of Edisto Island in 1989. Only moderate property damage, largely from high winds, was incurred at Edisto as a result of the hurricane.
- Hurricane Joaquin (Category 3) combined with several weather systems in October 2015 off the Atlantic coast, to produce substantial amounts of rain and beach erosion.
- Hurricanes Hermine and Julia in the Atlantic impacted Edisto Beach in September 2016 resulting in downed trees and flooding.
- Hurricane Matthew, a Category 2 storm, hugged the South Carolina coast on October 9, 2016 causing moderate property damage, severe flooding and devastating beach erosion to Edisto Beach. Lessons learned regarding this storm were incorporated into the Town's Emergency Operations Plan.

5.3 Discussion of Erosion Control Alternatives

Beach erosion is strongly influenced by the tidal deltas of the North Edisto Inlet and St Helena Sound. The two deltas define a littoral cell encompassing Botany Bay Island, Edingsville Beach, and Edisto Beach. As shown in Figure 17, there is a general divergence of sand transport away from the center of the littoral cell with sand shifting north toward Deveaux Bank and sand moving south from Edingsville Beach. (Coastal Science & Engineering, December 2014).

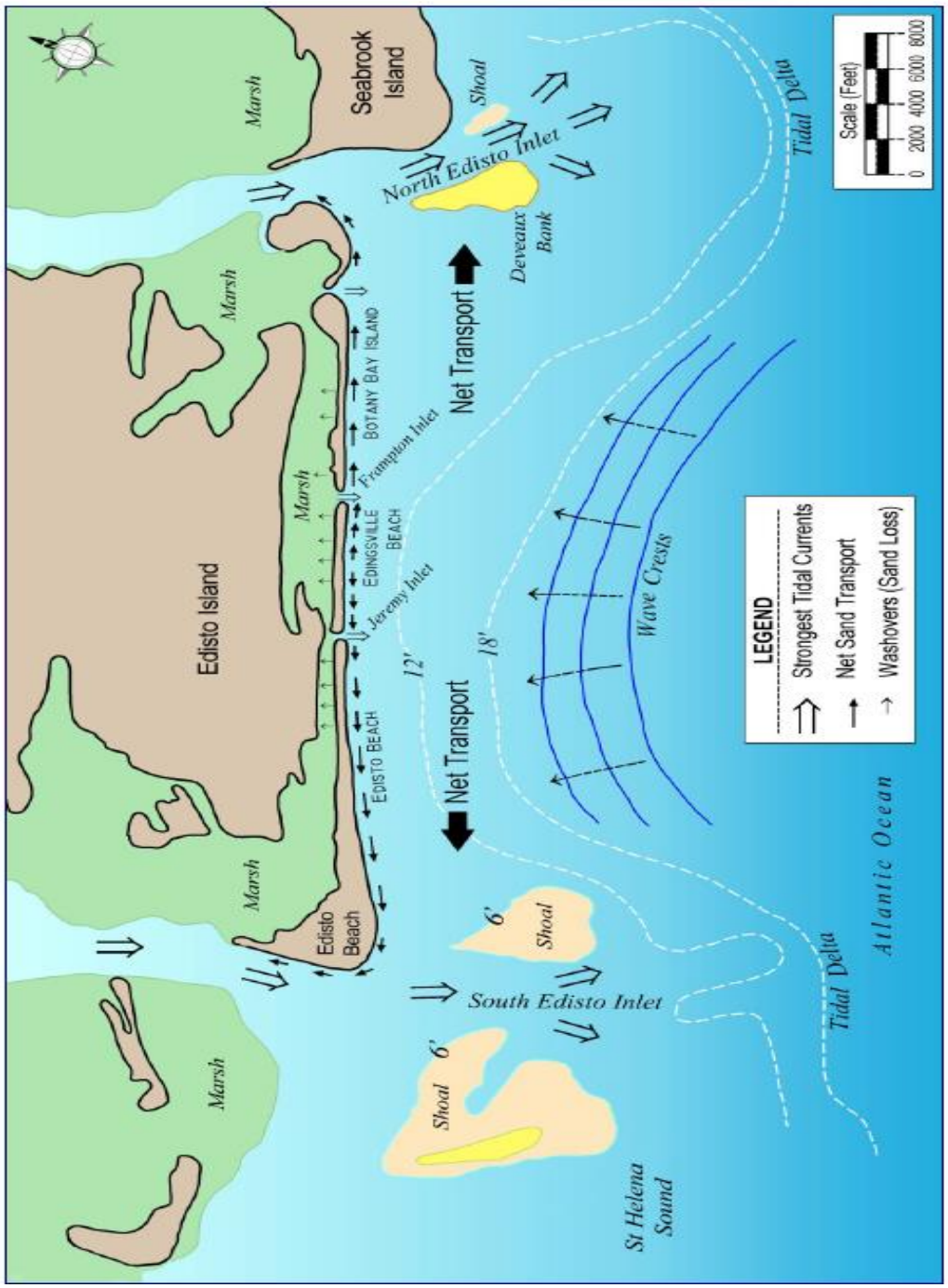


FIGURE 17 SAND TRANSPORT MAP

Sand supply along Edingsville Beach has been depleted, resulting in insufficient down-coast movement of sand to Edisto Beach, which is evident by the scarping occurring along the groins.

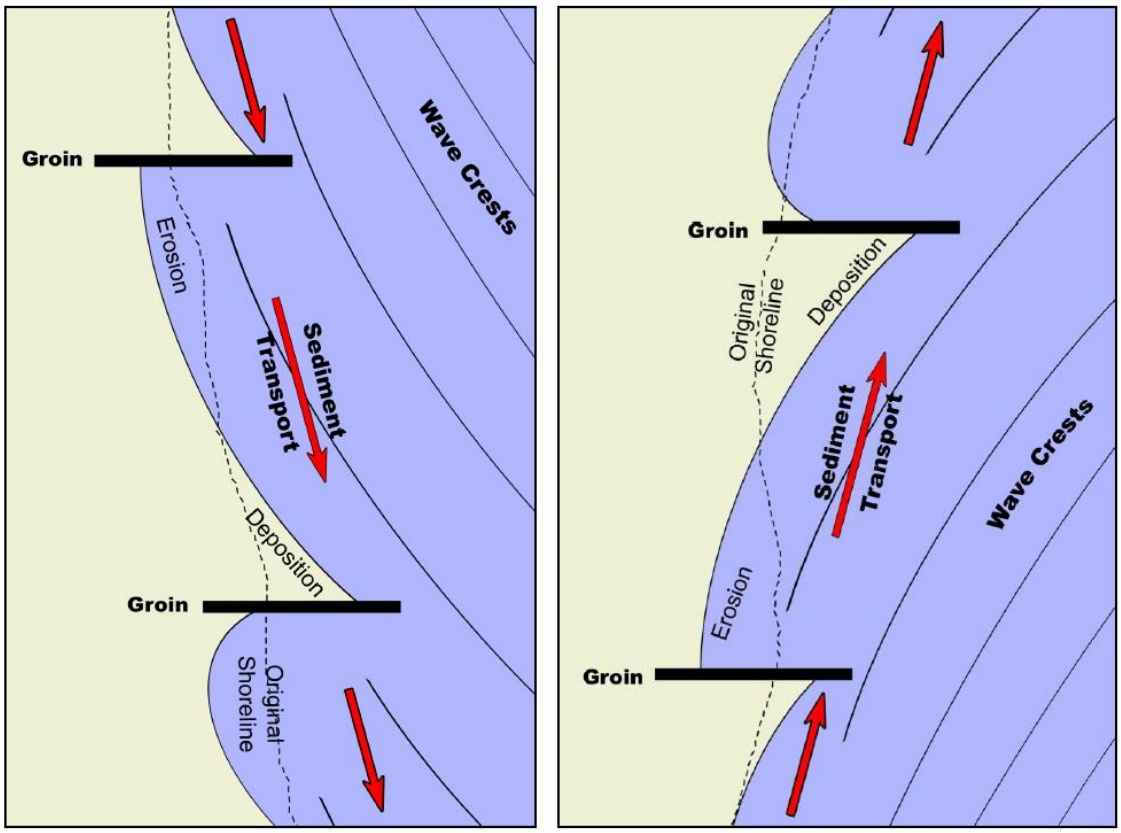


FIGURE 18 HOW GROINS WORK

Sediments being supplied to Edisto Beach tend to have a high proportion of mud and shells derived from eroding marsh deposits. Net sediment transport at Edisto Beach is to the South; however, waves from the south produce northerly sediment transport causing fillet development at the northern ends of the groin cells (Figure 18). This has caused steep and often scarped beach along the southern ends of the groin cells.

Historically, Edisto Beach has reacted to storm damage and erosion by implementing nourishment projects. The Town actively combats erosion by installing sand fence in conjunction with plantings of sea oats and bitter panicum northpa in an effort to rebuild primary dune systems. During isolated erosion events, homeowners have permitted and funded projects (revetments, seawalls, etc.) to individually protect their properties. Edisto Beach has committed a portion of the local accommodations funds to future nourishment projects and has actively lobbied Colleton County, the State of South Carolina and federal government to budget funds for future needs.

Alternatively, as portions of Edisto Beach accrete, the Town could opt to sand scrape accreted areas and move the sand upcoast to eroded areas and/or the State Park to continue “feeding” sand to Edisto Beach. In the absence of funding, Town Council ratified a statement in December 2010 regarding using sand scraping. As fuel prices increase, this option becomes more cost effective.

On December 9, 2010, Town Council ratified the following statement regarding future erosion:

"The Town's position is the Atlantic Ocean and sandy beach are the Town's industrial park and no loss is acceptable; however, the Town is not financially capable of restoring the beach to its current condition, if storm damage occurs. At any point where homes are threatened by erosion, the Town will aggressively seek ways to prevent further damage and if possible restore the beach to pre-storm conditions. At minimum, the Town will work toward preventing any loss of homes or property that would result in a loss of revenues for the Town, county or state.

In the event the Army Corps of Engineers and the Town of Edisto Beach are not successful in obtaining federal funding to minimize and protect Edisto Beach against storm damage, the Town will take the following measures.

Taking into consideration past nourishment costs as a baseline and the average life of a nourishment project (10 years), Town Council has obligated a portion of the annual local accommodations funds for future nourishment needs over the next 10 years. Although past nourishment projects have had state and county funding, future funding is not guaranteed. The Town, will take the necessary steps to acquire funding both at the county and state levels. As Edisto Beach is the only coastal community in Colleton County, the Town has discussed a future funding obligation with Colleton County, and has received a verbal commitment. As elected positions change, there is no guarantee of this commitment. Considering the impact on tourism and the direct impact on the Edisto Beach State Park, the Town will seek funding from the State of South Carolina.

As a last resort, the Town will consider sand scraping from the sound side of the beach with relocation of sand to areas in critical need. The Town's position is to maintain the groin field in good working condition and nourish localized areas, when feasible. Sand fencing in combination with re-vegetation will be used to prevent future erosion by providing limited sand stabilization. "

Edisto Beach and the United States Army Corps of Engineers, Charleston District jointly conducted a feasibility study to seek future federal funding and are now in the Preliminary Engineering Design phase. As part of this study, the Town looked at other potential means to control erosion such as groins (lengthening/shortening), artificial reefs, relocation/raising structures or take no action.

The Town made no commitment to relocate structures in eroded areas.

5.3.1 Beach Renourishment

The Town recently completed a 2017 beach nourishment and groin lengthening project. Barring any unforeseen weather events that impact the coast, another beach nourishment will not be anticipated until 2032.

The Final Integrated Feasibility Report and Environmental Assessment Coastal Storm Damage Reduction General Investigation Study completed in February 2014 identified an offshore borrow area. The area is located offshore the South Edisto River, a tide dominated drainage channel and passage between barrier islands in the center of a large, curved embayment called the Georgia Bight that stretches from Myrtle Beach, SC in the north to St Mary's River Florida in the South. The area is an approximately 1 square mile portion of the ebb tide delta located about 2 miles offshore of the west side of the island. It contains

approximately 7.2 million cubic yards of beach quality material. The average sediment compositions of the borrow area, as compared to the composition of the native beach was determined based on beach samples collected at 34 stations along Edisto Beach. Each station included four grab samples one each from the tow of the dune, berm, beach face and low tide swash zone (Table 10). HDR Engineering, Inc. of the Carolinas performed the geotechnical investigations and analyses to locate an area to meet the 50 year needs of the beach.

TABLE 11 AVERAGE SEDIMENT COMPOSITION OF NATIVE BEACH MATERIAL AND BORROW AREA

	MEAN (phi)	STD DEV (phi)	% PASSING #5	%PASSING #10	% PASSING #200*	% PASSING #230	% VISUAL SHELL
Edisto Native Beach	1.31	1.33	97.8	93.5	0.1	0.0	26.9
Borrow Area	1.73	1.31	94.7	90.0	0.4	0.2	18.8

*The % passing the #200 sieve is considered the % silt and clay.

Models indicate lengthening of the groins will extend the nourishment cycle from 8-10 years to 14-16 years. The Town continues to work with the US Army Corps of Engineers on the Preliminary Engineering Design (PED) which will take into account the work already completed in 2017 as proposed in the NED plan.

5.3.2 Other Measures

Edisto Beach utilizes sand fencing and vegetation to help stabilize and build dunes. Individual homeowners have permitted other erosion control alternatives in the past.

6. Needs, Goals and Implementation Strategies

6.1 Retreat Strategy

Edisto Beach understands there is a State policy of retreat but does not fully understand the intent or definition. Recently, the SC Shoreline Change Advisory Committee's report, *Adapting to Shoreline Change*, acknowledged there is a widespread lack of understanding on the meaning of the state's policy of retreat. In an effort to clarify, the report states that "state and local governments should enact policies to ensure that sufficient space is provided for the natural migration of the beach/dune system and so that the related risks to private and public resources are minimized."[28]

The Town has developed and adopted development regulations which complement the State's retreat policy, specifically the implementation of the beach management overlay zoning district. The primary purpose of the beach management overlay district is to enforce the retreat strategy and storm hazard mitigation plan adopted by the town so as to protect life and property. A secondary purpose of the beach management overlay district is to provide a means of educating all persons owning property along the beach about the hazards connected with erosion, storms and flooding in areas close to the beach[29].

This beach management overlay zoning district is to be compatible with the intent of the South Carolina Beach Management Act, S.C. Code 1976, § 48-39-10 et seq. with full compliance with this act being required whenever applicable.

[28] SC Shoreline Change Advisory Committee, Report on Adapting to Shoreline Change (2009), pp 20.
[29] Town of Edisto Beach Code of Ordinances § 86-145(a)(b)

New construction and the reconstruction of roofed structures within this overlay district shall have a minimum rear setback measured from the roof line which equals the greatest distance resulting from application of each of the following three methodologies:

a. Ten feet from the South Carolina Office of Coastal Resource Management baseline;

b. The average of the distance between the seaward most building roof line of the closest three existing habitable structures to the lot containing the new or reconstructed structure and the South Carolina Office of Coastal Resource Management baseline; and

c. The average of the distance of the seaward most building roof line of the closest three existing habitable structures to the lot containing the new or reconstructed structure and the edge of the adjacent highway right-of-way.

Should application of the rear setback stated above not provide sufficient area to provide for construction or reconstruction, the building codes administrator is authorized to allow the 20-foot front setback to be reduced to not less than ten feet.

No person or corporation shall initiate any development construction or reconstruction, in the area regulated by the beach management overlay district, or cause the same to be done without first obtaining a permit.

Any person or corporation desiring to extend any structure seaward of the setback line must be issued authorization from DHEC OCRM. Any person or corporation desiring to extend any structure seaward of baseline must be issued a special permit from the DHEC OCRM.

No permit shall be issued for construction on any land or accreted land seaward of the most seaward lots currently existing within the town; except that beach walkovers may be permitted so long as the entire length of the walkover meets the requirements of DHEC OCRM, and no such walkover shall be allowed whose width is greater than six feet.

New construction and the reconstruction of decks and steps within this overlay district shall have a minimum rear setback which equals the greatest distance resulting from application of each of the following three methodologies:

a. Ten feet from the South Carolina Office of Coastal Resource Management baseline;

b. The average of the distance between most seaward portion of the steps and/or decks of the closest three existing habitable structures to the lot containing the new or reconstructed structure and the South Carolina Office of Coastal Resource Management baseline; and

c. The average of the distance of the seaward most portion of the steps and/or decks of the closest three existing habitable structures to the lot containing the new or reconstructed structure and the edge of the adjacent highway right of way.

Should application of the rear setback stated above not provide sufficient area to provide for construction or reconstruction, the building codes administrator is authorized to allow the 20-foot front setback to be reduced to not less than ten feet.

Furthermore, The Town encourages property owners to site oceanfront buildings and structures as far landward as possible.

The Town allows non-conforming structures that are destroyed or damaged more than specified allowable limits to be rebuilt only in accordance with applicable provisions of the Town. This may result in reconstruction in a more landward location, either due to DHEC OCRM regulations or Town regulations.

The relocation of buildings, removal of erosion control structures, and relocation of utilities are currently not viable options for the Town. Relocation of buildings to a nearby lot is not possible because most of the available land on Edisto is developed. Relocation anywhere else is prohibitively expensive. Furthermore, there are relatively few financial assistance programs or incentives to relocate structures from beachfront lots.

An eight-inch water main is located on the beach side of Palmetto Boulevard in the 100, 200 and 300 blocks and at this time, there are no plans to relocate the line. To the Town's knowledge, there are no sewer lines, cable, etc. located seaward of the beachfront structures. There are septic systems on the front beach that have been subject to inundation and wash over during storm events. The Town has identified a front beach sewer system as a long-term goal. After Hurricane Matthew, the Town met with the SC Rural Infrastructure Authority about funding of front beach sewer. Although this may be a funding source in the future, the emergency situation caused by the storm was time sensitive. The main obstacle of septic abandonment is funding.

6.2 Strategy for preserving and enhancing public beach access

The Town continues to commit to preserving and enhancing public beach access points. It is the Town's opinion that Edisto Beach provides "full and complete access" according to the criteria established by the Department of Health and Environmental Control.

Although Edisto Beach was not successful in obtaining grant funding from the SC Department of Parks, Recreation and Tourism in 2009, signs were updated and installed, pet waste bag stations were installed and Mitchell Street was opened for off-street parking. In 2010, the Edisto Beach Public Works Department opened Neptune, Baynard and Jenkins Street beach accesses for off-street parking. In 2016, the Town obtained a Coastal Access Improvement Grant to enhance up to seven walkovers. Funding limitations allowed for 3 walkovers to be rebuilt. Additional walkover repairs are being added to the Public Works Capital Improvement Plan to keep these structures maintained and in good condition. Since most of the public beach accesses were impacted by Hurricane Matthew (2016), the Image and Design of Edisto (TIDE) Committee will be reviewing additional parking and access features.

Off street parking may be expanded or enhanced. There are no plans to establish new sites on the ocean side of Edisto Beach, but plans are being reviewed to add marsh side access for the public.

