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Ordinance Number: 2012-01

AN ORDINANCE ADOPTING THE 2011 LOCAL COMPREHENSIVE BEACH MANAGEMENT PLAN FOR THE TOWN OF PAWLEYS ISLAND, SOUTH CAROLINA

WHEREAS, the Town of Pawleys Island, South Carolina, in accordance with the South Carolina Beachfront Management Act (SC Code ann. §48-39-250 et. seq.), and the State Beachfront Management plan (R.30-14, Coastal Division Regulations) did draft its initial Local Comprehensive Beach Management Plan in 1991 which was approved by the South Carolina Coastal Council; and

WHEREAS, the purpose of the plan is to highlight the unique setting and management issues facing Pawleys Island, the goals of the community, and strategies for improved beachfront management to help inform local, state, and federal decisions and funding priorities; and

WHEREAS, the Local Comprehensive Beach Management Plan more specifically enables the Town to identify and collect information relevant to the management of the Town's ocean and inlet shorelines and to continue to be eligible for State beach nourishment funding; and

WHEREAS, the Town of Pawleys Island has, working in coordination with the South Carolina Department of Health and Environmental Control's Office of Ocean and Coastal Resource Management revised the plan in 2011 and recommended its adoption by resolution to Town Council; and

WHEREAS, the Town duly advertised and the Town Council conducted on February 13, 2012 a public hearing on the said Local Comprehensive Beach Management Plan.

Adoption of the foregoing Ordinance moved by Glennie Tarbox and seconded by Mary McAllister and after discussion and call to vote thereon the vote was as follows:

Those in Favor: Mary McAllister, Glennie Tarbox & Sarah Zimmerman

Those Opposed: None

Date of First Reading: 11/14/11

Date of Second Reading: 2/13/12

APPROVED: William L. Otis, Jr.  
WILLIAM L. OTIS, JR., MAYOR

DATE: 2/13/12

ATTEST: Diane J. Allen  
DIANE L. ALLEN

DATE: 2/13/12

# Town of Pawleys Island, South Carolina

## Local Comprehensive Beach Management Plan



Image from: <http://www.townofpawleysisland.com/>

**August, 2011**

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# **1.0 Introduction**

In accordance with the South Carolina Beachfront Management Act (SC Code ann. §48-39-250 *et. seq.*), the Town of Pawleys Island has prepared this local comprehensive beach management plan (LCBMP) in coordination with the South Carolina Department of Health and Environmental Control's Office of Ocean and Coastal Resource Management (DHEC-OCRM). The Town's LCBMP represents considerable effort, inventory, and deliberation on the part of the Town, and establishes a strategy for the management of the Town's beachfront areas for the sustainable enjoyment by residents and visitors. The LCBMP fully inventories, analyzes, and documents each of the ten required elements of a LCBMP (see Section 4.1.1). The LCBMP also identifies and discusses the economic and social benefits, issues and opportunities, and local, state, and federal policies and authorities related to the management and protection of the Town's beach. This LCBMP represents the foundation for a comprehensive, long-range, and enforceable local management strategy for the beachfront area of the Town of Pawleys Island and will be incorporated into the State Beachfront Management Plan (R.30-14, Coastal Division Regulations) in accordance with the provisions of the Act.

## **1.1 Purpose**

The purpose of this LCBMP is to highlight the unique setting and management issues facing Pawleys Island, the goals of the community, and strategies for improved beachfront management to help inform local, state, and federal decisions and funding priorities. More specifically, the LCBMP enables the Town to identify and collect information relevant to the management of the Town's ocean and inlet shorelines and to continue to be eligible for State beach nourishment funding.

## **1.2 History**

The Town first initiated drafting its LCBMP in 1989. A Plan was submitted and approved by the South Carolina Coastal Council (SCCC) in 1991. Subsequently, efforts were made by the Town and DHEC-OCRM (formerly SCCC) to update the LCBMP in 2001. This document represents a complete revision and update of the 1991 LCBMP.

### ***1.3 Description of Pawleys Island***

Pawleys Island is located in Georgetown County approximately twenty-five miles southwest of Myrtle Beach, South Carolina and approximately twelve miles northeast of Georgetown, South Carolina (see Figure 1). Pawleys Island is a short, narrow barrier island that is approximately 3.5 miles in length and varies in width from 300 feet at the south end to approximately 750 feet at the north end. The total area of the island is approximately 1.0 square miles, of which 0.7 square miles (1.8 km<sup>2</sup>) of it is land and 0.3 square miles (0.8 km<sup>2</sup>) of it (29.29%) is water.<sup>1</sup>

The island is bounded to the north by Midway Inlet, on the east by the Atlantic Ocean, on the south by Pawleys Inlet, and on the west by a wide expanse of mudflats covered with marsh, interspersed by numerous small tidal creeks. According to the Pawleys Island Comprehensive Plan (2008), the topography of Pawleys Island is typical of a transgressive barrier island. The dune fields along the beachfront offer the most topographic relief, with gently sloping terrain to the marshes on the western side of the island. Spot elevations range from 19.5 feet above mean sea level (AMSL) to 4.1 feet AMSL and average ground elevation on the island is approximately 8 feet AMSL.

Due to its location and elevation, Pawleys Island is vulnerable to flooding. According to maps prepared by the Federal Emergency Management Agency (FEMA), the entire Town lies within the hundred-year flood plain. The mean tidal range, low tide to high tide, is 4.92 feet with the spring tide range increasing to 5.81 feet<sup>2</sup>. Tides can be considerably higher during hurricanes and other severe storms; approximately one-half of the town is subject to wave action from such storms.

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<sup>1</sup> [www.census.gov](http://www.census.gov)

<sup>2</sup> <http://tidesandcurrents.noaa.gov/tides08/tab2ec3a.html>



Figure 1. Location Map

## ***1.4 Local Beach Management Issues***

The most significant local beach management issue facing Pawleys Island is the threat of beach erosion and the protection of buildings and infrastructure. Significant erosion occurs on the mid to southern portions of the island. On several occasions the southern end of the island has experienced breaches during hurricane events and is continually susceptible to flooding over some of its roads during extreme storms and full moon tides. Historically, these severe erosion and breach events were repaired through beach nourishment activities. It is a clearly stated goal in the Town's Comprehensive Plan "to provide the highest degree of protection to single-family dwellings." Providing such protection is achieved through several beach management methods. The primary method of providing protection to threatened buildings and infrastructure is achieved by maintaining the existing groin field. Similarly, beach nourishment is another important method to protect threatened buildings and infrastructure.

In order for the Town to provide this protection, beach nourishment and other special projects require cost-sharing. Maintaining eligibility for state beach nourishment funds is a continual issue for Pawleys Island. Without access to public funds, it becomes quite difficult to finance beach nourishment or other beach management activities.

The dilapidated terminal groin on the northern end of the island has also been identified as a local beach management issue. According to the Town, the SCDOT installed the groin years ago; however, the appropriate authority responsible for the maintenance of this groin has not been identified (federal, state or local authority). Historical evidence suggests this groin resulted in the significant accretion that occurred at the northeastern tip of the island over the past 30 years.

Public beach parking, which was historically plentiful for year-round residents and summer day visitors, has become a major on and off-street law enforcement and public safety concern and has been identified as a management issue during the summer months, particularly on major holidays. Although Pawleys Island provides public access and boasts the largest free public parking facility in Georgetown County, the community still deals with issues of unsafe parking on the island, as well as trespassing on private property. Many visitors that are attracted to the

beach do not respect or are not aware of the local parking ordinance, which creates a serious concern for public health and safety along the roadways.

## **2.0 Inventory of Existing Conditions**

Pawleys Island beach is a contiguous strip of sand, extending approximately 3.5 miles from Midway Inlet to Pawleys Inlet. Details are provided in the following sections.