7. Appendix

7.1 Beach Management Overlays

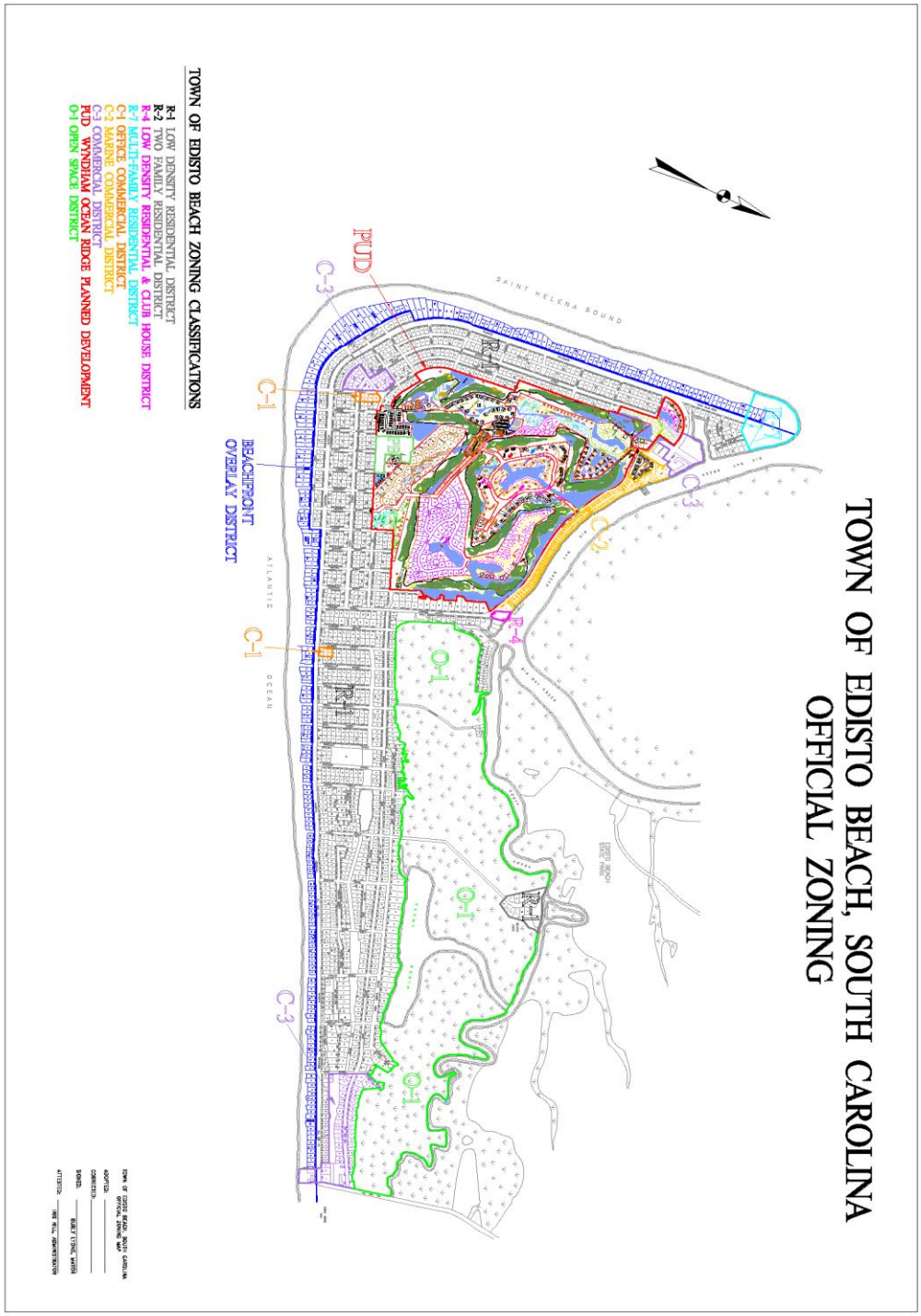


FIGURE 19 BEACH MANAGEMENT OVERLAYS

7.2 Structures Inventory Table

Tax Map Sequence Number (TMS #)	Street Address	Distance Seaward of DHEC OCRM Baseline (ft)	Distance Seaward of DHEC OCRM Setback Line (ft)	Structure Inventory	Erosion Control Structure
	2806 Point St	13	33	H	
	2805 Point St	0	11	H	
	2804 Point St	0	16	H	
	2803 Point St	0	11	H	
	2802 Point St	0	10	H	
	2801 Point St	0	7	H	
	2104 Point St	0	10	H	
357-06-00-012	1002 Palmetto Blvd	0	22	H	
357-06-00-016	908 Palmetto Blvd	0	26	H	
357-06-00-017	906 Palmetto Blvd	0	32	H	
357-06-00-019	902 Palmetto Blvd	0	40	H	
357-06-00-020	808 Palmetto Blvd	0	56	H	
357-06-00-021	806 Palmetto Blvd	0	58	H	
357-06-00-022	804 Palmetto Blvd	0	57	H	
357-06-00-023	802 Palmetto Blvd	0	63	H	
357-06-00-024	720 Palmetto Blvd	0	58	H	
357-06-00-025	718 Palmetto Blvd	0	64	H	
357-06-00-026	716 Palmetto Blvd	5	70	H	
357-06-00-27	714 Palmetto Blvd	8	75	H	B
357-06-00-028	712 Palmetto Blvd	0	48	H	
357-06-00-29	710 Palmetto Blvd - vacant lot	N/A	N/A	-	B
357-06-00-3	708 Palmetto Blvd	15	85	H	B
357-06-00-31	706 Palmetto Blvd	0	50	H	B

357-06-00-032	704 Palmetto Blvd - new house - not in imagery	N/A	N/A	H	
357-06-00-033	702 Palmetto Blvd	0	43	H	
357-02-00-117	620 Palmetto Blvd	0	69	H	
357-02-00-118	618 Palmetto Blvd	5	82	H	
357-02-00-119	616 Palmetto Blvd	0	50	H	
357-02-00-120	614 Palmetto Blvd	0	64	H	
357-02-00-121	612 Palmetto Blvd	17	95	H	
357-02-00-122	610 Palmetto Blvd	0	75	H	
357-02-00-123	608 Palmetto Blvd	8	86	H	
357-02-00-124	606 Palmetto Blvd	0	75	H	
357-02-00-125	604 Palmetto Blvd	0	78	H	
357-02-00-126	602 Palmetto Blvd	0	66	H	
357-03-00-063	520 Palmetto Blvd	0	72	H	
357-03-00-062	518 Palmetto Blvd	0	78	H	
357-03-00-61	516 Palmetto Blvd	0	76	H	R, B
357-03-00-058	510 Palmetto Blvd	0	87	H	
357-03-00-055	504 Palmetto Blvd	0	93	H	
357-03-00-054	502 Palmetto Blvd	0	86	H	
357-03-00-053	420 Palmetto Blvd	0	82	H	
357-03-00-052	418 Palmetto Blvd	9	95	H	
	418-A Palmetto Blvd	15	98	H	
357-03-00-050	414 Palmetto Blvd	17	94	H	
357-03-00-049	412 Palmetto Blvd	14	87	H	
357-03-00-046	406 Palmetto Blvd	22	92	H	
357-03-00-045	404 Palmetto Blvd	30	105	H	
357-03-00-044	402 Palmetto Blvd	21	100	H	

357-03-00-043	320 Palmetto Blvd	19	104	H	R
357-03-00-042	318 Palmetto Blvd	24	113	H	R
357-03-00-041	316 Palmetto Blvd	0	91	H	R
357-03-00-039	312 Palmetto Blvd	10	107	H	B
357-03-00-038	310 Palmetto Blvd	8	108	H	
357-03-00-037	308 Palmetto Blvd	27	127	H	
357-03-00-036	306 Palmetto Blvd	6	103	H	
357-03-00-035	304 Palmetto Blvd	0	86	H	
357-03-00-034	302 Palmetto Blvd	0	84	H	
356-15-00-122	220 Palmetto Blvd	0	85	H	B
356-15-00-123	218 Palmetto Blvd	40	129	H	B
356-15-00-124	216 Palmetto Blvd	50	139	H	B
356-15-00-125	214 Palmetto Blvd	4	92	H	
356-15-00-126	212 Palmetto Blvd	3	92	H	
356-15-00-127	210 Palmetto Blvd	0	74	H	
356-15-00-128	208 Palmetto Blvd	10	99	H	R
356-15-00-129	206 Palmetto Blvd	0	83	H	
356-15-00-130	204 Palmetto Blvd	12	102	H	
356-15-00-131	202 Palmetto Blvd	0	85	H	
356-15-00-132	146 Palmetto Blvd	0	72	H	
356-15-00-133	144 Palmetto Blvd	0	74	H	
356-15-00-134	142 Palmetto Blvd	0	77	H	
356-15-00-135	140 Palmetto Blvd	0	79	H	
356-16-00-049	138 Palmetto Blvd	0	74	H	
356-16-00-051	134 Palmetto Blvd	23	98	H	
356-16-00-052	132 Palmetto Blvd	17	94	H	
356-16-00-053	130 Palmetto Blvd	0	68	H	
356-16-00-054	128 Palmetto Blvd	0	77	H	

356-16-00-055	126 Palmetto Blvd	4	89	H	
356-16-00-056	124 Palmetto Blvd	3	90	H	
356-16-00-057	122 Palmetto Blvd	0	86	H	
356-16-00-058	120 Palmetto Blvd	0	86	H	
356-16-00-060	116 Palmetto Blvd	0	79	H	
356-16-00-061	114 Palmetto Blvd	15	113	H	R
356-16-00-062	112 Palmetto Blvd	0	98	H	
356-16-00-063	110 Palmetto Blvd	0	104	H	
	102 Palmetto Blvd - Enterprise Pavilion	43	147	-	

TABLE 12 STRUCTURES INVENTORY TABLE

H-Habitable Structure
B-Groin
B-Bulkhead
R-Revetment

7.3 Public Access Inventory Table

Street	Tax Map Number	Parcel Number	Facility Type
Coral Street	N/A	N/A	PAP
Fenwick Street	N/A	N/A	PAP
Mary Street	N/A	N/A	PAP
Whaley Street	N/A	N/A	PAP
Matilda Street	N/A	N/A	PAP
Cupid Street	N/A	N/A	PAP
Atlantic Street	N/A	N/A	PAP
Portia Street	N/A	N/A	PAP
Dawhoo Street	N/A	N/A	PAP
Osceola Street	N/A	N/A	PAP
Byrd Street	N/A	N/A	PAP
Nancy Street	N/A	N/A	PAP
Thistle Street	N/A	N/A	PAP
Chancellor Street	N/A	N/A	PAP
Dorothy Street	N/A	N/A	PAP
Marianne Street	N/A	N/A	PAP
Lybrand Street	N/A	N/A	PAP
Catherine Street	N/A	N/A	PAP
Mitchell Street	N/A	N/A	PAP
Baynard Street	N/A	N/A	PAP
Edings Street	N/A	N/A	PAP
Jenkins Street	N/A	N/A	PAP

Seabrook Street	N/A	N/A	PAP
Murray Street	N/A	N/A	PAP
Holmes Street	N/A	N/A	PAP
Loring Street	N/A	N/A	PAP
Laroche Street	N/A	N/A	PAP
Neptune Street	N/A	N/A	PAP
Billow Street	N/A	N/A	PAP
White Cap Street	N/A	N/A	PAP
Edisto Street	N/A	N/A	PAP
Mikell Street	N/A	N/A	PAP
Townsend Street	N/A	N/A	PAP
Louise Street	N/A	N/A	PAP
Ebb Tide Street	N/A	N/A	PAP
Yacht Club Road	N/A	N/A	PAP
Yacht Club Road	N/A	N/A	PAP

TABLE 13 PUBLIC ACCESS INVENTORY TABLE

7.4 Prior Studies

2006 Edisto Beach Restoration Project, Colleton County, South Carolina, Survey Report No. 9 Annual Beach and Inshore Surveys Assessment of Beach and Groin Conditions by Coastal Science and Engineering (January 2016). This is a report detailing the results of the nine, post project monitoring survey of the 2006 Edisto Beach nourishment project and serves as an up to date reference for pre-storm conditions in the event of a major storm event directly impacting Edisto Beach.

2006 Edisto Beach Restoration Project, Colleton County, South Carolina, Survey Report No. 8 Annual Beach and Inshore Surveys Assessment of Beach and Groin Conditions by Coastal Science and Engineering (November 2014). This is a report detailing the results of the eight, post project monitoring survey of the 2006 Edisto Beach nourishment project and serves as an up to date reference for pre-storm conditions in the event of a major storm event directly impacting Edisto Beach.

Final Integrated Feasibility Report and Environmental Assessment Coastal Storm Damage Reduction General Investigation Study, Edisto Beach, Colleton County, South Carolina, by the US Army Corps of Engineers, Charleston District (February 2014). This is a report presenting the results of studies performed to examine the feasibility of federal coast storm damage reduction for the Town of Edisto Beach. It describes baseline conditions, the formulation and evaluation of alternative plans and the identification of a recommended plan.

2006 Edisto Beach Restoration Project, Colleton County, South Carolina, Survey Report No. 7 Annual Beach and Inshore Surveys of Beach and Groin Conditions by Coastal Science and Engineering (January 2014). This is a report detailing the results of the seventh, post project monitoring survey of the 2006 Edisto Beach nourishment project and serves as an up to date reference for pre-storm conditions in the event of a major storm event directly impacting Edisto Beach.

2006 Edisto Beach Restoration Project, Colleton County South Carolina, Survey Report No. 6 Annual Beach and Inshore Surveys of Beach and Groin Conditions by Coastal Science and Engineering (February 2013). This is a report detailing the results of the sixth, post project monitoring survey of the 2006 Edisto Beach

nourishment project and serves as an up to date reference for pre-storm conditions in the event of a major storm event directly impacting Edisto Beach.

Assessment of the Groin Field and Conceptual Plan for Groin Lengthening, Edisto Beach, South Carolina, by Coastal Science and Engineering (January 2013). This is a report assessing the groins field on Edisto Beach and providing a conceptual plan for lengthening the groins.

2006 Edisto Beach Restoration Project, Colleton County South Carolina, Survey Report No. 5 Annual Beach and Inshore Surveys of Beach and Groin Conditions by Coastal Science and Engineering (December 2011). This is a report detailing the results of the fifth, post project monitoring survey of the 2006 Edisto Beach nourishment project and serves as an up to date reference for pre-storm conditions in the event of a major storm event directly impacting Edisto Beach.

2006 Edisto Beach Restoration Project, Colleton County South Carolina, Survey Report No. 4 Annual Beach and Inshore Surveys of Beach and Groin Conditions by Coastal Science and Engineering (November 2010). This is a report detailing the results of the fourth, post project monitoring survey of the 2006 Edisto Beach nourishment project and serves as an up to date reference for pre-storm conditions in the event of a major storm event directly impacting Edisto Beach.

South Carolina's Annual State of the Beaches Report by the South Carolina Office of Coastal and Resource Management. (2010). This report summarizes recent shoreline changes along Edisto Beach and other South Carolina shorelines. The report also shows the locations of beach monitoring stations and the non-stabilized inlet erosion zones and standard erosion zone on Edisto Beach.

2006 Edisto Beach Restoration Project, Colleton County South Carolina, Survey Report No. 3 Annual Beach and Inshore Surveys of Beach and Groin Conditions by Coastal Science and Engineering (October 2009). This is a report detailing the results of the third, post project monitoring survey of the 2006 Edisto Beach nourishment project and serves as an up to date reference for pre-storm conditions in the event of a major storm event directly impacting Edisto Beach.

South Carolina's Annual State of the Beaches Report by the South Carolina Office of Coastal and Resource Management. (2009). This report summarizes recent shoreline changes along Edisto Beach and other South Carolina shorelines. The report also shows the locations of beach monitoring stations and the non-stabilized inlet erosion zones and standard erosion zone on Edisto Beach.

Bathymetric Survey Report Phase 3, Edisto Beach and Edingsville Beach, South Carolina, Edisto Beach Offshore Sand Search prepared by Coastal Science and Engineering (December 2008). This is a report prepared for HDR Engineering Inc of the Carolinas detailing offshore sand sources.

2006 Edisto Beach Restoration Project, Colleton County South Carolina, Survey Report No. 2 Annual Beach and Inshore Surveys of Beach and Groin Conditions by Coastal Science and Engineering (2008). This is a report detailing the results of the second, post project monitoring survey of the 2006 Edisto Beach nourishment project and serves as an up to date reference for pre-storm conditions in the event of a major storm event directly impacting Edisto Beach.

South Carolina's Annual State of the Beaches Report by the South Carolina Office of Coastal and Resource Management. (2008). This report summarizes recent shoreline changes along Edisto Beach and other

South Carolina shorelines. The report also shows the locations of beach monitoring stations and the non-stabilized inlet erosion zones and standard erosion zone on Edisto Beach.

Geotechnical Data Report-2008, Phases 1 and 2, Edisto Beach and Edingsville Beach (SC) by Coastal Science Engineering prepared for HDR Engineering Inc of the Carolinas. (July 2008). This report contains the geotechnical data regarding borings and sediment quality in potential offshore borrow areas.

Edisto Beach Offshore Sand Search. Bathymetric Survey Report Phase 3 Edisto Beach and Edingsville Beach SC prepared by HDR Engineering Inc. of the Carolinas (December 2008). This report provides a detailed bathymetric survey covering the offshore area in the vicinity of Edisto Beach, Edingsville Beach, and Botany Bay Island from St Helena Sound to the North Edisto River.

2006 Edisto Beach Restoration Project, Colleton County South Carolina, Survey Report No. 1 by Coastal Science and Engineering (December 2007). This is a report detailing the results of the first, post project monitoring survey of the 2006 Edisto Beach nourishment project and serves as an up to date reference for pre-storm conditions in the event of a major storm event directly impacting Edisto Beach.

Beach Condition Survey, Edisto Beach, South Carolina by Coastal Science and Engineering (February 2005). This is a memorandum report for the Town of Edisto Beach, Edisto Island, SC. Surveying the current beach conditions prior to nourishment.

Beach Restoration Plan, Edisto Beach, South Carolina by Coastal Science and Engineering (2003). This is a draft Summary Report to Town of Edisto Beach, SC regarding a future restoration plan.

Beach Restoration Project, Edisto Beach, Colleton County, South Carolina by Coastal Science and Engineering. (December 2006). This is the final Report for Town of Edisto Beach, Edisto Island, SC and SC Department of Parks Recreation & Tourism regarding the beach nourishment project.

Project plans and specifications, Edisto Beach, South Carolina by Coastal Science and Engineering. (2005). This is a report on renourishment project plans and specifications.

Edisto Beach: A Beach Access Management Plan by M. Grant Cunningham, Ph.D. and Josh Selway of Clemson University. (January 2004). This is an evaluation of the 1991 Beachfront Management Plan prepared by Planning Services, Inc and subsequent updates.

Reconnaissance borings in potential offshore borrow areas: Edisto Beach restoration project by Coastal Science and Engineering. (July 2004). This is a data report regarding potential offshore borrow areas for future beach renourishment.