### ***2.1 General Characteristics of the Island***

Pawleys Island can be divided into three morphological sections, generally characterized as the Southern, Central and Northern Reaches. The Southern reach represents approximately 43% of the island and is approximately 250-300 feet wide. Maximum dune crests elevations in this section range from 8 feet National Geodetic Vertical Datum 1929 (NGVD29) to 16 feet NGVD29; although, some portions of this section have no defined dune at all. The Central Reach comprises approximately 36% of the island. It contains the widest parts of the island and has a larger, more heavily vegetated dune system than the Southern Reach. Dune crest elevations in the Central Reach range from 10 feet NGVD29 to 22 feet NGVD29. The Northern Reach accounts for approximately 21% of the island. Well-developed dunes that range in crest elevation from 10 feet NGVD29 to 18 feet NGVD29 characterize this section (Figure 2)<sup>3</sup>.

The beaches of Pawleys Island are comprised of fine to medium-grained marine and fluvial sediments containing mostly silica sand with noticeable shell fragment. Mean grain sizes along the beach face range from 0.20 mm to 0.26mm<sup>4</sup>.

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<sup>3</sup> US ACOE, Feasibility Report for Hurricane and Storm Damage Reduction at Pawleys, Island, South Carolina (2004), pp 8-9.

<sup>4</sup> US ACOE, Feasibility Report for Hurricane and Storm Damage Reduction at Pawleys, Island, South Carolina (2004), pp 9

November 21, 2008

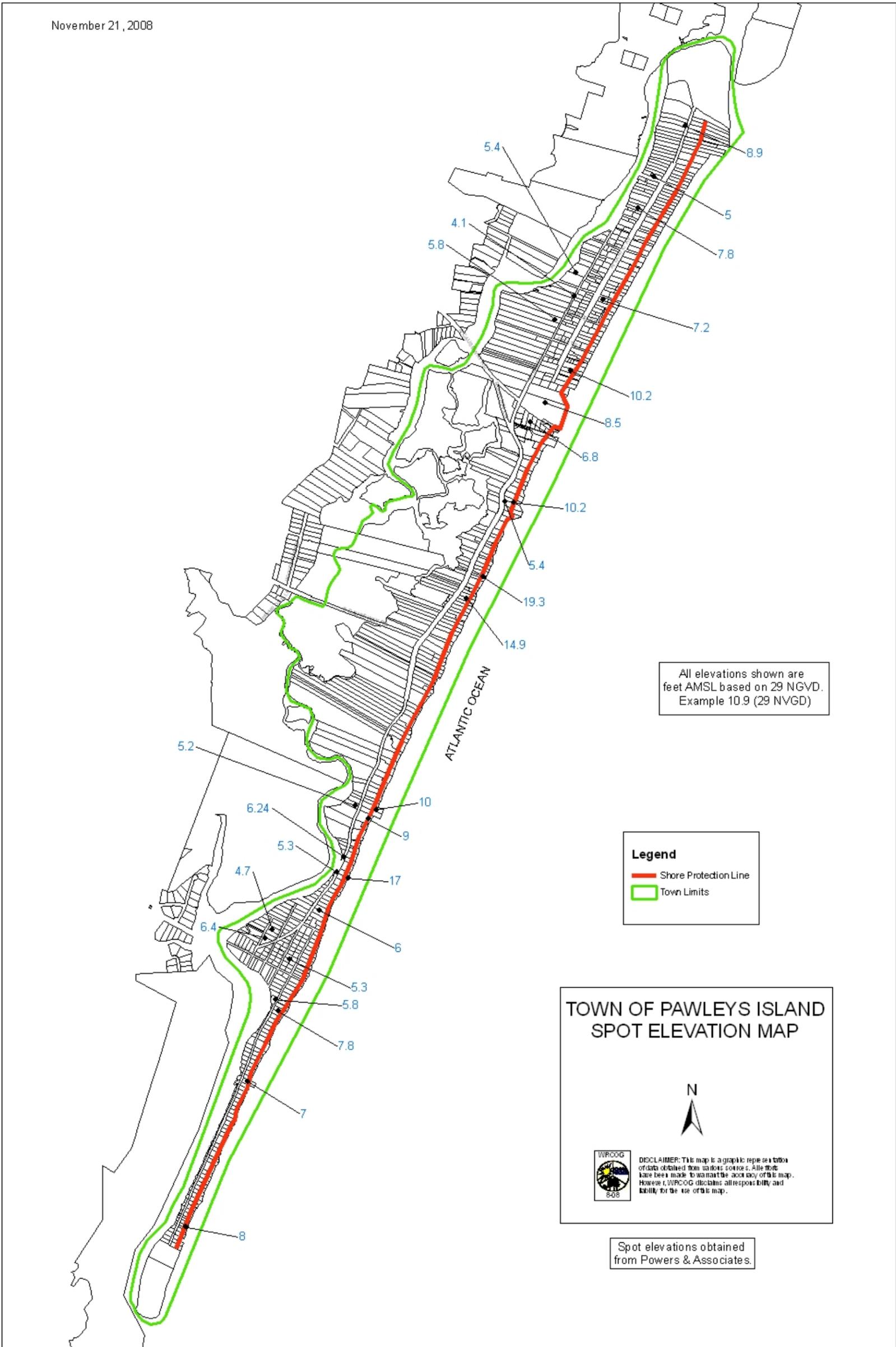


Figure 2. Spot Elevation Map (Source: Town of Pawleys Island Comprehensive Plan)

### ***2.1.1 General Land Use Patterns***

Land use (Figures 3 and 4) on Pawleys Island is primarily residential development in the form of single-family homes. There is no commercial use on the island; although there are two small inns specifically grandfathered under the Town's zoning ordinance. The Pawleys Island Comprehensive Plan indicates that there were 408 total housing units in the Town in 2008, including those under construction, not occupied year-round, or occupied by persons with primary residences elsewhere. The Census also reported that 54 (13.2%) of the total housing units in the Town were owner-occupied, single-family homes, and the median value of these houses was \$575,000 in 2000. Renter-occupied units comprised 5.9% of the total housing units.<sup>5</sup>

Residential development on Pawleys Island began on the middle of the island where some of the remaining homes date back to the early 1800s. Currently, 24.6 percent of housing and 21.4 percent of beachfront housing dates from before 1950. Along the beachfront, another 41.2 percent of housing units were added through new construction or redevelopment between 1950 and 1990. The upswing in the 1990s is due primarily to redevelopment following Hurricane Hugo in 1989 accounting for 25.9 percent of parcels and 28.1 percent of building value. Along the beachfront, 30.3 percent of parcels were built or substantially rebuilt after Hurricane Hugo accounting for 31.5 percent of the appraised value of beachfront property on the island. Currently, 52.3 percent of developed parcels on Pawleys Island are beachfront accounting for 65.0 percent of property value. Of the beachfront properties, 30.3 percent have been developed since 1988 accounting for 36.8 percent of building value.<sup>6</sup>

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<sup>5</sup> [www.census.gov](http://www.census.gov)

<sup>6</sup> Strom Thurmond Institute of Government and Public Affairs, et al. *An Assessment of Shoreline Management Options Along the South Carolina Coast* (2009), pg.55..

November 21, 2008

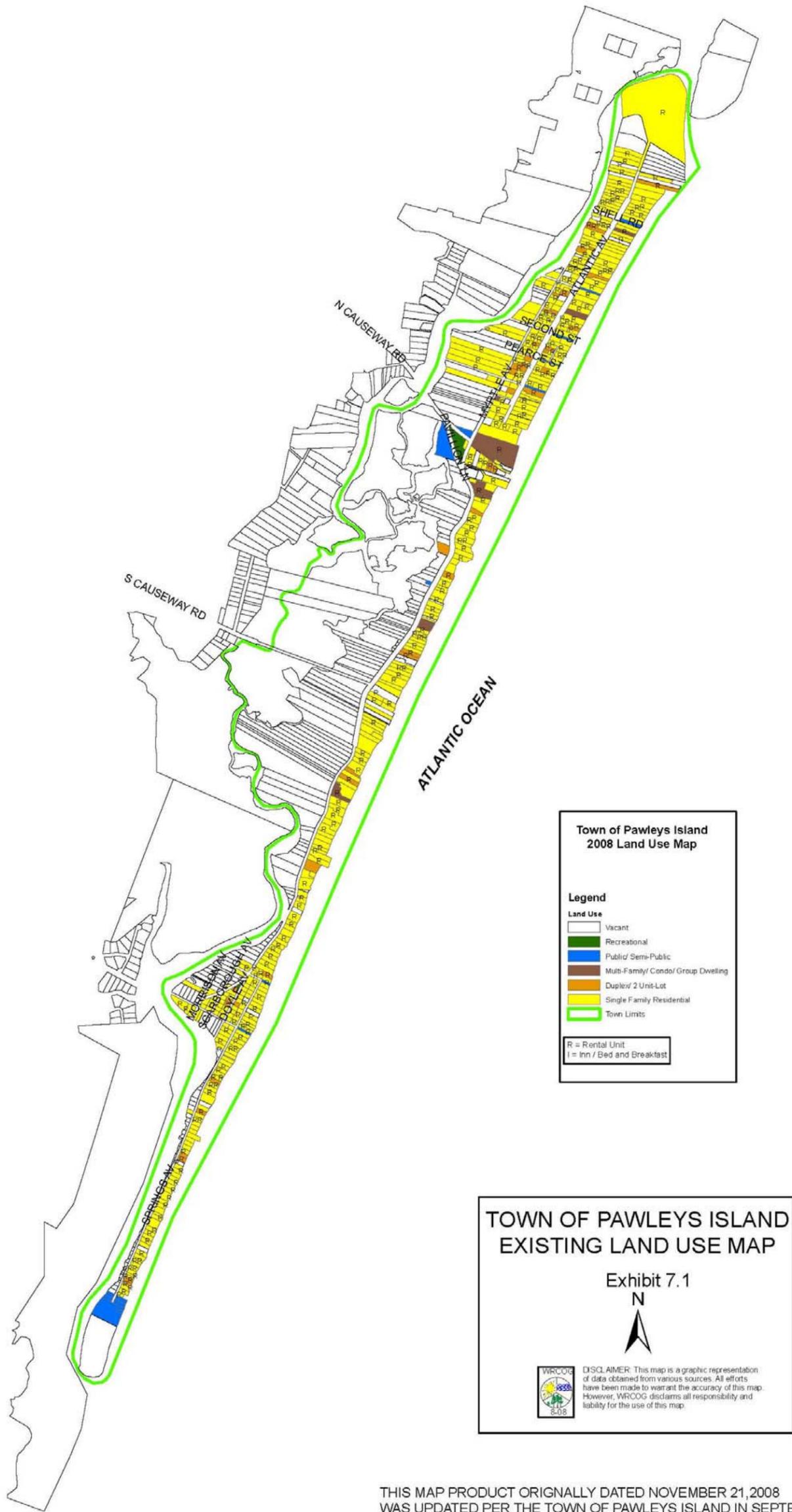


Figure 3. Existing Land Use Map (Source: Town of Pawleys Island Comprehensive Plan)

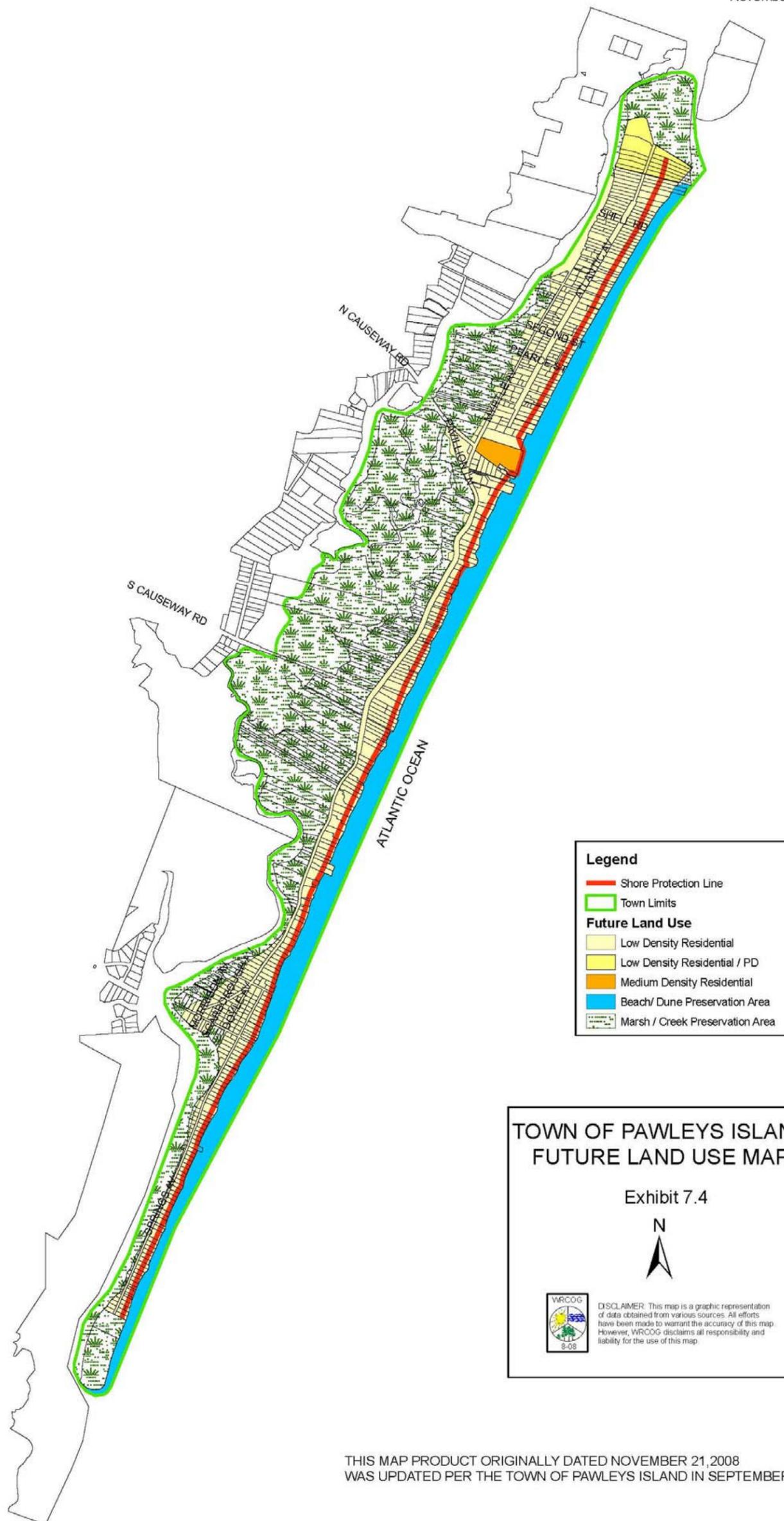


Figure 4. Future Land Use Map (Source: Town of Pawleys Island Comprehensive Plan)

## ***2.2 Pawleys Island Beaches***

### ***2.2.1 Beach Uses***

Pawleys Island's beach is used for a wide variety of purposes. Traditional uses include walking/jogging, wading, swimming and sunbathing. Other recreational activities include fishing, surfing, kiting, sailing, sand sculpting, bocce ball and other beach games. Bonfires and overnight sleeping are not permitted on the beach.

### ***2.2.2 Benefits and Value of Beach***

Rice planters settled the Pawleys Island area in the 1800s, as the island was very suitable for farming and recreation. The orientation of the beach provided an oblique onshore wind that deterred malaria-carrying mosquitoes, which further increased the attractiveness of the island for settlement.

Now, the primary base of the Town's economy is tourism. In 2008, the Island contained approximately three hundred rental units and two inns consisting of 29 rooms combined. Vacation accommodations on Pawleys Island generate an estimated \$12,138,233 in rental income per year. The island's 230 single-family rental units account for an estimated 76% of this income, or \$9,200,000 per year.<sup>7</sup>

In 1999, the Town adopted a local accommodations tax ordinance. Tax collections from the local accommodations tax and accommodations taxes returned by the State are used as the principal base for the Town's budget.<sup>8</sup> Local accommodations tax receipts are reserved for beach purposes by the Town.

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<sup>7</sup> Waccamaw Regional Planning and Development Council, Town of Pawleys Island Comprehensive Plan (2008), pp 7.

<sup>8</sup> Waccamaw Regional Planning and Development Council, Town of Pawleys Island Comprehensive Plan (2008), pp 7.