Town of Edisto Beach Storm Water Management Plan by B.P. Barber & Associates, Inc. (2004). This report provided an in-depth review of issues involving storm water quality and quantity and provided recommendations for improvement.

Engineering Study for Impervious Area Zoning Requirements, by B. P. Barber & Associates, Inc. (January 2003). This study was a comprehensive engineering evaluation of existing zoning ordinances and recommended revisions related to impervious surfaces.

Groin Conditions and repair recommendations, Edisto Beach, South Carolina by Coastal Science and Engineering (2003). This is a summary Report to Town of Edisto Beach, SC regarding the status of the groins and repair recommendations.

Edisto Beach 1995 beach nourishment project. Survey Report No 5 to Town of Edisto Beach, SC by Coastal Science and Engineering. (November 2001). This is the final survey post nourishment for the Town of Edisto Beach.

Edisto Beach 1995 beach nourishment project. Survey Report No 4 for Town of Edisto Beach, Edisto Island, SC prepared by Coastal Science and Engineering (September 1999). This is the 4th survey post nourishment.

Edisto Beach 1995 beach nourishment project. Survey Report No 3 for Town of Edisto Beach, Edisto Island, SC by Coastal Science and Engineering. (September 1997). This is the 3rd survey post nourishment

Edisto Beach 1995 beach nourishment project by Coastal Science and Engineering (April 1996) This is the first post nourishment survey.

Edisto Beach 1995 beach nourishment project. Survey Report No 2 for Town of Edisto Beach, Edisto Island, SC by Coastal Science and Engineering. (June 1996b). This is a report for the Town of Edisto Beach regarding post-nourishment surveys.

Evaluation of Local Beachfront Management Plans-Phase I by the Office of Ocean and Coastal Resource Management, South Carolina Department of Health and Environmental Control (August 1995). A report to review selected community's local beachfront management plans in relation to the Beachfront Management Act.

Edisto Beach groin study by Coastal Science and Engineering (1993). This is a report for the Town of Edisto Beach regarding the groins.

Edisto Beach Nourishment project-engineering report: geotechnical studies, bathymetric and beach surveys, wave modeling studies by Coastal Science & Engineering (1992). This is a draft Report for South Carolina Department of Parks, Recreation & Tourism regarding Edisto Beach State Park.

Town of Edisto Beach, South Carolina, A Beachfront Management Plan by Planning Services Group, Inc. (1991). This was the first adopted beachfront management plan submitted to the DHEC according to the Beachfront Management Act.

Erosion assessment and beach restoration alternatives for Edisto Beach State Park, South Carolina, by Coastal Science & Engineering. (1990). This report assesses feasibility of beach restoration at the Edisto Beach State Park.

Calculation of Interim Baseline and 40-Year Setback Lines, 1988, by C.P. Jones, D.M. Scaturo, T.W. Kana and W.C. Eiser. This report, prepared by the South Carolina Coastal Council, established the June 1988 locations of the interim baselines and setback lines for 11 islands along the South Carolina coast. Interim lines were later revised by DHEC OCRM when final lines were adopted. pp 3-8.

Shorefront Management Plan-Edisto Island Jeremy Inlet to Big Bay Creek, S.C., Volume I: Management Program. 1987 by Cubit Engineering, LTD prepared for the South Carolina Coastal Council. This report is a strategic plan for the Edisto Island area that provides a framework for decision making regarding the future of Edisto Island.

Shorefront Management Plan-Edisto Island Jeremy Inlet to Big Bay Creek S.C., Volume II: Supporting Studies. 1987 by Cubit Engineering, LTD prepared for the South Carolina Coastal Council. This report includes all supporting studies for Volume I.

Ecological Characterization of the Sea Island coastal region of South Carolina and Georgia. Volume I: Physical feature of the characterization area. (1980). Prepared by T.D. Mathews, F.W. Stapor, Jr., C.R. Richter, et al., eds.

Land Use Plan-Town of Edisto Beach by Lowcountry Council of Governments. (March 1980).

7.5 Copies of Local Laws and Ordinances

CHAPTER 6- ANIMALS

Sec. 6-36. - Running at large.

It shall be unlawful for the owner of any dog to allow the same to run at large in the town.

(1) A dog shall be considered running at large when he is not restrained by a fence, building, leash or similar device, or when he is not under the direct control of his owner or other competent person.

(2) Notwithstanding the provisions of this section, on the sandy public beach between the months of May 1 through October 31 a dog shall be restrained by a leash.

(Ord. of 5-12-88, § 1; Ord. of 11-14-91, § 1; Ord. of 12-8-94, § 1(3-7))

Sec. 6-38. - Sanitation.

The owner or custodian of a dog shall immediately collect, remove and dispose of all excrement deposited by such animal on any beach, public property, street, right-of-way, sidewalk, public way, playground, or upon private property owned by others. The owner or custodian shall place the excrement in a plastic bag or other suitable container and deposit the collection in a waste receptacle. The violation of this section shall constitute a misdemeanor punishable as provided in section 1-6.

(Ord. No. 2009-20, 7-9-09)

CHAPTER 10- BEACHES AND WATERWAYS

Sec. 10-31. - Shark fishing.

It shall be unlawful for any person to use chum of any type for the purpose of shark fishing from the waters of the town and adjacent streams.

(Ord. of 10-4-78)

Sec. 10-32. - Throwing trash, rubbish, debris prohibited.

It shall be unlawful for any person to throw or leave any trash, rubbish or other debris of any kind whatsoever on the beaches or any area of the town unless such trash, rubbish or other debris is deposited in one of the receptacles placed on the beaches or other areas for that purpose.

(Ord. of 4-14-94, § 1(4-1))

Cross reference— Solid waste management, ch. 66.

Sec. 10-33. - Vehicles limited.

The driving or operating of any motor vehicle of any kind or nature on the beach within the town is prohibited; however, governmental vehicles operated while cleaning or working on the beach, law enforcement vehicles, emergency vehicles, or vehicles operating pursuant to a duly granted permit from the town shall be exempt from the application of this section. In addition, individuals who have physical handicaps that are recognized by state law, and that would otherwise preclude their use and enjoyment of the beach, may drive on the beach an appropriate small open motorized vehicle designed to transport one such handicapped individual at speeds not in excess of ten miles per hour.

(Ord. of 4-14-94, § 1(4-2))

Cross reference— Traffic and vehicles, ch. 78.

Sec. 10-34. - Motorized watercraft/jet skis.

(a) *Prohibited upon beach and dunes.* Motorized watercraft, jet skis, and trailers designed to carry motorized watercraft and/or jet skis are prohibited on and over the beach and dunes above mean low water within the town.
(b) *Jet ski business regulations.*
    (1) Every jet ski business shall have a patron watercraft in the water supervising the operation and conduct of the renters during all hours of operation when jet skis are being rented.
    (2) Every jet ski business owner or agent shall obtain a signed, written consent from the parent or legal guardian of any person under the age of 15 before allowing such minor to rent a jet ski or similar type of watercraft and shall by renting to the minor assume responsibility for the conduct of the minor in the use of the jet ski or similar type of watercraft.

(Ord. of 9-8-94, § 1)

Cross reference— Businesses, ch. 18.

Sec. 10-35. - Penalties.

Any person who violates the provisions of this article upon conviction shall be guilty of a misdemeanor and shall be punished in accordance with section 1-6.

(Ord. of 4-14-94, § 1(4-4))

Sec. 10-36. - Glass containers prohibited on the beach.

It shall be unlawful for any person to bring onto the sand beach of the town any bottles, jars or containers made of glass.

(Ord. of 10-12-89)

Sec. 10-37. - Camping, picnicking and the use of tents, canvas awnings, and umbrellas on the beach and beach access; holes on the sandy beach.

(a) It shall be unlawful to erect tents or canvas awnings or umbrellas or to camp or picnic in and on the beach accesses of the town.
(b) It shall be unlawful to camp on the beaches of the town.
(c) It shall be unlawful to have erected any tent, canvas awning or umbrella on the beaches of the town from sunset to sunrise daily.

(d) For the purposes of this section the term "beach" shall have the meaning set forth in section 10-61 of this Code.
(e) For purposes of this section the term "beach access" shall mean the entire area of each of those platted public accesses to the beach within the town dedicated to the use of the public.
(f) It shall be unlawful for any person, firm or corporation within the corporate limits of the town to dig into the sand on any part of the sand beach greater than 12 inches deep without having an adult person attending the area to prevent any person or persons from walking into any existing hole and risking personal injury, and to permit public safety vehicles the ability to respond to emergencies without risk of damage to equipment or personal property.
(g) It shall be unlawful for a person responsible for the creation of a hole greater than 12 inches deep on the sandy beach to leave the area, without filling the hole to level with the surrounding area and leaving the area in the same general condition in which it was found.
(h) Tents, canopies, beach chairs, kites, volleyball nets, coolers, beach umbrellas and similar property, which are left unattended on the beach after sunset shall be deemed abandoned and the town shall have the right to take possession of the property. The property shall belong to, and be subject to disposal by, the town.
(i) No personal property shall be located within 25 feet of any beach access or any turtle nest.

(Ord. of 7-11-96(1), § 2; Ord. of 9-8-05(1), § 1; Ord. No. 2011-13, 4-14-11)

Editor's note— Ord. No. 2011-13, adopted April 14, 2011, changed the title of section 10-37 from "Camping, picnicking and the use of tents, canvas awnings, and umbrellas on the beach and beach access" to "Camping, picnicking and the use of tents, canvas awnings, and umbrellas on the beach and beach access; holes on the sandy beach." The historical notation has been preserved for reference purposes.

Sec. 10-38. - Limitations on launching boats from beaches.

(a) *Limitations on launching boats from beaches.* No boat or watercraft of any kind shall be launched or recovered over the grassy portion of the dunes along the beaches within the Town of Edisto Beach through use of a trailer or cart of any kind. The beach accesses may be used for the launching or recovery of sailboats, kayaks, or similar non-motorized craft. However, any trailer or cart of any kind used to transport the craft to the access must be removed and may not be used to transport such craft over the dunes to the water and must be removed from the access immediately upon completion of the launch or recovery operation.
(b) *Motorized boats prohibited on beaches.* No motorized watercraft are permitted upon the sandy beach at any time.
(c) *Limitations on boat storage on beaches.* No boat or watercraft of any kind shall be stored upon the grassy portion of dunes along the beaches within the Town of Edisto Beach. Nothing in this section shall be construed as to prohibit the temporary overnight storage of sailboats on the sandy beach.
(d) *Limitations on transport of non-motorized boats along the beach.* No sailboats, kayaks, or other non-motorized boats shall be transported on the dunes, the grassy areas of the beach and dunes, or the areas of the sand fencing. No sailboats, kayaks, or other non-motorized boats shall be transported by trailers on the sandy beach. Sailboats, kayaks, or other non-motorized boats shall only be permitted to be transported on the sandy beach utilizing manually operated sand dollies, manually operated carts or other manually operated transportation devices specifically manufactured for that purpose.

(Ord. of 6-10-99, §§ 1—3; Ord. No. 2010-37, 9-9-10)

Sec. 10-39. - Fires prohibited.

(a) It shall be unlawful for any person to build or maintain any fire or use any propane fired grill or other cooker heated by fire on the beach, beach access, street end adjacent to the beach, or any town-owned land immediately adjacent to the beach at any time. For the purposes of this section the term

"beach" shall have the meaning set forth in section 10-61 of the Code of Ordinances of the Town of Edisto Beach. For purposes of this section the term "beach access" shall mean the entire area of each of those platted public accesses to the beach within the town dedicated to the use of the public.

(b) Notwithstanding the provisions of subsection (a) herein, it is permissible for a person to utilize a propane fired grill or cooker for organized events on the beach only upon receipt of a written permit from the town. The person must submit a written application to the town for a permit no later than 15 days prior to the event which sets forth the proposed use. Upon receipt of a permit endorsed by the police chief and the fire chief, or their designees, the use will be deemed permissible. This provision shall not be read to make it permissible to utilize a propane fired grill or cooker upon the beach accesses, street ends adjacent to the beach, or any town-owned land immediately adjacent to the beach.

(Ord. of 3-20-08(1))

Sec. 10-40. - Beach access vegetation and fencing.

It shall be unlawful for any person to damage, walk upon, vandalize, place objects or items upon, remove, or in any other manner disrupt or disturb, the vegetation and fencing located on the beach, beach accesses, street ends adjacent to the beach, or any town-owned land immediately adjacent to the beach at any time. For purposes of this section the term "beach access" shall mean the entire area of each of those platted public accesses to the beach within the town dedicated to the use of the public. For purposes of this section "vegetation" shall mean plants, bushes, grass, flowers, shrubs and trees planted in the subject areas by the town.

(Ord. of 3-20-08(1))

Secs. 10-41—10-60. - Reserved.

PROTECTION OF SEA TURTLES

Footnotes:

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Cross reference— Animals, ch. 6.

Sec. 10-61. - Definitions.

The following words, terms and phrases, when used in this division, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Artificial light means any source of light emanating from a manmade device, including but not limited to incandescent mercury vapor, metal halide, or sodium lamps, flashlights, spotlights, streetlights, vehicular lights, construction or security lights.

Beach means that area of unconsolidated material that extends landward from the mean low water line to the place where there is a marked change in material or physiographic form, or to the line of permanent vegetation (usually the effective limit of storm waves).

Bug light means an incandescent lamp that is tinted yellow in order to attenuate its emission of short wave-length light and thus reduce attractiveness to insects.

Floodlight means reflector type light fixture that is attached directly to a building and which is unshielded.

Low-profile luminaire means a light fixture set on a base that raises the source of the light no higher than 48 inches off the ground, and designed in such a way that light is directed downward from a hooded light source.

New development includes new construction and remodeling of existing structures when such remodeling includes alteration of exterior lighting.

Person means any individual, firm, association, joint venture, partnership, estate, trust, syndicate, fiduciary, corporation, group or unit of federal, state, county or municipal government.

Pole lighting means a light fixture set on a base or pole that raises the source of the light higher than 48 inches off the ground.

Shading coefficient means a coefficient expressing that percentage of the incident radiation that passes through the window as heat.

Tinted or filmed glass means window glass that has been covered with window tint or film such that the material has:

(1) A shading coefficient of 0.45 or less;
(2) A minimum five-year warranty;
(3) Adhesive as an integral part; and
(4) Performance claims that are supported by approved testing procedures and documentation.

(Ord. of 2-13-92, § 1; Ord. of 5-10-01(1), § 1)

Cross reference— Definitions generally, § 1-2.

Sec. 10-62. - Purpose.

The purpose of this division is to protect the threatened and endangered sea turtles that nest along the beaches of the town by safeguarding the adult female turtle laying her eggs and the hatchlings from sources of artificial light that cause disorientation and subsequent death. It is the policy of the town that no artificial light shall illuminate any area of the beaches of the town during the period of May 1 through October 31 of each year from dusk to dawn.

(Ord. of 2-13-92, § 2; Ord. of 5-10-01(1), § 2)

Sec. 10-63. - New development.

It is the policy of the town that no artificial light illuminate any area of the beaches in of the town. To meet this intent, if lighting associated with construction or development can be seen from the beach, all building and electrical plans for construction of single family or multi-family dwellings, commercial or other structures, including electrical plans for parking lots, dune walkovers or other outdoor lighting for real property shall be in compliance with the following (this may include any structure whether on front beach or not):

(1) Floodlights shall be prohibited. Wall mounted light fixtures shall be fitted with hoods so that no light illuminates the beach.
(2) Pole lighting shall be shielded in a way that light will be contained with an arc of three to 73 degrees on the seaward side of the pole. Outdoor lighting shall be held to the minimum necessary for security and convenience.
(3) Low profile luminaries shall be used in parking lots and the lighting shall be positioned so that no light illuminates the beach.
(4) Dune crosswalks shall utilize low profile shielded luminaries. Only mushroom type light fixtures, which direct light downward, shall be permitted. Such lighting shall also meet the following requirements:
    a. Fixtures shall be installed at least 25 feet apart and not more than one foot above the surface of the walkovers.
    b. Illumination shall be limited to 25 watts through the use of "bug" type bulbs.
(5) Lights on balconies shall be fitted with hoods so that lights will not illuminate the beach.
(6) Window treatments in windows facing the ocean are required so that interior lights do not illuminate the beach. The use of blackout draperies or shade screens is preferred. The addition of tint or film to windows or awnings is also encouraged, as is turning off unnecessary lights if the lights illuminate the beach.

(7) Temporary security lights at construction sites shall not be mounted more than 15 feet above the ground and illumination from the lights shall not spread beyond the boundary of the property being developed and in no case shall those lights illuminate the beach.

(Ord. of 2-13-92, § 3; Ord. of 5-10-01(1), § 3; Ord. of 10-13-05(1), § 1; Ord. No. 2011-11, 4-14-11)

Cross reference— Planning, ch. 62; zoning, ch. 86.

Sec. 10-63A. - Construction lighting.

Temporary security lights at construction sites shall not be mounted more than 15 feet above the ground. Illumination for these lights shall be shielded so that they do not illuminate the beach and cannot be seen from the beach.

(Ord. of 5-10-01(1), § 4; Ord. No. 2011-11, 4-14-11)

Sec. 10-64. - Exemptions for new development.

The provisions of section 10-63 shall not apply to any structure for which a building permit has been issued by the town prior to the effective date of the ordinance from which the latest versions of this division have been adopted.

(Ord. of 2-13-92, § 4; Ord. No. 2011-11, 4-14-11)

Sec. 10-65. - Existing development.

It is the policy of the town that no artificial light illuminate any area of the beaches of the town. This may include light emanating from any structure on the beach whether or not located on the front beach. To meet this intent, lighting of existing structures which can be seen from the beach shall be in compliance with the following:

(1) Lights illuminating building or associated grounds for decorative, security, or recreational purposes shall be shielded or screened such that they are not visible from the beach and will be turned off from 10:00 p.m. until dawn during the period of May 1 to October 31 of each year.
(2) Lights illuminating dune crosswalks of any areas oceanward of the dune line shall be turned off from dusk to dawn during the period of May 1 to October 31 of each year.
(3) Motion detecting security lights shall be permitted throughout the night so long as low profile illuminaries are used and screened in a way that those lights do not illuminate the beach.
(4) Window treatments in windows facing the ocean are required so that interior lights do not illuminate the beach. The use of blackout draperies or shade screens is preferred. The addition of tint or film to windows or awnings is also encouraged, as is turning off unnecessary lights if the lights illuminate the beach.

(Ord. of 2-13-92, § 5; Ord. of 5-10-01(1), § 5; Ord. No. 2011-11, 4-14-11)

Sec. 10-66. - Publicly owned lighting.

Streetlights and lighting at parks and other publicly owned beach access areas shall be subject to the following:

(1) Streetlights shall be located so that their illumination shall travel away from the beach. These lights shall be shielded so that backlighting is prevented and they shall not be visible from the beach.
(2) Lights at parks or other public beach access points shall be shielded so as to prevent any lumination of the beach.