## ***2.3 Beachfront Developments and Zoning***

Present day development along the ocean shoreline of Pawleys Island can be divided into four zoning classifications. The Town's official zoning map can be seen in Figure 5 and each use district is described below:

Conservation and Preservation District (CP) – It is the intent of this District to protect the several hundred acres of estuarine land and water formations. These areas possess great natural beauty and serve as breeding grounds and refuges for marine life and land animals, whose survival is economically important to sport and commercial fishing, hunting activity, and nature study for our citizens and visitors. In addition, these areas provide needed open space for general outdoor recreational use so necessary for the health and general welfare of people. The regulations which apply within this District are designed to discourage any encroachment by other uses capable of adversely affecting the relatively undeveloped character of the district.

Low Density Residential (R-1) – It is the intent of this District to provide areas which are suitable for low density residential development where adequate public water and sewer supplies are available. The principle use of land within this District is low density single family residences. Modular homes are also allowed.

Medium Density Residential (R-2) – It is the intent of this District to provide areas for medium density residential development and to establish requirements necessary to allow for adequate open space. These areas should be served with adequate water and sewer facilities and be designed in such a manner as to be compatible with adjacent residential development.

Planned Unit Development (PD) – The intent of the Planned Development District is to provide opportunities to create more desirable environments through the application of flexible and diversified land development standards under a professionally prepared comprehensive plan. The planned development is intended to be used to encourage the application of new techniques and technology to community development which will result in superior living or development arrangements with lasting values. It is further intended to achieve economies in land development, maintenance of street systems and utilities networks, while providing building

groupings for privacy, usable attractive open spaces, safe circulation and the general well-being of the inhabitants. New or additional planned developments are prohibited.

Permitted uses within each use district are described further in Section 4.2.4: Beachfront Development Regulations.

### ***2.3.1 Beachfront Structural Inventory***

Approximately 268 oceanfront parcels have been platted for residential use along over three miles of ocean shoreline. Section 48-39-350(A)(3) of the Beachfront Management Act requires communities to include an inventory of all structures located seaward of the DHEC-OCRM beachfront setback line as part of an approved LCBMP. One hundred five structures within the Town of Pawleys Island are located seaward of the DHEC-OCRM jurisdictional setback line. These include 74 habitable structures, 24 groins, nine bulkheads, and seven functional seawalls. Of these structures, 27 habitable structures and all 24 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 Appendix C of this LCBMP. Maps of the baseline and setback line are found in Figures 7-9.

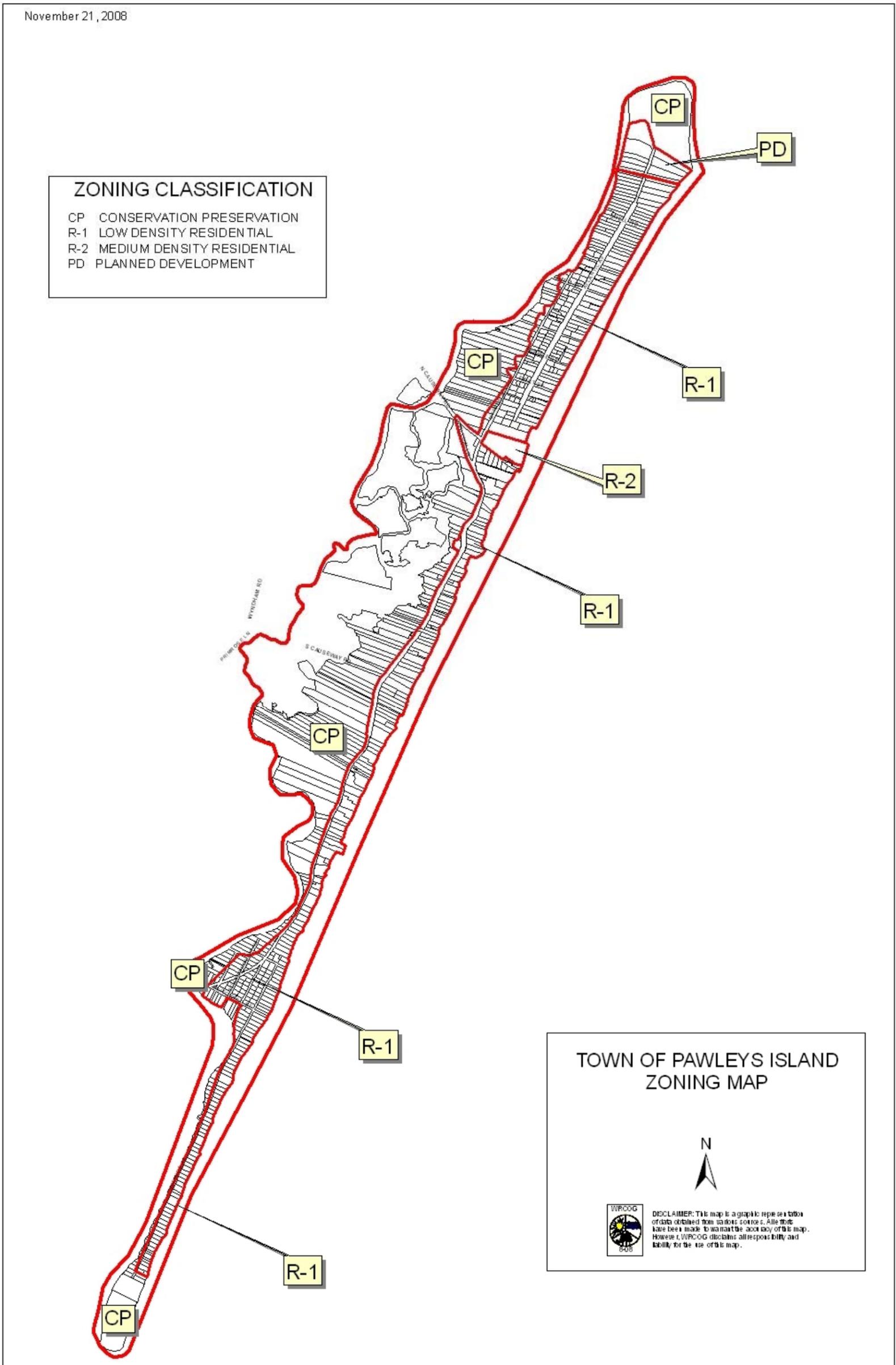


Figure 5. Zoning Map (Source: Town of Pawleys Island Comprehensive Plan)

## ***2.4 Natural Resources and Ecological Habitats***

A main concern in managing South Carolina's ocean beaches is the protection and conservation of coastal natural resources and ecological habitats. As part of a coastal barrier island, the Town of Pawleys Island 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 result in a dynamic landscape that is utilized by various organisms. Two forms of terrestrial habitats are found around the Town of Pawleys Island beachfront, namely the beach/dune system and maritime shrub thickets.

### ***2.4.1 Threatened and Endangered Species***

Discussions with South Carolina Department of Natural Resources (SCDNR) staff revealed that there is no exclusive island-specific listing of threatened, endangered or rare species for Pawleys Island; however, a state list<sup>9</sup> and a federal list<sup>10</sup> does exist for Georgetown County.

### ***2.4.2 Turtle Nesting***

The Town of Pawleys Island participates in the South Carolina United Turtle Enthusiasts (SCUTE) monitoring program, which is made up of a group of local volunteers who monitor and assist the South Carolina Department of Natural Resources Marine Turtle Conservation Program. Local volunteers identify nest locations, mark and safeguard nests and relocate nests where required.<sup>11</sup>

The Loggerhead Sea Turtle, a threatened species, visits Pawleys Island to lay her eggs along the beach. While visits have declined over the years, South Carolina still boasts the most nest sites in the "population" tracked between North Carolina and Central Florida. In 2009, they were nine nest sites on Pawleys Island, seven of which had to be relocated. The nine nests produced 1,107 eggs with a hatch success of 71.1% (828 eggs) and 764 emerged hatchlings. Furthermore, Green,

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<sup>9</sup> [https://www.dnr.sc.gov/pls/heritage/county\\_species.list?pcounty=georgetown](https://www.dnr.sc.gov/pls/heritage/county_species.list?pcounty=georgetown)

<sup>10</sup> [http://ecos.fws.gov/tess\\_public/countySearch!speciesByCountyReport.action?fips=45043](http://ecos.fws.gov/tess_public/countySearch!speciesByCountyReport.action?fips=45043)

<sup>11</sup> <http://www.seaturtle.org>

Leatherback, and Kemp's Ridley turtles can nest on South Carolina beaches, but nesting on Pawleys Island is rare. The Hawksbill turtle does not nest in South Carolina.<sup>12</sup>

## ***2.5 Existing Public Access and Map***

The LCBMP serves as the repository of public beach access and parking information, details of which are provided below.