(Ord. of 2-13-92, § 6; Ord. of 5-10-01(1), § 6; Ord. No. 2011-11, 4-14-11)

Cross reference— Utilities, ch. 82.

Sec. 10-66A. - Individual use of lights.

(a) Use of unfiltered lights (any color spectrum except red), including but not limited to flashlights, cellular phones, and cameras, by persons are prohibited on the beach from dusk to dawn between May 1 and October 31 each year.
(b) No unfiltered light shall be shown directly on adult turtles, eggs or hatchlings.

(Ord. of 5-10-01(1), § 6; Ord. No. 2011-11, 4-14-11)

Sec. 10-67. - Enforcement and penalty.

This division shall be enforced in accordance with the provisions of this chapter, with penalties set forth in section 1-6 of this Code. Violation of any provision of this article shall constitute a misdemeanor. Each day of violation shall constitute a separate offense.

(Ord. of 2-13-92, § 7; Ord. of 5-10-01(1), §§ 7, 9; Ord. No. 2011-11, 4-14-11)

Sec. 10-67A. - Periods of enforcement

The provisions of sections 10-63A, 10-65, and 10-67 shall be enforced within the town during the period of May 1 through October 31 of each year between dusk and dawn.

(Ord. of 5-10-01(1), § 8)

ARTICLE IV. - FLOOD DAMAGE PREVENTION

Editor's note— An ordinance adopted November 8, 2007, amended Art. IV, in its entirety, to read as herein set out. Prior to inclusion of said ordinance, Art. IV pertained to similar subject matter. See Code Comparative Table for a detailed analysis of inclusion.

Cross reference— Civil emergencies, ch. 26; planning, ch. 62.

State Law reference— Authority to develop a comprehensive plan which includes protection against floods, S.C. Code 1976, § 6-7-510.

DIVISION 1. - GENERALLY

Sec. 14-110. - Application, purpose, objectives, and warning and disclaimer of liability.

(a) *Lands to which this article applies.* This article shall apply to all areas of special flood hazard within the jurisdiction of the Town of Edisto Beach as identified by the Federal Emergency Management Agency in its flood insurance study, dated November 7, 2001, with accompanying maps and other supporting data that are hereby adopted by reference and declared to be a part of this article. Upon annexation, any special flood hazard areas identified by the Federal Emergency Management Agency in its flood insurance study for the unincorporated areas of Colleton County, with accompanying map and other data are adopted by reference and declared part of this article.

(b) *Statement of purpose and objectives.* It is the purpose of this article to protect human life and health, minimize property damage, and encourage appropriate construction practices to minimize public and private losses due to flood conditions by requiring that uses vulnerable to floods, including facilities

which serve such uses, be protected against flood damage at the time of initial construction. Uses of the floodplain which are dangerous to health, safety, and property due to water or erosion hazards, or which increase flood heights, velocities, or erosion are restricted or prohibited. These provisions attempt to control the alteration of natural floodplains, stream channels, and natural protective barriers which are involved in the accommodation of flood waters, and control filling, grading, dredging and other development which may increase flood damage or erosion. Additionally, the article prevents or regulates the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards to other lands.

The objectives of this article are to protect human life and health, to help maintain a stable tax base by providing for the sound use and development of flood-prone areas in such a manner as to minimize flood blight areas, and to insure that potential home buyers are notified that property is in a flood area. The provisions of the article are intended to minimize damage to public facilities and utilities such as water and gas mains, electric, telephone, and sewer lines, streets and bridges located in the floodplain, and prolonged business interruptions. Also, an important floodplain management objective of this article is to minimize expenditure of public money for costly flood control projects and rescue and relief efforts associated with flooding.

(c) *Warning and disclaimer of liability.* The degree of flood protection required by this article is considered reasonable for regulatory purposes and is based on scientific and engineering consideration. Larger floods can and will occur on rare occasions. Flood heights may be increased by manmade or natural causes. This article does not imply that land outside the areas of special flood hazard or uses permitted within such areas will be free from flooding or flood damages. This article shall not create liability on the part of the town or by any officer or employee thereof for any flood damages that result from reliance on this article or any administrative decision lawfully made hereunder.

(Ord. of 11-8-07(1))

Sec. 14-111. - Administrator.

(a) The building codes administrator and or his designee is the official designated to administer the provisions of this article.

(b) The building codes administrator shall advise permittee that additional federal or state permits may be required, and if specific federal or state permits are known, require that copies of such permits be provided and maintained on file with the development permit.

(c) The building codes administrator shall review proposed development to assure that all necessary permits have been received from those governmental agencies from which approval is required by federal or state law, including section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C 1334.

(Ord. of 11-8-07(1); Ord. No. 2011-03, 2-10-11)

Sec. 14-112. - Alterations to meet new construction requirements.

Any alteration, repair, reconstruction or improvements to a structure, which is in compliance with the provisions of this article, shall meet the requirements of new construction as contained in this article.

(Ord. of 11-8-07(1))

Sec. 14-113. - Definitions.

The following words, terms and phrases, when used in this article, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Accessory structure means a structure that is located on the same parcel of property as the principal structure and the use of is incidental to the use of the principal structure. Garages, carports and storage sheds are common urban accessory structures. Pole barns, hay sheds and the like qualify as accessory structures on farms, and may or may not be located on the same parcel as the farm dwelling or shop building.

Addition (to an existing building) means an extension or increase in the floor area or height of a building or structure. Additions to existing buildings shall comply with the requirements for new construction. Where a firewall or load-bearing wall is provided between the addition and the existing building, the addition(s) shall be considered a separate building and must comply with the standards for new construction. See "new construction" and "substantial improvement" definitions.

Appeal means a request for a review of the building codes administrator's interpretation of any provision of this section.

Appurtenant structure means a structure that is on the same parcel of property as the principal structure to be insured and the use of which is incidental to the use of the principal structure.

Area of special flood hazard means the land in the floodplain within the town subject to a one percent or greater chance of flooding in any given year. The area may be designated as zone A on the flood insurance rate map.

Base flood means one foot above the flood having a one percent chance of being equaled or exceeded in any given year.

Basement means any enclosed area of a building that is below grade on all sides. Basements are not allowed.

Breakaway wall means a wall intended to collapse under stress without jeopardizing the structural support of the building. There are characteristics that may be used as guides in identifying breakaway walls and understanding their limited use. Breakaway walls are designed to fail without causing any damage to the structural integrity of the building and, therefore, are not connected to the building's support system (piers, piles, columns, braces, etc.). Areas so enclosed are not secure against forcible entry. For example, plywood sheets would be loosely toenailed top and bottom; brick or concrete masonry units are stacked loosely without grout, mortar or reinforcement. Stored boxes or furniture placed against breakaway walls must be avoided. Breakaway walls shall have a design safe loading resistance of not less than ten and no more than 20 pounds per square foot. Walls that exceed these guidelines are non-breakaway walls.

Building means a walled and roofed structure that is principally above ground and affixed to a permanent site.

Coastal high-hazard area means the area subject to high-velocity waters, including but not limited to hurricane wave wash or tsunamis. The area is designated on a flood insurance rate map as zone V1—30.

Development means any manmade change to improved or unimproved real estate, including but not limited to buildings or other structures, dredging, filling, grading, paving, excavation, drilling operations, mining, or storage of equipment or materials.

Elevated building means a non-basement building built to have the lowest floor elevated above the ground level by means of fill, solid foundation perimeter walls, pilings, columns, piers, or shear walls parallel to the flow of water.

Erosion means the process of the gradual wearing away of land masses. This peril is not per se covered under the National Flood Insurance Program.

Existing construction means for the purpose of determining rates, structures for which the start of construction commenced before the effective date of the flood insurance rate map, or before January 1, 1975, for flood insurance rate maps effective before that date. Existing construction may also be referred to as "existing structures."

Existing manufactured home park or *subdivision* means, a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which; the manufactured homes are to be affixed

(including, at a minimum, the installation of utilities, the construction of streets, and either final site grading or pouring of concrete pads is completed before October 9, 1986.

Expansion to an existing manufactured home park or *subdivision* means the preparation of additional sites by the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete slabs).

Flood or *flooding* means:

(1) A general and temporary condition of partial or complete inundation of normally dry land areas from:

a. The overflow of inland or tidal waters.

b. The unusual and rapid accumulation or runoff of surface waters from any source.

(2) The collapse or subsidence of land along the shore of a lake or other body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels or suddenly caused by an unusually high water level in a natural body of water, accompanied by a severe storm, or by an unanticipated force of nature, such as flash flood or an abnormal tidal surge, or by some similarly unusual and unforeseeable event that results in flooding as defined in subsection (1)a. of this definition.

Flood elevation determination means a determination by the administrator of the water surface elevations of the base flood, that is, one foot above the flood level that has a one percent or greater chance of occurrence in any given year.

Flood insurance rate map (FIRM) means an official map of a community, on which the Federal Emergency Management Agency has delineated both the areas of special flood hazard and the risk premium zones applicable to the community.

Flood insurance study means the official report provided by the Federal Emergency Management Agency. The report contains flood profiles, as well as the flood boundary floodway map and the water surface elevation of the base flood.

Floodplain or *floodprone area* means any land area susceptible to being inundated by water from any source (see definition of "flooding").

Floodplain management means the operation of an overall program of corrective and preventive measures for reducing flood damage, including but not limited to emergency preparedness plans, flood control works and floodplain management regulations.

Floodplain management regulations means zoning ordinances, subdivision regulations, building codes, health regulations, special-purpose ordinances (such as floodplain ordinance, grading ordinance and erosion control ordinance) and other applications of police power. The term describes such state or local regulations, in any combination thereof, which provide standards for the purpose of flood damage prevention and reduction.

Floodproofing means any combination of structural and non-structural additions, changes or adjustments to structures that reduce or eliminate flood damage to real estate or improved real property, water and sanitary facilities, structures and their contents.

Flood-resistant material means any building material capable of withstanding direct and prolonged contact (minimum 72 hours) with floodwaters without sustaining damage that requires more than low-cost cosmetic repair. Any material that is water-soluble or is not resistant to alkali or acid in water, including normal adhesives for above-grade use, is not flood-resistant. Pressure-treated lumber and naturally decay-resistant lumber are acceptable flooring materials. Sheet-type flooring coverings that restrict evaporation from below and materials, which are impervious, but dimensionally unstable are not acceptable. Materials that absorb or retain water excessively after submergence are not flood-resistant. Please refer to Technical Bulletin 2-93, Flood-Resistant Materials for Buildings Located in Special Flood Hazard Areas in accordance with the National Flood Insurance Program, document number FIA-TB-2, dated 4/93, and available from

the Federal Emergency Management Agency. Class 4 and 5 materials, referenced therein, are acceptable flood-resistant materials.

Floodway means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one foot.

Functionally dependent facility means a facility which cannot be used for its intended purpose unless it is located or carried out in close proximity to water, such as a docking or port facility necessary for the loading and unloading of cargo or passengers, shipbuilding, ship repair, or seafood processing facilities. The term does not include long-term storage, or related manufacture, sales, or service facilities.

Highest adjacent grade means the highest natural elevation of the ground surface, prior to construction, next to the proposed walls of the structure.

Historic structure means any structure that is:

(1) Listed individually in the National Register of Historic Places, a listing maintained by the U.S. Department of the Interior (DOI) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the national register;

(2) Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the secretary to qualify as a registered historic district;

(3) Individually listed on a state inventory of historic places;

(4) Individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified:

   a. By an approved state program as determined by the Secretary of Interior, or

   b. Directly by the Secretary of Interior in states without approved programs. Some structures or districts listed on the state or local inventories may not be "historic" as cited above, but have been included on the inventories because it was believed that the structures or districts have the potential for meeting the "historic" structure criteria of the DOI. In order for these structures to meet NFIP historic structure criteria, it must be demonstrated and evidenced that the South Carolina Department of Archives and History has individually determined that the structure or district meets DOI historic structure criteria.

Limited storage means an area used for storage and intended to be limited to incidental items that can withstand exposure to the elements and have low flood damage potential. Such an area must be of flood resistant or breakaway material, void of utilities except for essential lighting and cannot be temperature controlled.

Lowest floor means the lowest floor (including basement) of the lowest enclosed area. Modifications of the lowest floor definition are permitted as outlined in division 6 of this article. The lowest floor elevation is the elevation of the bottom of the floor beam of the lowest floor in zone V. In all other zones, the lowest floor elevation is the elevation of the top of the lowest floor. Exceptions to construction below base flood level are clearly defined in division 6 of this article.

Manufactured home means used in lieu of the term "mobile home" and means a structure, transportable in one or more sections that is built on a permanent chassis and designed to be used with or without a permanent foundation.

Manufactured home park or *subdivision* means, a parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.

Market value means the current assessed building value as determined by the county assessor's office or the value of an appraisal performed by a licensed appraiser at the expense of the owner and/or real estate purchase contract within 12 months prior to the date of the application for a permit.

Mean sea level means the average height of the sea for all stages of the tide.

New construction means, a structure for which the start of construction commenced after the effective date of the town's first flood ordinance, or October 9, 1986. The term does not preclude improvements such as, additions, extensions or increases in the floor area or height of a building or structure defined as new construction that does not constitute substantial improvement. These improvements are allowed if they comply with the flood standards in place at the time the structure was constructed.

New manufactured home park or *subdivision* means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete slabs) is completed on or before October 9, 1986.

National Geodetic Vertical Datum (NVGD) means, as corrected in 1929, elevation reference points set by National Geodetic Survey based on mean sea level.

Non-conforming structure or *building* means a structure that does not conform to the provisions of the current Article IV, Flood Damage Prevention Ordinance whether it was built prior to the initial adoption of Flood Damage Prevention Ordinance (FDPO) on October 9, 1986, or became non-conforming due to a subsequent change in the flood insurance rate map (FIRM) or FDPO.

North American Vertical Datum (NAVD) means, datum point established at Pointe-au-Pere on the St. Lawrence River, Quebec Province, Canada, based on the mass or density of the earth. The datum listed as the reference datum on flood insurance rate maps should be used for elevation certificate and floodproofing certificate completion.

Prefabricated building means a building that is built in one or more standardized sections for shipment and quick assembly on a permanent foundation.

Primary frontal dune means a continuous or nearly continuous mound or ridge of sand with relatively steep seaward and landward slopes immediately landward and subject to erosion and overtopping from high tides and waves during coastal storms. The inland limit of the primary frontal dune occurs at the point where there is a distinct change from a relatively steep slope to a relatively mild slope.

Recreational vehicle means a vehicle which is:

(1) Built on a single chassis;

(2) Four hundred square feet or less when measured at the largest horizontal projection;

(3) Designed to be self-propelled or permanently towable by a light duty truck; and,

(4) Designed primarily not for use as a permanent dwelling, but as temporary living quarters for recreational, camping, travel, or seasonal use.

Sand dunes means naturally occurring accumulations of sand in ridges or mounds landward of the beach.

Special hazard area means an area having special flood or flood-related erosion hazards.

Start of construction, includes substantial improvement means the date the building permit was issued, provided the actual start of construction, repair, reconstruction or improvement was within 180 days of the permit date. The actual start means the first placement of permanent construction of a structure (other than a manufactured home) on a site, such as the pouring of slabs or footings or any work beyond the stage of excavation. Permanent construction does not include land preparation, such as clearing, grading and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not a part of the main structure. For a substantial improvement, the actual start of construction means the first alteration of any wall, ceiling, floor, or other structural part of the building, whether or not that alteration affects the external dimensions of the building.

Structure means, for floodplain management purposes, a walled and roofed building, including a gas or liquid storage tank that is principally above ground, as well as a manufactured home.

Substantial damage means damage of any origin sustained by a structure whereby the cost of restoring the structure to it's before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred. If the repair project is conducted in phases, the total of all costs associated with each phase, beginning with the issuance of the first permit, shall be utilized to determine whether substantial damage will occur.

Substantial improvement means any improvement of a structure, whether it is a repair, reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure, before the start of construction of the improvement. This term includes structures that have incurred substantial damage, regardless of the actual repair work performed. The term does not, however, include either:

(1) Any project of improvement to a structure to correct existing violations of state or local health, sanitary or safety code specifications which have been identified by local code enforcement official and which are the minimum necessary to assure safe living conditions (does not include American with Disabilities Act compliance standards); or

(2) Any alteration of a historic structure provided that the alteration will not preclude the structure's continued designation as a historic structure.

If the improvement project is conducted in phases, the total of all costs associated with each phase, beginning with the issuance of the first permit, shall be utilized to determine whether substantial improvement will occur.

For the purposes of residential structures only, the cost of work counted for determining if and when substantial improvement to a structure occurs shall be cumulative for a period of five years.

The market values shall be determined by one of the following methods:

1. The current assessed building value as determined by the county's assessor's office or the value of an appraisal performed by a licensed appraiser at the expense of the owner; or

2. One or more certified appraisals from a registered professional licensed appraiser in accordance with the laws of South Carolina. The appraisal shall indicate actual replacement value of the building or structure in its pre-improvement condition, less depreciation for functionality and obsolescence and site improvements. The Marshall & Swift Residential Cost handbook shall be used to determine costs for buildings or structures.

3. Real estate purchase contract within 12 months prior to the date of the application for a permit.

Substantially improved existing manufactured home park or *subdivision* means where the repair, reconstruction, rehabilitation or improvement of the streets, utilities and pads equals or exceeds 50 percent of the value of the streets, utilities and pads before the repair, reconstruction, rehabilitation or improvement commenced.

Unfinished area means an enclosed area used for parking vehicles and/or storage purposes only. Sheetrock (drywall) used for fire protection is permitted.

Variance means a grant of relief by a community from the terms of a floodplain management regulation.

Violation means the failure of a structure or other development to be fully compliant with these regulations.

Water surface elevation means the projected heights in relation to mean sea level reached by floods of various magnitudes and frequencies in the floodplains of coastal or riverine areas.

(Ord. of 11-8-07(1); Ord. No. 2010-08, 4-8-10)

Cross reference— Definitions generally, § 1-2.

Sec. 14-114. - Required permits and general construction standards.

(a) A permit is required for all proposed construction and other developments, including but not limited to the placement of manufactured homes and placement of fill material.

(b) All permit applications shall be reviewed to determine whether proposed building sites will be reasonably safe from flooding. If a proposed building site is in a floodprone area, all new construction and substantial improvements (including the placement of prefabricated buildings and manufactured homes) shall:

(1) Be designed or modified and adequately anchored to prevent flotation, collapse or lateral movement of the structure.

(2) Be constructed with materials and utility equipment resistant to flood damage.

(3) Be constructed by methods and practices that minimize flood damage.

(c) All buildings and structures under the jurisdiction of the building code erected or relocated in areas subject to rising waters, flood, or flooding from overflow of streams, rivers or other inland water or abnormally high tidal water or rising coastal water resulting from severe storms, hurricanes or tsunamis shall be elevated as set forth in this section and shall meet construction requirements as herein set forth, in addition to meeting all other code requirements.