A total of ten public beach access points lie along the shoreline between Midway Inlet and Pawleys Inlet, eight of which are located in the public right-of-way and two of which are located in the large parking facility located at the south end of the island.

Pawleys Island public access points are marked with beach access signs, and regular maintenance occurs to replace lost or damaged signs. All beachfront access points also have beach regulations signs and trash receptacles, as well as dog-waste collection and disposal stations. The Central Reach section of Pawleys Island's shoreline between the south end of Atlantic Avenue and Hazard Street does not have public beach access points.

Beach access for emergency vehicles is available at First and Third Streets and the South public beach access area.

Public and community beach access points are shown in Figure 6 and Table 1 of this LCBMP.

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<sup>12</sup> D. Griffin personal communication, February, 2010

DRAFT FOR 9-17-08

- Beach Access and Parking**
- ◆ 1. South End (80 Spaces)
  - ◆ 2. Pritchard St (7 Spaces)
  - ◆ 3. Hazard St. (7 Spaces)
  - ◆ 4. First Street (17 Spaces)
  - ◆ 5. Pearce Street (Access Only)
  - ◆ 6. Second Street (14 Spaces)
  - ◆ 7. Third Street (6 Spaces)
  - ◆ 8. Shell Street (11 Spaces)

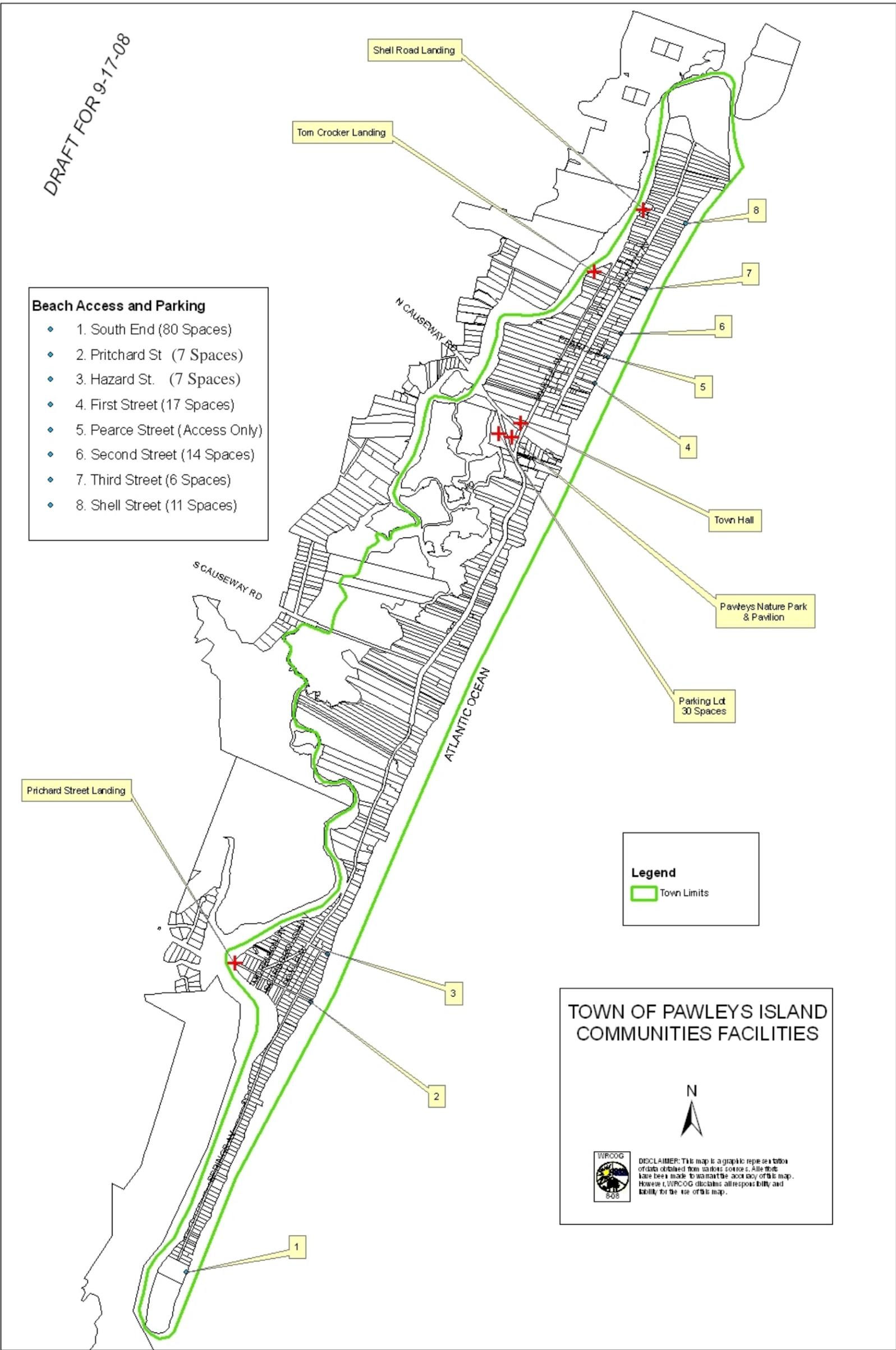


Figure 6. Beach Access and Parking Map (Source: Town of Pawleys Island Comprehensive Plan)

“On street” parking is permitted by the Town, per the Unified Development Ordinance, Article 3-3.3. In practice, public parking is allowed adjacent to paved roads outside of 30 feet of intersections. While these locations are not clearly identified by signage, specific on-street locations where parking is prohibited are clearly marked. The Town has posted signs indicating where parking is *not* allowed, and takes the position that public parking is allowed wherever it is not prohibited or obstructed. Public beach goers that park along the sides of roads must have all four tires of the parked vehicle off of the road. The eight public off-street parking facilities provide approximately 141 combined parking spaces (some marked specifically for handicap parking) and four on-street parking areas provide approximately 390 combined public parking spaces in close proximity (i.e., 500 ft.) to the landward terminus of beach points. Parking spaces are in the form of paved parking spaces, unpaved spaces (gravel or grass surface), and parking along public road rights-of-way (“on street” parking) on Pawleys Island. The numbers and distribution of public parking spaces are listed in Table 1.

Location	Parking Spaces	Trash Receptacle	Walkover/ Improved Surface	Signage	Dog Waste Disposals	Emergency Access
South End Parking Lot	80	Yes	Yes	Yes	Yes	Yes
Pritchard Street	7	Yes	Yes	Yes	Yes	Yes
Hazard Street	7	Yes	Yes	Yes	Yes	No
1 <sup>st</sup> Street	16	Yes	Yes	Yes	Yes	No
2 <sup>nd</sup> Street	14	Yes	Yes	Yes	Yes	Yes
3 <sup>rd</sup> Street	6	Yes	No	Yes	Yes	No
Shell Avenue	11	Yes	No	Yes	Yes	Yes

**Table 1. Existing Town-Owned Beach Access and Parking**

The number and distribution of public access points provide sufficient access facilities and parking to classify approximately 67% of Pawleys Island as having full and complete public

access per the State guidelines (SCCC, 1995; see Table 3). DHEC-OCRM recognizes that full and complete public access is provided along approximately 2.2 of the 3.5 mile beach, from the South End Parking lot to a point 1/8 mile northeast of the public beach access location at Hazard Street and from a point 1/4 mile southwest of the public beach access at 1<sup>st</sup> Street extending to the terminal northern reach of the island. The central section of Pawleys Island’s shoreline between First Street and Hazard Street does not provide full and complete public access.

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	1/4 mile	As Above, parking for 10 vehicles
Neighborhood Public Access Park	1/2 mile	As above, parking for 25 vehicles
Community Public Access Park	3/4 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

**Table 2. DHEC OCRM Public Beach Access Facility Classification**

### 3.0 Beachfront Drainage Plan

Pawleys Island does not have any existing drainage outfalls along the beachfront. Article 7-3 of the *Unified Development Ordinance* states “it shall be unlawful to channel storm water onto the beachfront, thus prohibiting any future developments from discharging storm water directly onto the beach.

## **4.0 Beach Management and Authorities**

Numerous agencies have responsibility or authority for assisting in the management of the beach at Pawleys Island. A summary of the agencies with regulatory or management authority and a discussion of their authority as relevant to beach management on Pawleys Island is provided in Appendix B.

### ***4.1 State Authorities***

DHEC-OCRM is responsible for the management of the state's beachfront and coastal zone. In 1988, the General Assembly of the state of South Carolina amended the South Carolina Code of Laws to include the State Beachfront Management Act (Act) in the state's Coastal Tidelands and Wetlands Act (SC Code ann. §48-39-110 *et. seq.*). This amendment increased the state's authority to manage the use and preservation of ocean beaches and dunes. The Act 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 policy for preserving and restoring oceanfront beaches in South Carolina. The Act also directs DHEC-OCRM to implement the retreat policy by designating a baseline and setback line on all oceanfront properties, and develop a long-range comprehensive State plan for management of the beach and dune resources.

#### ***4.1.2 Beachfront Setback Area***

The State of South Carolina established a policy of retreat from eroding beaches as part of the Beachfront Management Act. DHEC-OCRM, as steward of the State's coastal resources, is responsible for implementing this policy. The implementation is derived from a baseline established by DHEC-OCRM which runs parallel to the shoreline on oceanfront beaches. The baseline is evaluated and redrawn by DHEC-OCRM every eight to ten years and, as directed by

the Beachfront Management Act, stretches of beach are divided into standard erosion zones and inlet erosion zones based on their physical characteristics and proximity to inlets.

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.

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 where the dunes would be had the inlet remained unstabilized.

The second part of implementing the retreat policy at the State level is the setback line. The setback line 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 twenty feet landward of the baseline.

No new construction is permitted seaward of the baseline, with the exception of wooden walkways not more than six 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, or structures permitted by a DHEC-OCRM special permit. A DHEC-OCRM permit is required for all of the above actions except for the construction of wooden walkways not more than six feet wide.

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

construction between the baseline and setback line requires a permit from DHEC-OCRM. New habitable structures built partially or wholly within the setback area may not exceed five thousand square feet of heated space, must be located as far landward on the property as possible, and may not incorporate any erosion control structure or device as an integral part the structure. No part of the building may be constructed seaward of the baseline or on the primary sand dune. The 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 replaced structure seaward of the setback line is not greater than the original square footage beyond the setback line, the replaced structure is no further seaward than the original structure, and is constructed as far landward as possible, considering local zoning and parking requirements.

No new erosion control devices are allowed seaward of the setback line except to protect a public highway that existed prior to the enactment of the Beachfront Management Act. Erosion control structures may not be repaired or replaced if destroyed more than fifty percent above grade on a parcel-by-parcel basis. 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 landward as possible of an existing, functional erosion control device. Pools that existed prior to 1988 may be repaired or replaced, if destroyed beyond repair, if the owner certifies in writing to DHEC-OCRM that it 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 alteration between the setback line and baseline or seaward of the baseline.

The baseline and setback line for the Town of Pawleys Island can be seen in Figures 7 through 9.



Figure 7. Baseline and Setback Line Map



Figure 8. Baseline and Setback Line Map



Figure 9. Baseline and Setback Line Map

## ***4.2 Local Government Authorities***

The town has jurisdiction over lands within its boundaries, generally including all of Pawleys Island and an area extending one mile offshore.<sup>13</sup> The town is responsible for planning, zoning, building regulation, code enforcement, floodplain management, police services, etc. In some fashion, the following Town departments have authority over the beach and nearby areas:

- Police (public safety, emergency operations, evacuations, etc)
- Building and Planning (regulation of new and existing construction, land use and development, code enforcement)
- Public Works (collection of garbage and debris, beach maintenance, street signs, ditch maintenance and overall right-of-way grooming of public property)
- Recreation (management of beach events)
- Judicial (adjudication of beach-related violations of the Town Code)

### ***4.2.1 Pawleys Island Comprehensive Plan***

Pawleys Island's first Comprehensive Plan was adopted in 1989. Revised and adopted in 1999 and 2009, the Comprehensive Plan is designed to serve as a guide for the orderly process of identifying local problems and needs, collecting information and facts necessary to study local problems and needs, arriving at a consensus on local goals and objectives, and utilizing available powers to execute plans and programs in an efficient and organized manner.

Although adopted as an ordinance, the Comprehensive Plan is not law unto itself; but, it serves as a statement of policy and provides the legislative enactment requisite to the adoption and amendment of zoning ordinances, land development regulations, and provides the Town the ability to review public and private projects. Land use decisions and the text of the Town's land use laws should be reflective of and harmonious with the policy statements contained in the Comprehensive Plan.

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<sup>13</sup> SC Code § 5-7-1450

The sections of the Comprehensive Plan follow the basic elements: population, economics, natural resources, cultural resources, community facilities, housing, land use, transportation, and priority investment. Although this LCBMP is not currently adopted as part of the Comprehensive Plan, elements of the Comprehensive Plan promote protection and preservation of the beach/dune system. The Natural Resources Element lists goals for promoting and providing for the protection of the coastal beaches, dunes, and natural vegetation of the island; providing for the protection of saltwater creeks and marshes; minimizing the damage caused by flooding and tidal action; and preserving and protecting the Island's wildlife and marine resources. The Community Facilities Element lists goals for preserving and maintaining beach access within the Town Limits; protecting and enhancing recreation potential within the Town limits; protecting and enhancing open space and other unique recreation facilities; and improving boat landings within the Town limits. The Land Use Element discusses shore/dune protection and the salt marsh critical line. It also describes goals for promoting efficiency in the use of land, particularly with protection of graded or disturbed areas from erosion or the loss of native sands and the protection of sensitive natural areas such as wetlands, sand dunes, beaches, and marshes from encroachment or degradation.

#### ***4.2.2 National Flood Insurance Program-Community Ratings System***

Pawleys Island participates in the Community Ratings System (CRS) program, a voluntary program for National Flood Insurance Program-participating communities. The goals of the CRS are to reduce flood losses, to facilitate accurate insurance ratings and to promote awareness of flood insurance. The CRS was developed to provide incentives for communities to go above and beyond the minimum floodplain management requirements to develop extra measures to provide protection from flooding. Pawleys Islands current CRS class rating is 6.

#### ***4.2.3 Georgetown County Hazard Mitigation Plan***

Hazard mitigation planning for Pawleys Island is coordinated through Georgetown County. The Town of Pawleys Island has recognized and participated in the Georgetown County Mitigation Planning Committee since June 25, 2003. The Georgetown County Hazard Mitigation Plan has been prepared to identify pro-active efforts that can be taken to lessen the impacts of the multitude of natural hazards that have a significant probability of occurring within the County.

The Plan covers the entire County, including the municipalities of Georgetown, Andrews, and Pawleys Island. The Plan incorporates a hazards assessment that was prepared by the Hazards Research Laboratory, Department of Geography at the University of South Carolina for Georgetown County in November, 1997. When necessary, information in the assessment was updated. Based on the capabilities of the County and its three incorporated municipalities, the Plan proposes actions designed to avoid or minimize the identified hazards. The Georgetown County Hazard Mitigation Plan is intended to help make the County more resistant to disasters, while at the same time respecting the needs of the residents and the funding capabilities of local government and private businesses.<sup>14</sup>

The Georgetown County Hazard Mitigation Plan contains information specific to Pawleys Island related to hazard event history, critical infrastructure vulnerability, repetitive flood losses, and the value of structures within the special flood hazard area.