(d) All construction permitted in the town located in "A" flood zones shall position the lowest floor elevations, including basements, air conditioning and mechanical units, not lower than one-foot above the 100-year base flood elevation for the zone in which they are located. Elevations are based upon mean sea level, and the regulated zones of the town are indicated on flood insurance rate maps as follows:

Map Number	Date
45029C0689 F	November 7, 2001
45029C0693 F	November 7, 2001
45029C0694 F	November 7, 2001
45029C0726 F	November 7, 2001
45029C0727 F	November 7, 2001
45029C0731 F	November 7, 2001

(e) An elevation certificate attesting to a structure's elevation based on mean sea level datum shall be furnished to the building official at the time of the inspection of first floor construction. This certificate shall be prepared by a land surveyor or civil engineer, registered and licensed in the state and shall bear his or her seal. For structures in "V" zones the certificate shall state the elevation of the bottom of the lowest horizontal member of the structure. In "A" zones the certificate shall state the elevation of the top of the finished first floor.

(f) The building codes administrator shall obtain from the owner or representative of the owner, a completed construction elevation certificate of all new structures as well as substantially improved structures. This certificate shall be based on mean sea level datum and shall be signed and sealed by a licensed land surveyor or civil engineer, registered in the state.

(1) For structures located in "V" zones, this certificate shall indicate the elevation at the bottom of the lowest horizontal structural member.

(2) For structures located in "A" zones this certificate shall indicate the elevation at top of the lowest first floor.

(3) Obtain, if the structure has been flood proofed, the elevation (in relation to mean sea level) to which the structure was floodproofed.

(g) (1) No person shall in any manner damage, destroy, remove, or redistribute sand dunes or alter, interfere with, do or perform any act which tends to lessen the protection afforded by the dunes, without first having obtained a permit from the building department in accordance with all applicable section(s) of this chapter and chapter 86.

(2) No revetment, breakwater, groin, earthwork or other erosion control device shall be constructed or altered without the approval of the building code administrator and without the issuance of a valid permit pursuant to the conditions and limitations of this section.

(3) In the event of construction of any such revetment, breakwater, groin or any other erosion control device, it shall be the responsibility of the property owner and contractor to use materials and construction techniques that will minimize the possibility of damage or danger to other property, public or private, or to persons on the beach or adjacent properties. It shall be the responsibility of the property owner to maintain such structures in a manner so as to prevent their floating or washing away and endangering other persons or property.

(4) No seawalls or bulkheads shall be constructed within the Beach Management Overlay Zoning District and the areas between this district and the first public street right-of-way running parallel to the beachfront.

(5) Revetments located landward of the OCRM baseline may be permitted by the Edisto Beach Building Code Administrator subject to this section. Revetments must be designed by a registered professional coastal engineer and the design must be certified by the engineer not to accelerate erosion where installed or on adjacent or downdrift lots. The following conditions must be met:

a. The design and construction of revetments must be approved by all property owners within the groin compartment in which the revetment is to be constructed and their written permission secured before proceeding with construction of the revetment;

b. The applicant for the permit shall be each property owner on which any portion of the revetment is to be constructed;

c. No revetment will be constructed on greater than a 1:2 slope. The base of the revetment will extend from minus one foot NGVD to plus seven feet NGVD;

d. The revetment must be continuous between groins or existing bulkheads;

e. The revetment armor layer shall be stone large enough to resist displacement by wave action. Minimum weight range shall be 150 to 2,000 pounds. Layer shall be three feet thick minimum;

f. The bedding stone weight shall be in the 25-pound to 150-pound range. Layer shall be one foot thick minimum;

g. The base of the revetment shall be woven synthetic geotextile cloth.

(6) For purposes of this article, the term "revetment" shall mean a sloping structure built along an escarpment or in front of a bulkhead to protect the shoreline or bulkhead from erosion.

(7) Nothing in this article shall prohibit the erection of sand fences on the beach or dunes, or the planting of vegetation, e.g. sea oats, for the purpose of protection of and building the dune structure.

(8) This article shall not prohibit the ability of the town to issue valid emergency orders in accordance with its terms in order to re-nourish and/or protect beachfront building, structures and property as a result of erosion during and after storm events.

(h) Copies of the flood insurance rate maps indicated below with dates as indicated, for the town, prepared by the National Flood Insurance Program and the Federal Emergency Management Agency, copies of which are on file in the Town Hall:

Map Number	Date
45029C0689 F	November 7, 2001
45029C0693 F	November 7, 2001
45029C0694 F	November 7, 2001
45029C0726 F	November 7, 2001
45029C0727 F	November 7, 2001
45029C0731 F	November 7, 2001

(i) Non-conforming buildings or uses may not be enlarged, replaced, or rebuilt unless such an enlargement or reconstruction is accomplished in conformance with the provisions of this article. Provided, however, nothing in this article shall prevent the repair, reconstruction, or replacement of an existing building or structure located totally or partially within the floodway, provided that the bulk of the building or structure below base flood elevation in the floodway is not increased and provided that such repair, reconstruction, or replacement meets all other requirements of this article. For all improvements and additions to a non-conforming structure that was constructed subsequent to the initial adoption of this article which do not constitute substantial improvement shall be required to meet the flood elevations and other flood construction standards in place at the time the structure was constructed. However, the foundation and anchoring of an addition to any structure located in a "V" flood zone shall be certified by a professional engineer.

(j) When substantial improvement occurs, the entire structure must be made to comply with the current requirements of a newly constructed structure in accordance with Article IV, Flood Damage Prevention Ordinance.

(k) Federally funded development. The president issued Executive Order 11988 , Floodplain Management, May, 1977. E.O. 11988 directs federal agencies to assert a leadership role in reducing flood losses and losses to environmental values served by floodplains. Proposed developments must go through an eight-step review process. Evidence of compliance with the executive order must be submitted as part of the permit review process.

(Ord. of 11-8-07(1))

Sec. 14-115. - Miscellaneous provisions.

(a) In riverine situations, adjacent communities and the state coordinating office shall be notified prior to any alteration or relocation of a watercourse. Copies of such notifications shall be submitted to the Federal Emergency Management Agency.

(b) It shall be assured that the flood-carrying capacity within the altered or relocated portion of any watercourse is maintained.

(1) In addition to the notifications required watercourse alterations per these revisions, written reports of maintenance records must be maintained to show that maintenance has been provided within the altered or relocated portion of said watercourse so that the flood-carrying capacity is not diminished. This maintenance must consist of a comprehensive program of periodic inspections, and routine channel clearing and dredging, or other related functions. The assurance shall consist of a description of maintenance activities, frequency of performance, and the local official responsible for maintenance performance. Records shall be kept on file for FEMA inspection.

(2) If the proposed project will impact the configuration of the watercourse, floodway, or base flood elevation for which a detailed flood insurance study has been developed, the applicant shall apply for and must receive approval for a conditional letter of map revision with the Federal Emergency Management Agency prior to the start of actual construction.

(3) Within 60 days of completion of an alteration of a watercourse, referenced in the certification requirements of these regulations, the applicant shall submit an as-built certification by a registered professional engineer, to the Federal Emergency Management Agency.

(c) Should there be any conflict between the provisions of this article and other laws, regulations, ordinances, or codes of the town, the provisions of the stricter shall prevail.

(d) The building codes administrator is authorized and directed to make periodic inspections of improvements within the town that may be subject to the terms of this article. Whenever necessary to make an inspection to enforce any provision of this article, the building codes administrator may enter buildings or premises as outlined in the building codes adopted in section 14-31, "Right of entry". If the building codes administrator discovers changes in the nature or scope of the work made subsequent to any final inspection, or without obtaining a building permit, and which constitute a violation of this article, or of the codes, the building codes administrator shall have all of the enforcement authority given by this article or by the codes and, in addition, the authority to revoke the certificate of occupancy. If the changes or construction were performed by a contractor authorized to do business within the town or by a subcontractor, the building codes administrator shall give notice of such fact to the administrator; and the administrator shall forthwith suspend the business license of the contractor or subcontractor for 30 days for the first offense, 90 days for a second offense, and one year for a third and subsequent offense.

(e) Section 1316 of the National Flood Insurance Act of 1968 provides that no new flood insurance shall be provided for any property found by the Federal Emergency Management Agency to have been declared by a state or local authority to be in violation of state or local ordinances. If property is declared to be in violation and does not bring itself into compliance, the building codes administrator shall notify the administrator of the Federal Emergency Management Agency; and the administrator, upon due findings, will take appropriate action listed below:

(1) *Denial of flood insurance coverage.*

a. No new flood insurance shall be provided for any property that the administrator finds has been declared by a duly constituted state or local zoning authority or other authorized public body to be in violation of state or local laws, regulations or ordinances that are intended to discourage or otherwise restrict land development or occupancy in flood prone areas.

b. New and renewal flood insurance shall be denied to a structure upon a finding by the administrator of a valid declaration of a violation.

c. The town shall determine whether to submit a declaration to the administrator for the denial of insurance.

d. A valid declaration shall consist of:

1. The name of the property owner and address or legal description of the property sufficient to confirm its identity and location;
2. A clear and unequivocal declaration that the property is in violation of a cited state or local law, regulation or ordinance;
3. A clear statement that the public body making the declaration has authority to do so and a citation to that authority;
4. Evidence that the property owner has been provided notice of the violation and the prospective denial of insurance; and
5. A clear statement that the declaration is being submitted pursuant to Section 1316 of the National Flood Insurance Act of 1968, as amended.

(2) *Restoration of flood insurance coverage.*

a. Insurance availability shall be restored to a property upon a finding by the administrator of a valid rescission of a declaration of a violation.

b. A valid rescission shall be submitted to the administrator and shall consist of:

1. The name of the property owner and an address or legal description of the property sufficient to identify the property and to enable Federal Emergency Management Agency to identify the previous declaration;
2. A clear and unequivocal statement by an authorized public body rescinding the declaration and giving the reason for the rescission;
3. A description of and supporting documentation for the measures taken in lieu of denial of insurance in order to bring the structure into compliance with the local floodplain management regulations; and
4. A clear statement that the public body rescinding the declaration has the authority to do so and a citation to that authority.

(f) *Annexations and detachments.* Notify the South Carolina Department of Natural Resources Land, Water and Conservation Division, within six months, of any annexations or attachments that include special flood hazard areas. The community must incorporate applicable maps from surrounding jurisdictions into this ordinance within 90 days of date of the annexation.

(g) *Use of best available data.* When base flood elevation data or floodway data has not been provided in accordance with these regulations, obtain, review, and reasonably utilize best available base flood elevation data and floodway data available from a federal, state, or other source, including data developed pursuant to the standards for subdivision proposals outlined in these regulations, in order to administer the provisions of this article. Data from preliminary, draft, and final flood insurance studies constitutes best available data from a federal, state, or other source. Data must be developed using hydraulic models meeting the minimum requirement of NFIP approved mode. If an appeal is pending on the study in accordance with 44 CFR Ch. 1, Part 67.5 and 67.6, the data does not have to be used.

(Ord. of 11-8-07(1))

Sec. 14-116. - Violations; penalties.

Any violation of this article shall be deemed to be a misdemeanor punishable in accordance with section 1-6.

(Ord. of 11-8-07(1))

Secs. 14-117—14-140. - Reserved.

DIVISION 2. - SUBDIVISIONS AND UTILITIES

Cross reference— Utilities, ch. 82; zoning, ch. 86.

Sec. 14-141. - Regulated.

(a) Subdivision proposals as well as other proposed development shall be reviewed to determine whether such proposals will be reasonably safe from flooding. If a subdivision proposal or other proposed new development is in a flood prone area, any such proposals shall be reviewed to assure that:

  (1) All such proposals are consistent with the need to minimize flood damage within the flood prone area.

  (2) All public utilities and facilities, such as sewer, gas, electrical and water systems, are located and constructed to minimize or eliminate flood damage.

  (3) Adequate drainage is provided to reduce exposure to flood hazards.

(b) Proposed development shall be reviewed to assure that all necessary permits have been received from those governmental agencies from which approval is required by federal or state law.

(c) All subdivision proposals and other proposed new developments greater than 50 lots or five acres, whichever is the lesser, shall include within such proposals base flood elevation data.

(d) New and replacement water supply systems within flood prone areas shall be designed to minimize or eliminate infiltration of floodwaters into the systems.

(e) Within flood prone areas:

  (1) New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into the systems and discharges from the systems into floodwaters as approved by SC DHEC.

  (2) On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding.

(f) An evacuation plan indicating alternate vehicular access and escape routes shall be filed with appropriate disaster preparedness authorities for mobile home parks and mobile home subdivisions located within flood zones.

(Ord. of 11-8-07(1))

Secs. 14-142—14-160. - Reserved.

DIVISION 3. - MANUFACTURED HOMES

Cross reference— Zoning, ch. 86.

Sec. 14-161. - Regulated.

(a) All existing manufactured homes within flood zones shall be anchored to resist flotation, collapse or lateral movement by providing over-the-top and frame ties to ground anchors. Specific requirements shall be that:

  (1) Over-the-top ties be provided at each of the four corners of the manufactured home, with two additional ties per side at intermediate locations, and manufactured homes less than 50 feet long requiring one additional tie per side.

  (2) Frame ties be provided at each corner of the home with five additional ties per side at intermediate points and manufactured homes less than 50 feet long requiring four additional ties per side.

(3) All components of the anchoring system be capable of carrying a force of 4,800 pounds.

(4) Any additions to the manufactured home be similarly anchored.

(b) For new manufactured home parks and manufactured home subdivisions within zones A1—30:

(1) Manufactured homes shall not be permitted except in approved mobile home parks or as temporary structures as defined by the zoning ordinance.

(2) Stands or lots shall be elevated on compacted fill or on pilings so that the lowest floor of the manufactured home will be at least one foot above the base flood elevation.

(3) Adequate surface drainage and access for a hauler shall be provided.

(4) In the instance of elevation on pilings, lots shall be large enough to permit steps, pilings foundations shall be placed in stable soil no more than ten feet apart, and reinforcement shall be provided for piers more than six feet above ground level.

(5) Manufactured homes that are placed or substantially improved on sites outside a manufactured home park or subdivision, in a new manufactured home park or subdivision, in an expansion to an existing manufactured home park or subdivision, or in an existing manufactured home park or subdivision on which a manufactured home has incurred "substantial damage" as the result of a flood, must be elevated on a permanent foundation such that the lowest floor of the manufactured home is elevated no lower than one foot above the base flood elevation and be securely anchored to an adequately anchored foundation system to resist flotation, collapse, and lateral movement.

(6) Manufactured homes that are to be placed or substantially improved on sites in an existing manufactured home park or subdivision that are not subject to the provisions for residential construction in these regulations of this article must be elevated so that the lowest floor of the manufactured home is elevated no lower than one foot above the base flood elevation, and be securely anchored to an adequately anchored foundation to resist flotation, collapse, and lateral movement.

(7) Manufactured homes shall be anchored to prevent flotation, collapse, or lateral movement. For the purpose of this requirement, manufactured homes must be anchored to resist flotation, collapse, or lateral movement in accordance with Section 19-425.39 of the South Carolina Manufactured Housing Board Regulations, effective date May 25, 1990, as amended. Additionally, when the elevation requirement would be met by an elevation of the chassis at least 36 inches or less above the grade at the site, reinforced piers or other foundation elements of at least equivalent strength shall support the chassis. When the elevation of the chassis is above 36 inches in height, an engineering certification is required.

(Ord. of 11-8-07(1))

Secs. 14-162—14-180. - Reserved.

DIVISION 4. - DEVELOPMENT IN "A" ZONES

Sec. 14-181. - Regulated.

(a) All new construction and substantial improvements (including the placement of prefabricated buildings or manufactured homes) of residential structures within "A" zones on the community's flood insurance rate map shall have the lowest floor (including basement) elevated to or above the base flood level.

(b) All new construction and substantial improvements of non-residential structures within "A" zones on the community's flood insurance rate map shall:

(1) Have the lowest floor (including basement) elevated at least one foot above the base flood level;

(2) Together with attendant utility and sanitary facilities, be designed so that below the base flood level the structure is watertight with walls substantially impermeable to the passage of water and

with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy; or

(3) Be constructed so as to use vents below the base flood elevation; no breakaway walls may be constructed below the base flood elevation in the "A" zone.

(c) Where flood proofing is utilized for a particular structure, a registered professional engineer or architect licensed in the state shall certify that the flood proofing methods are adequate to withstand the flood depths, pressures, velocities, impact and uplift forces and other factors associated with the base flood; and a record of such certificates indicating the specific elevation (in relation to mean sea level) to which such structures are flood proofed shall be maintained with the building inspector.

(d) In "A" zones, minimum depth of pilings and support of same shall be as follows:

(1) Pilings at least eight inches by eight inches square in dimension shall be placed under any part of a roofed structure. Pilings at least six inches by six inches square in dimension shall be placed under any part of a deck or porch without a roof. Pilings under steps or landings shall be at least four inches by four inches square in dimension. All pilings shall be LP-2 or greater and set a minimum of 36 inches below the average level or surrounding surface.

(2) Pilings will be placed upon at least three inches thick mud sill and attached via L-brackets or other approved means as designated by the building inspector, or on square two feet by two feet pallets consisting of LP22 penetrated wood held together with rustproof nails or bolts. Piles shall be attached to pallets with 40 penny or larger rustproof nails with at least two nails in each side; or with at least two-eights inch or larger L-brackets using galvanized lag screws three-eighths inch by two inches larger or other approved means accepted by the building inspector.

(3) Super-structures shall be adequately anchored to foundations to meet the requirements specified, i.e., hot dip galvanized bolts through joists and piles one-half inch or larger with flat washers and nuts, or L-brackets one-fourth inch thick by one inch wide by eight inches long or larger attached to piles and joists with hot dip galvanized lag screws three-eighths inch by three inches or larger or other approved means.

(4) When pilings are driven or washed in "A" zones, the allowable lateral load capacity shall be considered to be half the test load (applied laterally) which causes a deflection of one-half inch at the ground line and a 75 percent recovery.

(e) Fill in "A" flood zones shall be limited as follows:

(1) Fill may not be placed in the floodway unless it is demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment would not result in any increase in the flood levels during the occurrence of the base flood. Such certification and technical data shall be presented to the building codes administrator;

(2) Fill may not be placed in tidal or non-tidal wetlands without the required state and federal permits;

(3) Fill must consist of soil and rock materials only. Dredged material may be used as fill only upon certification of suitability by a registered professional geotechnical engineer. Landfills, rubble fills, dumps, and sanitary fills are not permitted in the floodplain;

(4) Fill used to support structures must comply with ASTM Standard D-698, and its suitability to support structures certified by a registered, professional engineer;

(5) Fill slopes shall be no greater than two horizontal to one vertical. Flatter slopes may be required where velocities may result in erosion. A statement signed by a state of South Carolina registered engineer or land surveyor certifying compliance with this section shall be provided to the building codes administrator upon completion of the fill; and,

(6) Where fill is used in "A-E" flood zones, a State of South Carolina registered professional engineer shall be required to certify it does not increase the potential for flooding of streets, roads, structures, etc., nor cause drainage problems on neighboring properties.

(Ord. of 11-8-07(1))

Secs. 14-182—14-200. - Reserved.

DIVISION 5. - DEVELOPMENT IN "V" ZONES AND OCEANFRONT BUILDING SITES

Sec. 14-201. - Regulated.

(a) All new construction and substantial improvements in a "V" zone shall be supported on adequately anchored piles or columns so that the lowest portion of the structural members of the lowest floor (excluding the piles or columns) is elevated at least one foot above the base flood level, and a registered professional engineer or architect shall certify that the structure is securely anchored to adequately anchored pilings or columns in order to withstand velocity waters and hurricane wave wash. All "V" zone foundation plans shall be designed by a structural architect or engineer licensed by the state, and shall bear his seal. Such foundations in the "V" zone shall extend down vertically below a grade of sufficient depth and the zone of potential scour, and securely anchored to the subsoil strata. Soil conditions may require a depth greater than that indicated above to meet design load requirements as required by Chapter 18 of the International Building Code. All piles or columns shall be free of obstructions so that the impact of abnormally high tides or wind-driven water is minimized.

(b) All new construction within "V" zones shall be located landward of the reach of mean high tide. Manufactured homes are not allowed in "V" zones except as allowed in division 6 of this article for temporary uses.

(c) The use of fill for structural support of buildings within "V" zones is prohibited. Non-compacted fill may be used around the perimeter of a building for landscaping/aesthetic purposes provided the fill will wash out from storm surge, thereby rendering the building free of obstruction prior to generating excessive loading forces, ramping effects, or wave deflection. Only beach compatible sand may be used. The building codes administrator shall approve design plans for landscaping/aesthetic fill only after the applicant has provided an analysis by an engineer, architect, and/or soil scientist, which demonstrates that the following factors have been fully considered:

    (1) Particle composition of fill material does not have a tendency for excessive natural compaction;

    (2) Volume and distribution of fill will not cause wave deflection to adjacent properties; and,

    (3) Slope of fill will not cause wave run-up or ramping.

(d) Manmade alteration of sand dunes within "V" zones that would increase potential flooding is prohibited. Where sand dunes located in the ocean front lots are altered, a State of South Carolina registered professional engineer shall be required to certify it does not increase the potential for flooding of streets, roads, structures, etc., nor cause drainage problems on neighboring properties.

(e) With the exception of recreational piers, groins, seawalls, etc., all construction permitted under various town regulations, ordinances and codes within the extra-hazardous, oceanfront zones where velocity and flood hazards are combined shall:

    (1) Not include any manufactured homes other than campers, travel trailers, or approved temporary construction trailers capable of immediate removal when storm warnings are in effect.

    (2) Have no walls, basements or habitable areas below the flood level and have the space below the required elevation and natural ground level free of obstructions so that the impact of a normally high tide combined with wind-driven water is minimized, except where allowed in division 6 of this article.

(Ord. of 11-8-07(1); Ord. No. 2011-04, 2-10-11)

Secs. 14-202—14-220. - Reserved.

DIVISION 6. - STANDARDS FOR USES BELOW THE BASE FLOOD ELEVATION

Sec. 14-221. - Generally.

(a) Notwithstanding any of the provisions of this article, construction of the following are not subject to the provisions of this article even though located within flood danger areas and below base flood elevations:

(1) Boat docks.

(2) Launching ramps.

(3) Piers (except as outlined in subsection 14-114(g)).

(4) Bulkheads (except as outlined in subsection 14-114(g)).

(5) Seawalls (except as outlined in subsection 14-114(g)).

(6) Construction which is not both walled and roofed.

(7) Elevator shafts.

(8) Stairwell (provided guidelines of the building code are observed).

(9) Temporary structures such as construction trailers or other approved uses if they are placed on a site for less than 180 days provided a permit is issued with the condition that the temporary structure shall be removed from the town limits a minimum of 72 hours in advance of landfall of a hurricane and the permittee provides written evidence that he has available when needed equipment necessary for the removal of the temporary structure and he further designates a location outside the town limits to which the temporary structure will be moved.

(b) Residential buildings in "A" flood zones may have limited storage areas, areas used for the parking of vehicles, provided the following conditions are observed:

(1) The floor of an attached or unattached, unfinished enclosed garage or storage area shall not exceed 600 square feet.

(2) The floor of an unfinished garage used for parking vehicles and storing articles and maintenance equipment used in connection with the premises but not attached to the building may be treated or used as a limited storage area, provided the walls of the unfinished enclosed areas are constructed with openings to facilitate the unimpeded movement of floodwaters or the walls are breakaway walls. Fully enclosed areas below the lowest floor for all new construction and substantial improvements shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a registered professional engineer or architect or meet or exceed the following minimum criteria: A minimum of two openings having a total net area of no less than one square inch for every square foot of enclosed area subject to flooding shall be provided. The bottom of all openings shall be no higher than one-foot above grade. Openings may be equipped with screens, louvers, valves, or other coverings or devices provided that they permit the automatic entry and exit of floodwaters. Parallel sheer walls, open lattice walls, discontinuous foundation walls or combinations of both may be utilized.

(3) Space below the lowest supporting member must be open so as to not impede the flow of water. Walls below the base flood elevation in "A" zones made of insect screening or open wood constructed lattice work may be permitted for aesthetic purposes only and must be designed to wash away in the event of abnormal wave action. Prior to construction, plans for any structures that will have lattice work or decorative screening must be submitted to the building codes administrator.

(4) Enclosed areas shall not be flood proofed for residential buildings.

(c) Non-residential buildings in "A" flood zones may have walls, basements, utility and sanitary facilities as well as habitable areas below the 100-year flood level provided the enclosure is specifically designed and constructed for flood proofing by a state-registered architect or engineer.

(d) Under the floor of buildings, enclosed crawl spaces below the 100-year flood level in the "A" flood zones shall be drained to discharge onto adjacent grade or into an approved drainage system.

(e) The floor of an unfinished enclosed area at ground level or above which is a crawl space, or space within foundation walls, usable as areas for building maintenance, access, or storing of articles and maintenance equipment (not attached to the building) used in connection with the premises shall be allowed in "A" zones provided the walls of the unfinished enclosed areas are constructed with openings as defined in subsection (b)(2) of this section.

(f) Only flood resistant materials shall be used below one-foot above the 100-year flood level.

(g) Mechanical or utility equipment such as electrical outlets, automatic washers, dryers, air conditioning equipment, heating equipment, hot water tank, second refrigerator in storage room or garage for cold storage, and bathrooms shall not be located below one-foot above the 100-year flood level.

(h) All air ducts, large pipes and storage tanks located at or below the flood level shall be firmly anchored to prevent flotation and designed to prevent water from entering components. Tanks shall be vented at a location above flood level.

(i) Electric meters may be located below the 100-year flood level in "A" or "V" zones but shall be located at the highest elevation possible to accomplish the requirement of minimizing or eliminating flood damage and still meet the utility company's requirement to service the meter.

(j) In "V" zones and oceanfront building lots, breakaway walls to enclose storage areas or garages shall be permitted below base flood elevation. The attached or unattached, unfinished enclosed area shall be less than 300 square feet. All breakaway walls shall be constructed in accordance with design documents prepared by a structural architect or engineer licensed by the state. A "breakaway V zone pre-construction design certificate" shall accompany the construction documents indicating a safe loading resistance of not less than ten and no more than 20 pounds per square foot. The design documents and certificate shall bear the designer's seal and signature. No plumbing pipes, gas piping, electric wires, or other equipment shall be run or mounted on or in the breakaway wall or in any way impede or prevent breakaway of the wall under the designated load.

(k) Space below the lowest supporting member must be open so as to not impede the flow of water. Walls below the base flood elevation in "V" zones made of insect screening or open wood constructed lattice work may be permitted for aesthetic purposes only and must be designed to wash away in the event of abnormal wave action. Prior to construction, plans for any structures that will have lattice work or decorative screening must be submitted to the building codes administrator for approval.

(l) All construction materials used below the base flood elevation shall be flood resistant, treated or decay resistant.

(Ord. of 11-8-07(1))

Secs. 14-222—14-240. - Reserved.

DIVISION 7. - APPEALS AND VARIANCE PROCEDURES

Sec. 14-241. - Generally.

(a) Town council is designated to hear and decide appeals and requests for variances from the requirements of this article.

(b) Town council shall hear and decide appeals when it is alleged there is an error in any requirement, decision or determination made by the building inspector in the enforcement or administration of this article.

(c) The notice of appeal or request for variance must be specific as to the relief sought and must be fully documented, setting forth the technical reasons why proper elevations cannot be met.

(d) Variances must be considered on a case-by-case basis, and no requests for multi-lot, subdivision or variances for more than one structure may be considered.

(e) Conditions for variances are as follows:

(1) Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief;

(2) Variances shall only be issued upon a showing of good and sufficient cause; a determination that failure to grant the variance would result in exceptional hardship to the applicant; and a determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, or extraordinary public expense; create nuisance; cause fraud on or victimization of the public; or conflict with existing local laws or ordinances.

(f) In passing upon such applications, the council shall consider all technical evaluations, all relevant factors, all standards specified in other sections of this article, and:

(1) The danger that materials may be swept onto other lands to the injury of others;

(2) The danger to life and property due to flooding or erosion damage;

(3) The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;

(4) The importance of the services provided by the proposed facility to the community;

(5) The necessity to the facility of a waterfront location, where applicable;

(6) The availability of alternative locations, not subject to flooding or erosion damage, for the proposed use;

(7) The compatibility of the proposed use with existing and anticipated development;

(8) The relationship of the proposed use to the comprehensive plan and floodplain management program for that area;

(9) The safety of access to the property in times of flood for ordinary and emergency vehicles;

(10) The expected heights, velocity, duration, rate of rise and sediment transport of the floodwaters and the effects of wave action, if applicable, expected at the site; and

(11) The costs of providing governmental services during and after flood conditions, including maintenance and repair of public utilities and facilities such as sewer, gas, electrical and water systems, and streets and bridges.

(g) Upon consideration of the factors listed above and the purposes of this article, the council may attach such conditions to the granting of variances as it deems necessary to further the purposes of this article.

(h) Variances may be issued for new construction and substantial improvements and for other development necessary for the conduct of functionally dependent uses. However, all variance criteria must be met, and the structures or other development must be protected by methods that minimize flood damages during the base flood.

(i) In the event of action or threatened action under 44 CFR 59.24(b) to suspend the eligibility of the town from the benefits of the National Flood Insurance Program, the council may, after reasonable notice to the grantee or his successor in interest of any variance from the terms of this article, revoke such variance and require the grantee or his successor in interest to remove the non-conforming improvement. By making application for a variance, the applicant acknowledges that he understands that any variance granted hereunder is revocable and that no claim or cause of action will be asserted against the town for losses, if any, arising from the revocation of any such variance.

(j) Any applicant to whom a variance is granted shall be given written notice signed by the presiding officer at the variance hearing, specifying the difference between the base flood elevation and the elevation to which the structure is to be built and stating that the cost of flood insurance will be

commensurate with the increased risk resulting from the reduced lowest flood elevation. This notice shall also invite the attention of the applicant to the provisions of section 14-221 et seq. A copy of this letter will be retained with the permanent records of the town.

(k) The building codes administrator shall maintain the records of all appeal actions and report any variances to the Federal Emergency Management Agency in the town's annual report to the administrator.

(Ord. of 11-8-07(1))

Secs. 14-242—14-270. - Reserved.

ARTICLE IV. - STORMWATER MANAGEMENT

Sec. 82-276. - Title, purpose and goals.

(a) This article shall be known as the Storm water Management Ordinance for the Town of Edisto Beach, South Carolina.

(b) The town town council makes the following findings: Municipalities are subject to the Federal Clean Water Act of 1972, and the Coastal Zone Management Act adopted by South Carolina in 1977 and the National Pollutant Discharge Elimination System (NPDES) Storm water Program of October 1990 which is administered in South Carolina by DHEC. Inadequate management of storm water runoff from development in a watershed increases flood flows and velocities, erodes and/or silts stream channels, pollutes water, overloads existing drainage facilities, reduces groundwater recharge, and threatens public health and safety. The potential impacts of these pollutants and higher velocities include:

(1) Changing natural ecosystems through sediment and pollutant deposits that affect the quantity and quality of water flowing, the destruction of habitats, and the loss of plant and animal life;

(2) Posing significant health risks through increased bacteria;

(3) Accelerating eutrophication of receiving waters by introducing excessive nutrient loads;

(4) Increasing metal deposits creating toxicity for aquatic life;

(5) Reducing oxygen levels because of oil, grease and organic matter; and

(6) Affecting animal and plant life, adversely, due to changing temperatures of receiving waters.

Uncontrolled storm water drainage can increase the incidence of flooding and the level of floods which occur, endangering roads, other public and private property and human life. Altered land surfaces can change the rate and volume of runoff, which may result in the following:

(1) Erosion and slumping of stream banks, resulting in widening of streams;

(2) Undercut root systems;

(3) Increased erosion rates; and

(4) Uniform and shallow streambeds, providing less varied aquatic habitats.

Adverse water quality and quantity consequences described above may result in substantial economic losses, including, but not limited to, increased wastewater treatment costs, diminished property values, increased flood damages, as well as state and federal fines associated with water quality violations. Many future problems can be avoided through proper storm water management whereby a comprehensive and reasonable program of regulations and education is fundamental to the public health, safety, and welfare and to the protection of the citizenry and environment. Current and anticipated growth will contribute to and increase the need for improvement and maintenance of the storm water system.

This article is intended to manage the manner in which storm water is addressed in areas of new development and redevelopment through the course of construction and post-construction, and to address pollution prevention to maintain or benefit water quantity, water quality and the effects on the quality of life

and character of the Town of Edisto Beach, South Carolina. This article sets general policy and storm water management program direction.

The town council finds evidence that the development and implementation of a reliable SWMP to best serve the citizens of the town will require that all sources of pollution that are carried with storm water runoff be identified, quantified and analyzed to implement an effective SWMP pollution control and abatement plan to protect the surface and groundwater's within the town; and

The town council affirms its responsibility to maintain existing water quantity and quality management facilities of all natures in the town and establish future water quantity and quality management facilities and measures that will ensure that as growth occurs and the population density increases, the town's sensitive environment and ecosystems are protected for future generations.

(c) The central environmental goal of the town is to preserve water quality and the natural ecological functions of the surface water located within the town limits and to efficiently manage excess storm water. In order to meet this important goal, the town storm water management ordinance will be adopted for the following purposes:

(1) To regulate new and existing structures, new and existing developments, and reconstruction activities consistent with State of South Carolina requirements and the town's requirements.

(2) To establish the authority of the town to administer and enforce storm water quantity and quality regulations to include, but not limited to: limiting impervious surface, improvements on development and redevelopment and landscaping requirements.

(3) To create public education programs so the citizens of the town will have knowledge of how to reduce and prevent pollution of all natural resources from their land, homes, and businesses.

(Ord. of 8-9-07(1), § 1(1))

Sec. 82-278. - Definitions and abbreviations used within this article.

For the purpose of this article, unless specifically defined below, words or phrases shall be interpreted so as to give them the meaning they have in common usage and to give this article it's most effective application. Words in the singular shall include the plural, and words in the plural shall include the singular. Words used in the present tense shall include the future tense. The word "shall" connotes mandatory and not discretionary; the word "may" is permissive.

The following definitions shall apply in the interpretation of this article unless specifically stated otherwise:

100-year flood event. See Base flood.

Appeal shall mean a request for a review of the building code administrator interpretation of any provision of these regulations.

Area of environmental concern shall mean a critical area identified by the State of South Carolina as environmentally fragile and economically important where uncontrolled or incompatible development could result in irreversible damage.

Built-upon area shall mean that portion of an individual development project that is covered by impervious or partially impervious cover including buildings, pavement, recreation facilities, roads and parking areas, etc. Wood slatted decks and the water area of a swimming pool are not considered to be built-upon area.

Base flood means the flood having a one percent chance of being equaled or exceeded in any given year. While this statistical event may occur more frequently, it may also be known as the "100-year flood event".

BMP shall mean "best management practices" as adopted by the Town of Edisto Beach.

Blue line streams means streams that are represented on the United States Department of the Interior Geological Survey (USGS) 1:24,000 quadrangle maps.

Channel means a natural or artificial watercourse of perceptible extent, with definite bed and banks to confine and conduct continuously or periodically flowing water. Channel flow is that water which is flowing within the limits of the defined channel.

Coastal wetland shall mean any salt marsh or other marsh subject to regular or occasional flooding by tides, including wind tides (whether or not the tide waters reach the marshland areas through natural or artificial watercourses), provided this shall not include hurricane or tropical storm tides. Coastal wetlands contain some, but not necessarily all, of ten indigenous wetland plant species.

CZMA shall mean Coastal Zone Management Act, which was adopted by South Carolina in 1977. The Act established a comprehensive regional resource management program and created a state coastal zone management agency called the South Carolina Coastal Council, now known as the department of health and environmental control office of ocean and coastal resource management (DHEC/OCRM). As part of its authority, the coastal council was given jurisdiction over the state's beaches.

Developer means any individual, firm, corporation, association, partnership, or trust involved in commencing proceedings to effect development of land. This includes any legal or engineering representative of the "developer".

Development shall mean any land disturbing activity that increases the amount of built-upon area or that otherwise decreases the infiltration of precipitation into the soil. Any manmade change to improved or unimproved real estate, including but not limited to, buildings or other structures, mining, dredging, filling, grading, paving, excavating, drilling operations, or permanent storage of materials (as defined as materials of like nature stored in whole or in part for more than six months).

Erosion shall mean the wearing away of land surface by the action of wind, water, gravity or any combination thereof.

Erosion and sediment control plan shall mean a written plan including drawings or other graphic representations for the control of soil erosion and sedimentation resulting from a land disturbing activity.

Estuarine shoreline shall mean a non-ocean shoreline connected to the estuarine waters that are especially vulnerable to erosion, flooding, and other adverse effects of wind and water. Estuarine shorelines extend from the mean high water level (in areas of tidal influence) or normal water level (in areas without tidal influence) along the estuaries, sounds, bays, and brackish waters for a distance of 75 feet landward unless otherwise set by the DHEC.

Estuarine waters shall mean all the water of the Atlantic Ocean within the boundary of South Carolina and all the waters of the bays, sounds, rivers, and tributaries thereto seaward of the dividing line between coastal fishing waters, as set forth in the most recent official published agreement adopted by the department of natural resources and DHEC.

Existing development shall mean any land that has been utilized for a land-disturbing activity as of the effective date of this article.

Illegal discharge shall mean any direct or indirect non-storm water discharge to the storm drain system except as defined in section 82-282(c).

Illicit connections shall mean either of the following:

(1) Any drain or conveyance, whether surface or subsurface, which allows an illegal discharge to enter the storm drain system including but not limited to any conveyances which allow any non-storm water discharge including sewage, process wastewater, and wash water to enter the storm drain system and any connections to the storm drain system from indoor drains and sinks, regardless of whether said drain or connection had been previously allowed, permitted, or approved by a government agency; or

(2) Any drain or conveyance connected from a commercial, residential or industrial land use to the storm drain system that has not been documented in plans, maps, or equivalent records and approved by the town.