Hazards assessed in Georgetown County indicated that Pawleys Island experienced significant damage during Hurricanes Hazel and Hugo. More specifically, the Town was devastated by the storm surge from Hurricane Hugo in 1989 and significant flooding occurred again on January 1, 1990, as a result of high tides from a syzygy, coupled with a strong northeast wind. Due to Georgetown County's location along the north coast of South Carolina, Pawleys Island is at risk of effects from hurricanes and tropical storms. The National Hurricane Center's Inland Wind Model suggests that all of Georgetown County is equally susceptible to the wind effects of even a slow moving storm.

According to the hazard assessment, Pawleys Island is one of the most socially vulnerable areas in Georgetown County; the Town stands out because of large numbers of people, young and old, and higher numbers of housing units. The Federal Emergency Management Agency (FEMA) has identified 45 "repetitive loss properties" that are situated on Pawleys Island. FEMA classifies a property as "repetitive loss" if the National Flood Insurance Program has paid two or more flood claims of \$1,000 or more in any given ten-year period since 1978. As of 2003, total

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<sup>14</sup> <http://www.scemd.org/Mitigation/Mitigation%20Local%20Plans/Georgetown%20HM%20Plan.pdf>

repetitive losses for Pawleys Island were estimated to be \$6,956,276. Mitigation actions proposed for the Town of Pawleys Island are listed and can be found in Section 3.6 of Georgetown County’s Hazard Mitigation Plan.

#### ***4.2.4 Disaster Preparedness and Evacuation Plan***

##### Preparedness and Evacuation

The Town of Pawleys Island, in conjunction with Georgetown County and the South Carolina Emergency Management Division, developed a Disaster Preparedness and Evacuation Plan in November of 2001. The purpose of the plan is to establish responsibilities, policies, and procedures to effectively evacuate citizens from stricken or threatened disaster areas to locations providing relative safety and shelter. The Town will work with all appropriate agencies before and after a disaster to minimize potential injury and damage, and to expedite recovery and redevelopment.

##### Recovery Plans

Following a severe storm and as soon as practical, a Post-Disaster Recovery Team will be established by the Mayor and Town Council. The Post-Disaster Recovery Team will return to the island to begin search and recovery operations, safety evaluations and preliminary damage assessments and determination of clean-up needs. Town officials will coordinate closely with representatives of South Carolina Emergency Management, Georgetown County, FEMA, U.S. Army Corps of Engineers, DHEC-OCRM and any other relevant agencies.

More specifically, an element of the Town’s Storm Emergency Plan addresses “re-entry and recovery operations.” This component of the plan charges the Mayor and Town officials with establishing the priorities for recovery operations. These include:

- Access to the island – Roads will be prioritized for clearing to provide access to emergency facilities and utilities
- Clean up and road repair – Mayor will be responsible for coordinating efforts with the appropriate State and Federal agencies.

- Restoration of vital facilities – These include Town Hall, Police and coordination with fire, EMS and water and sewer officials.
- Restoration of power to vital facilities – This will be coordinated with Santee Cooper priorities.
- Authorization for the general public to return to the Town – This is to be decided by the Mayor and the Town officials in consultation with the Governor’s office after essential facilities are restored.

Damage assessments will be necessary to determine realistic estimates of the amount of damage caused by a hurricane or major storm. Information such as the number of structures damaged, magnitude of damage and estimated total dollar loss will need to be developed. A Damage Assessment Team (DAT) consisting of the Town’s Building Inspector, a local realtor or building contractor, a representative from the Georgetown County Tax Assessors’ Office and the chairman of the Town Planning Commission will be established. The DAT will immediately begin to make windshield surveys of damaged structures to initially assess damages and provide preliminary dollar values of repairs or replacement. It is expected that DHEC-OCRM staff will also be conducting initial “destroyed beyond repair” evaluations of buildings, pools, and erosion control devices seaward of the DHEC-OCRM setback line. Town personnel will coordinate with DHEC-OCRM staff where possible through the Community Liaison.

Each damage assessment should be documented according to County Tax records. Also, the town tax maps and/or records may be used for parcel and structure identification. The total estimated dollar value of damages will be summarized and reported to the Post-Disaster Recovery Team.

Before the town can begin the reconstruction process, a database detailing the conformance or the non-conformance of all town structures must be developed. This database will insure that structures to be reconstructed may be issued the necessary permit quickly and efficiently. Developed structures that were destroyed or sustained major damage and which did not conform to town or state regulations must be repaired or redeveloped according to those policies.

## Mitigation

In an effort to reduce future storm-related damages, the Town has participated in the development of the Georgetown County Hazard Mitigation Plan.<sup>15</sup>

Town regulations preclude the reconstruction of non-conforming structures<sup>16</sup> which will result in a more hazard resistant community following reconstruction.

### ***4.2.5 Beachfront Development Regulations***

#### Unified Development Ordinance

The Unified Development Ordinance (UDO), enacted December 8, 2003, repealed the existing Pawleys Island Flood Damage Prevention Ordinance and the Pawleys Island Zoning Ordinance, which were both enacted on April 10, 1986. All ordinances or portions thereof, of the Town of Pawleys Island that relate to zoning, subdivision, dune protection, flood damage prevention and land use and are inconsistent with the provisions of the UDO have been repealed.

The UDO is a set of laws that regulate land use and development activity on Pawleys Island. It contains several sections that regulate development activity on the beach and dune system, as summarized below.

In 1985, a Conservation Preservation Overlay District (CP) was established to preserve the estuarine land and water formations found throughout the island. This regulation is designed to “reserve such areas for the purpose to discourage any encroachment by other uses capable of adversely affecting the relatively undeveloped character of the district.”<sup>17</sup>

In February 2001, a Shore Protection Line was also established “to protect sand dunes, critical habitat areas and endangered wildlife species. No structure or land alteration shall be permitted unless it is in full compliance with the terms of this shore protection regulation.”<sup>18</sup> The Shore

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<sup>15</sup> See Section 4.3.2. of this Plan.

<sup>16</sup> See Section 4.3.4.2 of this Plan.

<sup>17</sup> Unified Development Ordinance, Town of Pawleys Island, South Carolina, Article III, page 2.

<sup>18</sup> Unified Development Ordinance, Town of Pawleys Island, South Carolina, Article VI, page 1.

Protection Line provides stronger protections than the DHEC-OCRM setback area by restricting the construction of any residential living unit or habitable structure seaward of the Shore Protection Line. This does not apply to walkways and gazebos. The Shore Protection Line is generally drawn as the eastern boundary of existing development.

UDO Article III (Zoning Regulations) provides for the establishment of certain base and overlay districts for the purpose of guiding development in accordance with existing and future needs and in order to protect, promote, and improve the public health, safety, morals, convenience, order, appearance, prosperity and general welfare. A large portion of the beachfront area is zoned R-1 (Low Density Residential) and all areas along the beachfront are seaward of the Shore Protection Line.

Density in the zoning districts is limited, in part to protect and preserve the beach and dune system. The Town's zoning map is shown in Figure 5. Specific development standards, permitted uses and other uses (accessory, conditional temporary, etc.) are listed in Articles 3 and 4 of the Unified Development Ordinance (Zoning Regulations and Development Regulations, respectively).<sup>19</sup>

#### ***4.2.6 Regulations on Beach and Shoreline Protection***

Pawleys Island's regulation pertaining to beach protection requires conformance with the State's Beachfront Management Act. Prior to 2001, the Town of Pawleys Island did not have its own regulation for beach setbacks and relied heavily on those established by DHEC-OCRM. On February 26, 2001, the Pawleys Island Planning Commission amended the UDO to approve the establishment of the Shore Protection Line. Article VI of the UDO also regulates development seaward of the Town's established Shore Protection Line, which generally is more restrictive than DHEC-OCRM's jurisdictional setback line. The intent of the Town's Shore Protection Line is to protect sand dunes, critical habitat areas, and endangered wildlife species by preventing the placement of habitable structures farther seaward than the Shore Protection Line, which is drawn generally at the most eastward point of existing construction and across all other undeveloped

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<sup>19</sup> <http://library.municode.com/index.aspx?clientId=14718&stateId=40&stateName=South%20Carolina>

property. Town regulations also protect public beach access by prohibiting encroachments and obstructions of existing public access.