Impervious surfaces means that portions of real property which is modified by use of a hard surface or covered by a structure which either prevents the entry of water into the soil mantle or retards the entry of water into the soil mantle to a greater extent than would have existed under natural conditions prior to application of the hard surface or coverage by a structure, or causes water to run off the surface in greater quantities or at an increased flow rate from the quantity or flow rate under natural conditions.

Improved lands for the purposes of this article shall mean any lands that have had land-disturbing activities that altered or changed the natural cover or topography of said land.

Infiltration system shall mean a storm water treatment system designed to allow runoff to pass or move (infiltrate) into the soil.

Land-disturbing activity shall mean any use of the land by any person in residential, industrial, educational, institutional or commercial development, highway and road construction and maintenance that results in a change in the natural cover or topography and that may cause or contribute to sedimentation.

New development shall mean any land that is utilized for a land-disturbing activity after the effective date of this article.

NPDES shall mean the "National Pollutant Discharge Elimination System" permitting process of the Environmental Protection Agency (EPA) and DHEC.

Ocean hazard area shall mean an area where there exists a substantial possibility of excessive erosion and shoreline fluctuation. The seaward limit of this boundary is the mean low water line.

Protected waters shall mean tidal saltwater of the classifications ORW, SFH or SA that are suitable for commercial shell fishing, swimming, and all other tidal saltwater uses.

Redevelopment shall mean any rebuilding activity that exceeds 50 percent of the tax value of the structure (as determined by the building inspection department), and that has no net increase in built-upon area or that provides equal or greater storm water controls than the previous development. All building or rebuilding activity occurring or that has occurred within 60 months preceding the date of application submittal shall be added together to determine if the percentage value exceeds 50 percent of the tax value.

Sedimentation shall mean the deposition of solid material, both mineral and organic, that has been transported from its site of origin by air or water.

Sedimentation/erosion control plan shall mean a plan required by DHEC in which developers must describe the sedimentation and erosion control devices they will use for land disturbing activities that are one acre or greater.

Sewage or septage shall mean the liquid and solid human body waste and liquid waste generated by water-using fixtures and appliances including those associated with food handling.

SCDHEC shall mean the South Carolina Department of Health and Environmental Control (DHEC).

Storm water shall mean the flow of water that results from precipitation and that occurs immediately following rainfall or a snowmelt.

Storm water collection system shall mean any ditch, conduit, pipe, channel, curb or gutter utilized for the primary purpose of transporting (not treating) runoff.

SWMP is the most currently adopted "Storm water Management Plan" for the Town of Edisto Beach.

State certification shall mean required approval and permit documents by DHEC/OCRM.

Surface waters shall mean rivers, streams, creeks, channels, lakes, reservoirs, ponds, drainage systems, springs, wetlands, wells, the Atlantic Ocean, and other bodies of surface or subsurface water, natural or artificial, lying within or forming part of the boundaries of the town. This term excludes privately owned ponds that have no entry or exit of water to or from waters of public domain.

Unimproved land for the purposes of this article shall mean any land that has not had land-disturbing activities as described herein.

10-year, 24-hour storm shall mean the storm of the largest intensity expected to occur on the average once every ten years and of a 24-hour duration.

Vegetative filter shall mean an area of natural or planted vegetation through which storm water flows in a diffuse manner so that runoff does not become channeled and that provides for control of storm water runoff through infiltration or filtering of pollutants. The defined length of the filter shall be provided for the direction of storm water flow.

Wet detention pond shall mean a structure that provides for storage and treatment of runoff and includes a permanent pool of water under normal circumstances.

(Ord. of 8-9-07(1), § 1(2))

Sec. 82-278. - Jurisdiction.

The regulations contained herein shall govern all real property and each and every storm water quantity and quality management device within the town. Whenever conflicts exist among federal, state, or local laws and this article, the more restrictive provision shall apply.

(Ord. of 8-9-07(1), § 1(3))

Sec. 82-279. - Scope and authority.

This article shall apply to all real property within the jurisdiction of the town.

(1) All property owners, regardless of their previous practices, shall be subject to the requirements of section 82-280, Landscaping/buffer requirements.

(2) All new developments, regardless of its size, shall be subject to the requirements of section 82-281, Mandatory standards for driveway connections.

(3) All property owners, regardless of their previous practices, shall be subject to the requirements of section 82-282, Discharge prohibition.

(4) All property owners, regardless of their previous practices, shall be subject to the requirements of section 82-285, Mandatory standards for existing development.

(5) All redevelopment activities shall be subject to the requirements of section 82-291, Mandatory standards for redevelopment.

(6) All construction activities, whether for new development or improvements on existing development, shall be subject to the requirements of section 82-292, Mandatory standards for construction activities.

(7) Designated town staff shall have right-of-way entry on or upon the property of any person subject to this article and any permit/document issued hereunder. The staff shall be provided ready access to all parts of the premises for the purposes of inspection, monitoring, sampling, inventory, records examination and copying, and the performance of other duties necessary to determine compliance with this article.

(Ord. of 8-9-07(1), § 1(4))

Cross reference— Mandatory standards for construction activities, § 82-291; Building Codes 14-115-(d).

Sec. 82-280. - Landscaping/buffer requirements.

(a) Buffer zones shall be established in accordance with DHEC/OCRM, unless otherwise exempted. Rear setback of ten feet from the DHEC/OCRM baseline establishes the shoreline buffer as lying between the baseline and setback. The town has established additional guidelines for the management of these buffers. Failure to comply with these requirements will be subject to fines in accordance with section 82-294 for each incident and day of violation.

(b) The area within a buffer zone must be either retained/maintained in a natural, undisturbed condition with native flora, or properly managed and maintained with vegetative cover (i.e. yard grasses such as centipede, bermuda, etc.)

(c) A waterway buffer is recommended for all waterways serving more than 25.0 acres or tributary area. New construction of any building or structure is not recommended in the buffer. The waterway buffer shall be defined as area contained within a boundary established 25 feet beyond the critical areas as defined by DHEC/OCRM. Areas without a defined floodplain, the waterway buffer shall be defined on a case-by-case basis. Exemptions shall be permitted for:

  (1) Roads and utilities crossing waterways; and

  (2) Pedestrian trails and walkways proximate to waterways.

(Ord. of 8-9-07(1), § 1(5))

Cross reference— Zoning, § 86-187; Zoning, § 86-145, Beach Management Overlay Zoning District.

Sec. 82-281. - Mandatory standards for driveway connections.

(a) Driveway connections for all new development shall construct the driveway access per the guidelines set forth in this section.

(b) All driveway connections and all areas between the street side property line and the asphalt or roadway shall have a grade that slopes away from the highway surface at a rate not less than one-quarter inch per foot nor greater than one inch per foot where practicable. This slope shall continue for a minimum of six feet.

(c) Some streets have ditches that are a crucial part of the storm water design. These areas will require a culvert pipe to be placed under the driveway access. (Check with the utility director for the requirements in the area you are working.)

(d) (1) Residential driveway access shall be a maximum of 36 feet wide. (Note: This may be split up to allow for two 18-foot driveway access points where the lot size will permit). In any case, driveways or culvert piping shall not be located any closer than seven feet from the side property line.

  (2) Commercial driveway access shall be approved on an individual basis.

(e) Residential driveway access shall not extend or otherwise cover the street right-of-way with a hard surface not permeable to water (i.e. concrete, asphalt and etc.).

(f) Exceptions to this section may be granted where conditions are such that these requirements are not best suited to accomplish the spirit and intent of the requirements by the building code administrator.

(g) Failure to comply with these requirements will be subject to fines in accordance with section [82-295] for each incident and day of violation.

(h) Maximum allowable impervious surfaces for driveways and areas within the front yard setback shall be regulated by a performance standard set forth in zoning sections 86-186, and 86-135(5).

(Ord. of 8-9-07(1), §1(6))

Cross reference— Zoning section 86-69.

Sec. 82-282. - Prohibition of illegal discharges.

(a) No person shall discharge or cause to be discharged into the municipal storm drain system or watercourses any materials, including but not limited to pollutants or waters containing any pollutants that cause or contribute to a violation of applicable water quality standards, other than storm water.

(b) The following direct discharges resulting from the improper disposal of such materials into surface waters are unlawful. Violators will be subject to fines in accordance with section [82-295] for each incident and day of violation as well as any and all costs of removal, cleanup and remediation.

(1) Sewage or bio-solids.

(2) Polluted household wastewater, including but not limited to laundry wash water and dishwater.

(3) Leaking sanitary sewers and connections, which have remained unconnected for three days or more after seven days' notice.

(4) Leaking water lines with flows sufficient to cause soil erosion that have remained uncorrected for three days or more after seven days' notice.

(5) Commercial, industrial or public vehicle, vessel or equipment wash discharge.

(6) Solid, chemical or sanitary waste.

(7) Dead terrestrial animals or animal fecal waste.

(8) Petroleum products or derivatives thereof.

(9) Wrecked or discarded vehicles or equipment.

(10) Chlorinated swimming pool discharges.

(11) Trash, refuse or garbage.

(c) The commencement, conduct or continuance of any illegal discharge to the storm drain system is prohibited except as follows:

(1) Discharges from the following activities will not be considered a source of pollutants to the storm drain system and to waters of the U.S. when properly managed to ensure that no potential pollutants are present, and therefore they shall not be considered illegal discharges unless determined to cause a violation of the provisions of the Clean Water Act or this article: potable water line flushing; uncontaminated pumped groundwater and other discharges from potable water sources; landscape irrigation and lawn watering; diverted stream flows; rising groundwater; groundwater infiltration to the storm drain system; uncontaminated foundation and footing drains; uncontaminated water from crawl space pumps; air conditioning condensation; uncontaminated non-industrial roof drains; springs; individual residential and occasional non-commercial car and boat washing; flows from riparian habitats and wetlands; dechlorinated swimming pool discharges; street wash waters; and flows from fire fighting, residential outdoor showers, and pressure washing of homes.

(2) The prohibition shall not apply to any non-storm water discharge permitted under a NPDES permit, waiver, or waste discharge order issued to the discharger and administered by the State of South Carolina under the authority of the Federal Environmental Protection Agency, provided that the discharger is in full compliance with all requirements of the permit, waiver, or order and other applicable laws and regulations, and provided that written approval has been granted by the town for any discharge to the storm drain system.

(Ord. of 8-9-07(1), § 1(7))

Sec. 82-283. - Prohibition of illicit connections.

(a) The construction, use, maintenance or continued existence of illicit connections to the storm drain system is prohibited.

(b) This prohibition expressly includes, without limitation, illicit connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection.

(Ord. of 8-9-07(1), § 1(8))

Sec. 82-284. - Waste disposal prohibitions.

(a) No person shall throw, deposit, leave, maintain, keep, or permit to be thrown, deposited, left, or maintained, in or upon any public or private property, driveway, parking area, street, alley, sidewalk, component of the storm drain system, or water of the U.S., any refuse, rubbish, garbage, litter, or other discarded or abandoned objects, articles, and accumulations, so that the same may cause or contribute to pollution.

(b) Yard wastes, including dredge spoil, leaves, and yard trimmings may not be deposited into surface waters or the storm water collection system including, but not limited to, all ditches, inlets, gutters, streets. Yard wastes deposited in streets in accordance with the town requirements for the purposes of collection are exempt from this prohibition.

(c) Other acceptable management practices for yard wastes include composting and land filling. Persons who deposit yard wastes into surface waters or storm water collection systems are subject to fines in accordance with section 82-295 for each incident of violation as well as any and all costs of removal, cleanup and remediation.

(Ord. of 8-9-07(1), § 1(9))

Sec. 82-285. - Mandatory standards for existing development.

(a) Landscaping using impervious materials must be part of the allowed square footage; provided, however, use of plastic covering for swimming and garden pools shall be permitted. Reference definition for impervious materials and subsections 86-186(a)(1) and 86-135(e)(5). Property owners must remove any such materials which exceed the impervious limits installed after August 9, 2007. Failure to comply will be subject to fines as outlined in section 82-294.

(b) All label directions must be followed so that fertilizers and pesticides are mixed and applied correctly and at the proper time. The label is a legal document. Persons who incorrectly mix or apply chemicals are subject to fines in accordance with section 82-295 for each incident of violation as well as any and all costs of removal, cleanup and remediation.

(c) Chemicals in quantities more than that required for normal use on both commercial and residential property must be stored in properly built and maintained storage facilities which are located above the base flood elevation as determined by FEMA flood maps and/or the 100-year flood elevation. Persons who do not store chemicals safely will be given 30 calendar days to correct such conditions. Failure to comply following this 30-day period will be subject to fines in accordance with section 82-295 for each incident and day of violation as well as any and all costs of removal, cleanup and remediation.

(d) No person shall intentionally or unintentionally create a nuisance or harmful storm water problem on a neighboring property and/or public street or highway. Persons who do create such a problem, as determined by the town, along with the town's designated professional engineer, will be given 90 calendar days to correct such conditions. Failure to comply following this 90-day period will be subject to fines in accordance with section 82-295 for each incident and day of violation.

(Ord. of 8-9-07(1), § 1(10))

Sec. 82-286. - Coverage and application process.

(a) The applicant shall submit all necessary information to describe the site, development and storm water management practices proposed. The following documents and information shall be submitted:

(1) Two sets of detailed plans and specifications for the project;

(2) Plans and specifications must be dated and sealed as outlined in section 12.3 and show the revision number and date;

(3) General location map showing orientation of the project with relation to at least two references (numbered roads, named streams/rivers, etc.) and showing the receiving water (a USGS map preferable);

(4) Topographic map(s) of the project area showing original and proposed contours and drainage patterns; delineation of relevant boundaries including drainage areas, seasonal high water table, wetlands, property/project boundaries and drainage easements;

(5) Delineation of relevant boundaries including drainage areas, seasonal high water table, wetlands, property/project boundaries and drainage easements;

(6) Existing and proposed built-upon area including drainage areas, buildings, etc.;

(7) Technical information showing all final numbers, calculations, assumptions, drawing and procedures associated with the storm water management measures including but not limited to: built-upon area, runoff coefficients and outlet configuration (where applicable), other applicable information as specified.

(b) As-built drawings of both paper and digital form compatible with Auto Cad dwg. file format 2004 or later shall be submitted to the town within 30 days of completion of project construction.

(Ord. of 8-9-07(1), § 1(10.1))

Cross reference— Building Codes, §§ 14-114 and 14-115.

Sec. 82-287. - Storm water requirements.

(a) All development activities within the jurisdiction of the town shall manage storm water as follows:

(1) Runoff from all new development, regardless of size, shall approximate the rate of flow and timing of runoff that would have occurred following the same rainfall under predevelopment conditions for the 24-hour ten-year frequency rainfall events.

(2) Control systems must be infiltration systems designed in accordance with section 82-288 to control the runoff from all surfaces generated by the first inch and one-half inches of rainfall along with the requirements from subsection (1) above. Alternatives as described in section 82-288 may also be approved if they do not discharge to surface waters in response to the design storm;

(3) Development shall be approved if the following conditions are met:

a. No direct outlet channels or pipes to protected waters unless permitted in accordance with state regulations;

b. Control systems must be infiltration systems designed in accordance with section 82-288 to control the runoff from all surfaces generated by the ten-year frequency rainfall event. Alternatives as described in section 82-288 may also be approved if they do not discharge to surface waters in response to the design storm;

c. Runoff in excess of the design volume must flow overland through a vegetative filter, designed in accordance with section 82-288.

(Ord. of 8-9-07(1), § 1(11))

Sec. 82-288. - Design of storm water management systems.

(a) Storm water control measures which may be approved include:

(1) Storm water infiltration systems including infiltration basins/ponds, swales, dry wells and vegetative filters;

(2) Wet detention ponds; and

(3) Devices meeting alternative design criteria.

(b) Innovative measures for controlling storm water which are not met will be established through actual experience and may be approved on a demonstration basis under the following conditions:

(1) There is a reasonable expectation that the control measures will be successful;

(2) Monitoring requirements are included to verify the performance of the control measures; and,

(3) Alternatives are available if the control measures fail and when the Town has determined that the system has failed.

(c) Vegetation in the filter may be natural vegetation, grasses, or artificially planted wetland vegetation appropriate for site characteristics.

(d) General engineering design criteria, specific storm water management system design criteria and alternative design criteria shall be as described in South Carolina Regulation R61-9 Water Pollution Control Permits.

(e) Storm water systems must be designed by an individual who meets the South Carolina professional engineer requirements for the type of system proposed. Upon completion of construction, the designer for the type of storm water system installed must certify that the system was inspected during construction, was constructed in substantial conformity with plans and specifications approved by the town and complies with the requirements of this section prior to issuance of the certificate of occupancy.

(Ord. of 8-9-07(1), § 1(12))

Sec. 82-289. - Operation and maintenance.

(a) Prior to site plan approval by the town, an operation and maintenance plan or manual shall be provided by the developer for storm water systems, indicating the operation and maintenance actions that shall be taken, specific quantitative criteria used for determining when those actions shall be taken, and who is responsible for restoring a storm water system to design specifications if a failure occurs and must include an acknowledgment by the responsible party. Development must be maintained consistent with the requirements in the operation and maintenance plan and the original plans and any modifications to these plans must be approved by the town.

(b) A maintenance agreement between the responsible party and the town shall be signed by the responsible party in which the responsible party agrees to the continued performance of the maintenance obligations. This agreement shall be assigned to the successors in the title upon transference of the property.

(Ord. of 8-9-07(1), § 1(13))

Sec. 82-290. - Staff review.

(a) The town building code administrator shall conduct a review of the plans, specifications and other project data to determine if all required information has been submitted and shall acknowledge receipt of a complete set of information. The town shall notify the applicant if the information is incomplete and advise the applicant on how to make the application package complete.

(b) The town shall take final action on all applications no later than 30 days following receipt of a complete application with all the required information. For large projects over one acre or any project requiring state approval and permits, final action shall be no later than 60 days after receiving a complete application including all necessary state certifications and construction plans.

(c) If site plan approval is denied, the letter shall state the reason(s) for denial.

(Ord. of 8-9-07(1), § 1(14))

Sec. 82-291. - Mandatory standards for redevelopment of multiple building construction in a subdivision.

For all redevelopment activities, the property owner must: construct an on-site storm water system which is designed to reduce the quantity of storm water leaving the site by 100 percent from the original built-upon lot.

(1) In order to achieve these requirements, the property owner may employ any control measure specified in section 82-288.

(2) Storm water system designs must be completed in accordance with section 82-288.

(3) An operation and maintenance agreement as required per section 82-289.

(Ord. of 8-9-07(1), § 1(15))

Sec. 82-292. - Mandatory standards for construction activities.

Persons who fail to comply with these regulations after they have received notice from the town will be subject to fines for each violation and other actions or penalties as may be authorized by the town.

(1) The town will require developers and individuals to furnish copies of all necessary state certifications and construction plans involved with the land-disturbance activity.

(2) Any person conducting a land-disturbing activity within the town for the purpose of creating permanent impervious surface exceeding 500 square feet must notify the town if a soil erosion and sedimentation control device is necessary.

(3) For construction activities that are one acre or larger, the town will require a sedimentation and erosion control plan per state regulation.

(4) The town designated official has the authority to monitor construction activities to ensure that developers comply with the sedimentation and erosion control plan. (Reference—Storm water Program: General Permit at www.sedhec.gov/water.)

(5) A vegetated buffer strip, measuring the width currently required by state regulations, must be retained or established adjacent to any surface water bordering a land-disturbing activity where feasible. If the land-disturbing activity is water-dependent (e.g., bulkheads, piers, marinas, and bridges) and thus is not feasible, then the activity may be permitted with the appropriate approvals from either the State of South Carolina or the local permitting officer.

(6) All debris and trash must be contained on-site during construction. All garbage receptacles must have high sides or covers to prevent the airborne transport of debris such as plastic and paper. In addition, hazardous materials used during the construction process must be stored and disposed of properly to ensure that they do not enter surface waters.

(7) The person or firm responsible for the site development is responsible for removing or the cost of removing debris, trash and any other hazardous material from surface waters, estuarine waters, SA waters and/or waters of the Atlantic Ocean.

(8) During construction, the person or firm responsible for the site development is responsible for maintenance of erosion and sedimentation control devices.

(Ord. of 8-9-07(1), § 1(16))

Sec. 82-293. - Exemptions.

Other than single-family residence or accessory building construction which are not part of multiple building construction, no public or private property shall be exempt from the general enforcement requirements as set forth within this article relating to storm water quantity and quality management unless granted through the appeal process set forth herein. No exemption shall be granted based on the age, tax or economic status, race, religion of the applicant, or other conditions unrelated to the enforcement of the general requirements of this article.

(Ord. of 8-9-07(1), § 1(17))

Sec. 82-294. - Inspection and notifications.

(a) The town's representatives shall have the power and authority to conduct inspections as may be reasonably necessary to carry out its duties hereunder and to enforce the terms of this article. When necessary to carry out the town's duties hereunder or to enforce the terms of this article, the designated representatives of the town may enter at reasonable times upon public or private property for the purpose of inspection after proper notification to the owner or agent.

(b) All persons, firms, or corporations owning real estate within the town shall allow the designated representative of the town to inspect such real estate to determine compliance with the terms and provisions of this article.

(c) No person shall refuse access to the designated representative of the town nor shall any person interfere with any such representative while in the process of carrying out his or her duties for the town at reasonable times. Any person, firm, or corporation that obtains a building permit, zoning permit, approval of a land use plan, subdivision approval or other development approval or permit, or that discharges into the town's storm water system or surface waters, thereby consents to and gives permission to the designated representatives of the town to inspect its premises for compliance with the terms of this article during the time the permit is active.

(d) If it is determined that a person has failed to comply with this article, a notice of violation shall be served upon that person by registered or certified mail or other reasonable means to give actual notice. The notice shall set forth the measures necessary to achieve compliance with the plan and specify a reasonable time period within which such measures must be completed. The notice will warn that failure to correct the violation within the time period will result in the assessment of a civil penalty or other enforcement action. If the person in violation of this article fails to comply within the time specified, enforcement action will be initiated.

(Ord. of 8-9-07(1), § 1(18))

Sec. 82-295. - Penalties.

Violation of this article shall subject the offender to a civil penalty of not less than $200.00 or more than $500.00 per violation to be recovered by the town in a civil action in the nature of debt if the offender does not pay the penalty within a prescribed period of time after he has been cited for violation of this article. Each day of continuing violation thereof shall constitute and be a separate and distinct offense.

(Ord. of 8-9-07(1), § 1(19))

Sec. 86-145. - Beach management overlay zoning district.

(a) *Primary purpose.* The purpose of the beach management overlay zoning district is to implement and enforce the retreat strategy and storm hazard mitigation plan adopted by the town so as to protect life

and property located within the close proximity to the baseline established by the South Carolina Office of Coastal Resource Management (OCRM).

(b) *Secondary purpose.* This beach management overlay district provision will by its being a part of the town's beach management retreat strategy and storm hazard plan provide a means of educating all persons owning property along the beach about the hazards connected with erosion, storms and flooding in areas close to the beach.

(c) *Applicable state law.* This beach management overlay zoning district is to be compatible with the intent of the South Carolina Beach Management Act, S.C. Code 1976, § 48-39-10 et seq. with full compliance with this act being required whenever applicable.

(d) *Setback lines.*

(1) New construction and the reconstruction of roofed structures within this overlay district shall have a minimum rear setback measured from the roofline which equals the greatest distance resulting from application of each of the following three methodologies:

a. Ten feet from the South Carolina Office of Coastal Resource Management baseline;

b. The average of the distance between the seaward most building roof line of the closest three existing habitable structures to the lot containing the new or reconstructed structure and the South Carolina Office of Coastal Resource Management baseline; and

c. The average of the distance of the seaward most building roof line of the closest three existing habitable structures to the lot containing the new or reconstructed structure and the edge of the adjacent highway right-of-way. The existing structure can be used when computing average distance.

(2) Should application of the rear setback provided for in subsection (d)(1) of this section not provide sufficient area to provide for construction or reconstruction, the building code administrator is authorized to allow the 20-foot front setback to be reduced to not less than ten feet; if reduction to ten feet will not enable construction which will not violate subsection (d)(1) of this section, a variance will be necessary to reduce the front setback under ten feet.

(e) *Permitting.*

(1) No person or corporation shall initiate any development construction or reconstruction, in the area regulated by this chapter, or cause the same to be done without first obtaining permit therefore or forms provided by the town. Compliance with the requirements of this chapter shall be by submittal of a site plan as in the marine commercial district or by submittal of a site plan or plat of the property on which the structure is to be built or rebuilt or expanded. Such site plan or plat will have the structure drawn to scale with the lines shown which earmark the South Carolina Office of Coastal Resource Management's 20-foot critical setback line, the additional rear ten-foot town setback line, the baseline, and the position of the structures in relation to these setback lines.

(2) Any person or corporation desiring to extend any structure seaward of the South Carolina Office of Coastal Resource Management (OCRM) setback line must be issued authorization from the OCRM. Any person or corporation desiring to extend any structure seaward of OCRM baseline must be issued a special permit from the OCRM.

(3) No permit shall be issued for construction on any land or accreted land seaward of the most seaward lots currently existing within the town; except that beach walkovers may permitted so long as the entire length of the walkover meets the requirements of the South Carolina Office of Coastal Resource Management, and no such walkover shall be allowed whose width is greater than six feet.

(f) *Setback lines for the seaward most portion or decks and steps of beach front structures.*

(1) New construction and the reconstruction of decks and steps within this overlay district shall have a minimum rear setback which equals the greatest distance resulting from application of each of the following three methodologies:

a. Ten feet from the South Carolina Office of Coastal Resource Management baseline;

b. The average of the distance between most seaward portion of the steps and/or decks of the closest three existing habitable structures to the lot containing the new or reconstructed structure and the South Carolina Office of Coastal Resource Management baseline; and

c. The average of the distance of the seaward most portion of the steps and/or decks of the closest three existing habitable structures to the lot containing the new or reconstructed structure and the edge of the adjacent highway right-of-way. The existing structure can be used when computing average distance.

(2) Should application of the rear setback provided for in subsection (e)(1) of this section not provide sufficient area to provide for construction or reconstruction, the building code administrator is authorized to allow the 20-foot front setback to be reduced to not less than ten feet; if reduction to ten feet will not enable construction which will not violate subsection (e)(1) of this section, a variance will be necessary to reduce the front setback under ten feet.

(g) *Overlay district boundary lines.* The town council will designate the boundary lines in accordance with the procedures and intent set out in the town beachfront retreat and storm hazard mitigation strategy. The lines are to be reviewed and revised, if necessary, every five years in order to account for any movement of the baseline.

(h) *Relationship of overlay district to other zoning district.* This overlay zone will encompass all zoning districts that fall within the boundaries established in subsection (f) of this section as shown on an overlay which allows both the overlay zone and the underlying zoning district to be viewed. Since this chapter will include regulations that are in addition to the regulations already established for that zone, any structures, use of activity within an underlying zoning district must comply with both sets of regulations. Any conflict between the regulations for with the overlay district and the underlying district will be resolved by application of the more restrictive one.

(i) *Nonconforming buildings or uses.* As to this overlay district the nonconforming buildings or land uses declared by this chapter to be incompatible shall be covered by section 86-171 with the additional requirement that nonconforming parts of structures that fall within this established real' setback as provided for in subsection (d)(1) of this section shall not be expanded or enlarged.

(j) *Parking.* Parking for this overlay district will be the same as required for new construction or reconstruction of structures provided for in the underlying districts. Due to flood requirements which require elevated structures, parking is encouraged to go under these structures.

(Ord. of 5-14-92, § A; Ord. of 2-11-93, § 1; Ord. of 5-12-94; Ord. of 5-10-01(3), § 1; Ord. of 9-12-02(2), §§ 1, 2; Ord. of 2-13-03(1), § 32; Ord. No. 2009-04, § 1, 2-12-09; Ord. No. 2014-18, § 2, 8-14-14; Ord. No. 2015-09, § 3(Exh. C), 5-14-15)

Cross reference— Beaches and waterways, ch. 10.

7.6 Beach Management Authorities

Numerous agencies have responsibility or authority for assisting in the management of the beach at Edisto. This section provides a summary of agencies with regulatory or management authority and discusses their authority as relevant to beach management at Edisto Beach.

7.6.1 Federal

7.6.1.1 The US Army Corps of Engineers (USACE)

The US Army Corps of Engineers (USACE) is responsible for providing engineering services to the United States, including a major role in civil works projects in which there is a federal interest. The regulatory mission of the USACE is to protect federal trust resources in their authority. USACE also plays a major regulatory function through Section 404 of the Federal Water Pollution Control Act of 1972 (Clean Water

Act), which authorized the Secretary of the Army to issue permits for the discharge of dredged and fill material in and around wetlands.

USACE has three main permitting mechanisms, 1) the general permit (GP), 2) individual permit, and 3) nationwide permit. The Army Corps is responsible for reviewing applications and regulating beach nourishment activities under Section 10 to the Rivers and Harbors Act of 2899 and Section 404 of the Clean Water Act. The decision to issue a permit is based on evaluation of the probable impact of the project including cumulative impacts of the activity on the public interest.

USACE also maintains an emergency management responsibility through its Emergency Management Division located in Charleston. During emergency situations, the USACE is authorized to provide engineering and public works assistance to State government agencies.

7.6.1.2 The US Fish and Wildlife Service (USFWS)

The US Fish and Wildlife Service (USFWS) is the federal agency responsible for the protection of federal fish and wildlife habitats and species, specifically those that are imperiled, threatened, or endangered. Much like the National Oceanic and Atmospheric Administration (NOAA), USFWS does not directly permit or authorize activities but is typically part of a consultation team and can raise issues that are deemed important. USFWS is responsible for administering the federal Endangered Species Act (ESA), which protects threatened and endangered species and habitats primarily on land and on the beaches in coastal areas. The USFWS has direct responsibility for protecting endangered insects, plants and shorebirds, and shares joint responsibility with National Marine Fisheries Service (NMFS) for the protection and recovery of sea turtles.

7.6.1.3 The Federal Emergency Management Agency (FEMA)

The Federal Emergency Management Agency (FEMA) is part of the Department of Homeland Security and is responsible for reducing the loss of life and property and protecting the United States from hazards, including natural disasters. FEMA supports a risk-based program for a comprehensive emergency management system of preparedness, protection, response, and communication to state agencies during federal emergencies and is involved in promoting community resiliency and post-disaster relief.

7.6.1.4 The National Oceanic and Atmospheric Administration (NOAA)

The National Oceanic and Atmospheric Administration (NOAA) is a federal agency housed within the Department of Commerce. The mission of the NOAA is to protect federal trust resources, provide mapping of navigation channels, monitor and forecast weather, monitor coastal dynamics and condition, and manage the nation's coast. Within NOAA are the National Ocean Service and National Marine Fisheries Service.

The National Marine Fisheries Service (NMFS) implements the Magnuson-Stevens Fishery Management Act policies, monitors and established federal catch limits, restores coastal wetlands and shellfish habitat, and assesses national resource damage to federal trust species. NMFS has coordination authority over federal activities and permits that may adversely affect Essential Fish Habitat (EFH), and requires notification and consultation prior to federal permitting of certain activities, including beach nourishment. NMFAS administers the requirements of the Marine Mammal Act, and has joint responsibility with the US Fish and Wildlife Service of the protection and recovery of sea turtles.

The National Ocean Service monitors coastal processes and conditions and administers the federal Coastal Zone Management program. Section 307 of the Coastal Zone Management Act requires that an applicant for a federal permit, grant, license, or approval must certify that the proposed action is consistent to the maximum extent practicable with the policies and purposes of a federally approved state coastal management program. The State must concur with this certification prior to a federal agency undertaking the approval, authorization, licensing or funding of the proposed project.

The Office of Ocean and Coastal Resource Management (OCRM), part of NOAA provides national leadership, strategic direction and guidance to state and territory coastal programs and estuarine research reserves.

7.6.1.5 The United States Coast Guard (USCG)

The United States Coast Guard (USCG) is the federal agency responsible for protecting the nation's waterways and coastline as part of the Department of Homeland Security. The Coast Guard's mission includes promoting maritime safety, security and mobility, providing for national defense, and protecting natural resources. The USCG performs search and rescue operations in coastal areas for missing boaters, lost swimmers, and sinking vessels. The USCG is also involved in law enforcement on the water, particularly reckless boating, boating while intoxicated and drug interdiction. In addition the USCG has authority over the permitting of bridges. A major responsibility of the USCG is to respond to, investigate, and address oil spills in a water body. The USCG has developed an Area Contingency Plan for each section of the State for spills and response and serves as the federal On Scene Coordinator for spills.

7.6.1.6 The United States Geological Survey (USGS)

The United States Geological Survey (USGS) is a federal agency housed within the Department of the Interior. The mission of the USGS is to serve the nation by providing reliable scientific information to describe the Earth; minimize loss of life and property from natural disasters; manage water, biological, energy and mineral resources; and enhance and protect our quality of life. The USGS is typically known for mapping the nation's water, earth, and biological science. The USGS collects, monitors, analyzes and provides scientific understanding about natural resource conditions, issues and problems. Although this agency has no regulatory authority, it does provide research and technical assistance for coastal zone management under the Coastal Zone Management Act of 1976.

7.6.2 State

7.6.2.1 State General Assembly

The South Carolina General Assembly is the legal legislative body of the State and holds significant authority over decisions of the State. The General Assembly has the authority to control public lands, including bottomland and beaches below the mean high water mark, manage public trust resources, and regulate the use of water bodies for various purposes including navigation. The assembly has delegated responsibility for the management of many Public Trust resources to State agencies. All authority and jurisdiction assumed or acted upon by any State agency is through direct delegation of authority from the South Carolina General Assembly.

7.6.2.2 Department of Health and Environmental Control

DHEC is the state's health and environmental management agency comprised of five deputy bureaus including Administration, Health Regulation, Health Services, EQC, and OCRM. The mission of DHEC is to promote and protect the health of the public and the environment in South Carolina. The DHEC

Commissioner and a Board of Health and Environmental Control comprised of seven appointed members are appointed by the General Assembly.

7.6.2.3 Office of Environmental Quality and Control

The Department of Health and Environmental Control Office of Environmental Quality and Control (DHEC EQC) is the State's environmental management and regulatory agency and operates eight regional offices in the State. EQC manages water and community wastewater permitting, storm water permitting, septic systems, public and private wells and other inspections, manages air emissions, brownfields, solid waste and hazardous waste, mining, beach monitoring, public swimming pools, and permitting activity for numerous environmental program areas.

7.6.2.4 Office of Ocean and Coastal Resource Management

DHEC OCRM is the State's coastal management agency and administers the federal coastal program, as amended and refined by the state, and protects and manages coastal public trust resources out to three nautical miles. Formerly known as the South Carolina Coastal Council, DHEC OCRM consists of a regulatory division, a policy and planning division, and a program administration and communication division. The regulatory program reviews and permits dock activities beach and dune permits, beach renourishment, wetland impacts, marina applications, and coastal storm water permitting within the eight coastal counties. The Policy and Planning Division provides assistance to local communities in identifying and addressing coastal change, prepares guidance and policy documents to assist government agencies in understanding coastal issues, and manages the preparation of local comprehensive beach management plans.

7.6.2.5 Department of Natural Resources

The South Carolina Department of Natural Resources (DNR) is the principal advocate for and steward of the State's natural resources. This is accomplished through regulating hunting, fishing and boating activities through conservation, land and water management programs. DNR administers the State's threatened and endangered species programs, including protection of shorebirds, sea turtles and marine mammals. DNR also administers most of the State's authority for the management of surface vessels and enforcing boating regulations through the DNR Law Enforcement Division.

7.6.2.6 Department of Transportation

The South Carolina Department of Transportation (DOT) is responsible for planning, constructing and maintaining State roads and bridges, and providing mass transit services in the State. DOT is an Executive branch agency that is overseen by a seven-member commission. The Governor appoints the Commission chairperson and the six commission members represent the congressional districts of the State. The Commission is responsible for hiring the Executive Director who is responsible for hiring the division directors. The Department helps plan for hurricane evacuation routes and maintains and publishes the current evacuation routes. DOT also provides emergency response during hurricanes to facilitate evacuation.

7.6.2.7 Emergency Management Division

The South Carolina Emergency Management Division (EMD) is responsible for preparing for, responding to, and assisting in recovery after major disasters, storms and other emergencies. EMD is comprised of six divisions under the supervision of a Division Director. The divisions include the division director's office, public information, preparedness and recovery, response and operations, Critical Incident Management Group (CIMG) and administrative services. EMD provides planning assistance for

communities prone to emergencies such as storms or hazards, and also provides training to responders. A Regional Emergency Management Program is housed in EMD that provides on-the-ground assistance to communities in the six EMD districts. EMD also works directly with county and local governments following storms to help facilitate rebuilding.

7.6.3 Town

The Town has jurisdiction over lands within its boundaries and is responsible for planning, zoning, building regulation, code enforcement, floodplain management, emergency services, etc. According to Title 5, Chapter 7 of the South Carolina Code of Laws, the municipal jurisdiction extends one-mile seaward of the high tide line[30]. The following Town departments have authority over the beach and nearby areas:

- Police and fire (public safety, emergency operations, evacuations, etc.)
- Building and planning (regulation of new and existing construction, land use and development, code enforcement, floodplain management)
- Public works (beach maintenance, street signs, access signs, ditch maintenance, collection of garbage and debris and overall rights of way maintenance)
- Municipal courts (adjudication of beach-related violations of the Town code)
- Town Council (policy implementation regarding beach related issues)

[30] South Carolina Code of Laws. Title 5, Municipal Corporations, Chapter 7, General Structure, Organization, Powers, Duties, Functions and Responsibilities of All Municipalities. Section 5-7-140. http://www.scstatehouse.gov/code/t05c007.htm.