Before a development plan approval is granted, the plan must meet the following general standards. No residential living unit, or habitable structure, shall be built forward/eastward of the Shore Protection Line. This does not apply to walkways and gazebos. There shall be no other alteration to the dunes, except as herein provided. Any activity that will disturb the beach or dune vegetation within any VE flood zone will require a permit. Where necessary and required for surface installation or authorized stairs, walkways and support columns, a permit may be issued. However, under certain other conditions permits may be obtained which may allow disturbance of the dunes provided the disturbance is mitigated. The following guidelines are established for dune protection:

- 1) Sand dunes shall not be altered in any form unless there is no feasible alternative to construct projects otherwise allowed under the State Beach Management Program. In such cases, it shall be demonstrated that the project to be constructed cannot avoid the sand dune by relocation or realignment on the property or by reasonable reduction in size of the construction, consistent with other surrounding properties or other changes to avoid or minimize impacts;
- 2) Where unavoidable infringement of the dune system occurs, the construction shall be elevated two feet above grade where possible;
- 3) Once construction is completed, dunes that were destroyed or damaged shall be restored to their original contours and re-vegetated. This requirement does not preclude any mitigation specified by the mitigation guidelines;
- 4) Sand dunes designated as critical habitat areas in the state or local beach management plan shall not be altered for any reason except as allowed in the “Guidelines for the Protection of Endangered Species and Critical Habitat”;

5) All dune building, restoration, and re-vegetation shall be done in accordance with the standards established by the Building and Zoning Office;

6) During construction phases, the dunes may be disturbed where it is necessary and required to utilize pilings for the purposes of building habitable structures, and for walkways, docks, decks, etc. These pilings may be placed within the dune(s), so long as once the construction is completed, the dune(s) is/are restored to their original structure; and,

7) Any structure existing prior to April 15, 2002, shall be grandfathered and shall not be subject to the terms and conditions of these regulations. Applications for additions, alteration and/or replacement of grandfathered structures shall comply with the requirements.

Reconstruction of damaged non-conforming buildings and other structures along the oceanfront (and elsewhere on the island) is governed by the UDO specifically:

Article 5-4 requires any alteration, repair, reconstruction or improvement to a non-conforming structure shall only be undertaken if said nonconformity is not furthered, extended or replaced. Article 6-2.1 allows repairs and renovations of habitable structures located wholly or partially seaward of the Shore Protection Line if damaged less than 50% of its market value. Article 6-2.2 provides that any non-conforming structure damaged 50 percent or more of its market value due to natural causes may be replaced or rebuilt provided the following requirements are met: the total square footage of replaced structure does not exceed the total square footage of the original structure seaward of the Shore Protection Line, the linear footage of the replaced structure parallel to the coast does not exceed original linear footage parallel to the coast, the replaced structure is no farther seaward than original structure and where possible, the replaced structure is moved as far landward as practicable.

#### ***4.2.7 Other Regulations on Beach Management***

Article 3-2 of the Unified Development Ordinance prohibits all uses excluding permitted recreational activities in the conservation preservation areas

Article 7-2 of the UDO states it shall be unlawful to remove any beach compatible sand from within the Town limits of Pawleys Island.

Article 7-3 of the UDO prohibits channeling storm water discharge onto the beachfront.

Article 7-4 of the UDO specifies lighting requirements for the protection of nesting sea turtles and their hatchlings. These requirements are listed below:

- Flood lights shall be prohibited. Wall mounted light fixtures shall be fitted with hoods so that no light illuminates the beach;
- Pole lighting shall be shielded in such a way that light will be contained within an arc of three (3) to seventy-three (73) degrees on the seaward side of the pole;
- Low profile luminaries shall be used in parking lots and such lighting shall be positioned so that no light illuminates the beach;
- Dune crosswalks shall utilize low profile shielded luminaries;
- Lights on balconies shall be fitted with hoods so that lights will not illuminate the beach;
- Tinted glass, filmed glass, or shade screens are recommended for use in windows facing the ocean above the first floor of multi-story structures; and
- Temporary security lights at construction sites shall not be mounted more than fifteen (15) feet above ground. 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.

Article 7-5 of the UDO prohibits the scatter of refuse, solid waste, landscape waste, brush or fills, and/or litter upon the beach and dune system. Furthermore, Article 7-5 prohibits dumping,

discarding, dropping, throwing, or allowing the deposit of any item of solid waste and/or refuse, garbage, trash, or medical waste onto the beach and dune system.

Dune construction and re-vegetation seaward of the DHEC-OCRM jurisdictional setback line must comply with state requirements and guidelines. Furthermore, Article 7-5.6 of the UDO states that it shall be unlawful to introduce, plant, or maintain Beach Vitex (*Vitex rotundifolia*) within the Town of Pawleys Island.

It is unlawful to allow any dog to run at large off of private property.<sup>20</sup> This is strictly enforced on Pawleys Island, particularly on the beach. A general dog waste provision requires that all dog waste must be removed from the beach. Dog waste receptacles are provided at all beach access locations.

Driving or operating any motor vehicle of any kind or nature upon the public beach shall be unlawful; provided that town vehicles operated while cleaning or working on the beach, town police and other emergency vehicles shall be exempt from the application of this section.<sup>21</sup> Except for emergency vehicles and motorized wheelchairs and similar transportation devices for handicapped persons, no motorized vehicle, sailboat, jet ski or any recreational water craft shall be permitted on or through any sand dune.<sup>22</sup>

## **5.0 Erosion Control and Management**

### ***5.1 Shoreline Change Analysis***

The Beachfront Management Act defines three types of shoreline zones. A standard erosion zone is a segment of shoreline which is not directly influenced by an inlet or associated shoals. An unstablized inlet erosion zone is a segment of shoreline along or adjacent to a tidal inlet which is directly influenced by an inlet and its associated shoals and which is not stabilized by jetties, terminal groins, or other structures. A stabilized inlet erosion zone is a segment of shoreline

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<sup>20</sup> SC Code § 47-3-50

<sup>21</sup> Georgetown County Ordinances § 5-5-17

<sup>22</sup> Georgetown County Ordinances § 5-5-54

along or adjacent to a tidal inlet which is directly influenced by the inlet and its associated shoals and which is stabilized by jetties, terminal groins, or other structures.

Most of Pawleys Island is classified as a standard erosion zone. There is a small unstabilized inlet zone along the parking area at the southern end of the island, and the area north of the fishing pier is classified as a stabilized inlet zone due to the Midway Inlet jetty.

### ***5.1.1 Beach Profiles***

Representative beach profiles measured from fixed starting points provide the best means of quantifying short-term beach changes. These data allow changes in beach width (in feet) and beach volume (expressed in cubic yards per foot of shore length) to be assessed.

Sixteen permanent beach profile monuments, beginning with station 4200 at Pawleys Inlet and ending at station 4295 at Midway Inlet, have been installed by DHEC-OCRM along Pawleys Island. These monuments have been surveyed routinely between 1987 and the present and provide the best island-wide basis for monitoring beach changes (see Figure 10 for monument locations).<sup>23</sup>

Figures 11 through 16 show the beach profile changes between 1995 and 2009 at stations 4200, 4270 and 4285<sup>24</sup>. Information on other monuments is available at <http://gis.coastal.edu>.

The “0” position on the x-axis of the profile figures marks the location of the beach profile monuments whereas the vertical red line marks the location of the DHEC-OCRM baseline. The figures and tables show the volumes of sand that were measured above the -5 ft contour (NAVD88) and seaward of the DHEC-OCRM baseline for the years 1989/1990, 1995, 1999, 2006, 2007, 2008, and 2009.

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<sup>23</sup> Description sheets for the monuments are contained in OCRM (2001) and are available at: [http://www.scdhec.net/environment/ocrm/permit/docs/beachsurveys/pawleys\\_island.pdf](http://www.scdhec.net/environment/ocrm/permit/docs/beachsurveys/pawleys_island.pdf)

<sup>24</sup> These plots were created using the on-line tool available at: <http://gis.coastal.edu/opm/login/bmprofileselect.php>

It is important to note that the beach profile volume changes presented in this section are based on data from 1989 to 2009 whereas the shoreline change rates in Section 5.1.2 are based on historical shoreline positions from 1872 to 2006. The beach profiles show recent, annual changes whereas the long-term shoreline change rates show the annual erosion or accretion that has occurred since 1872.

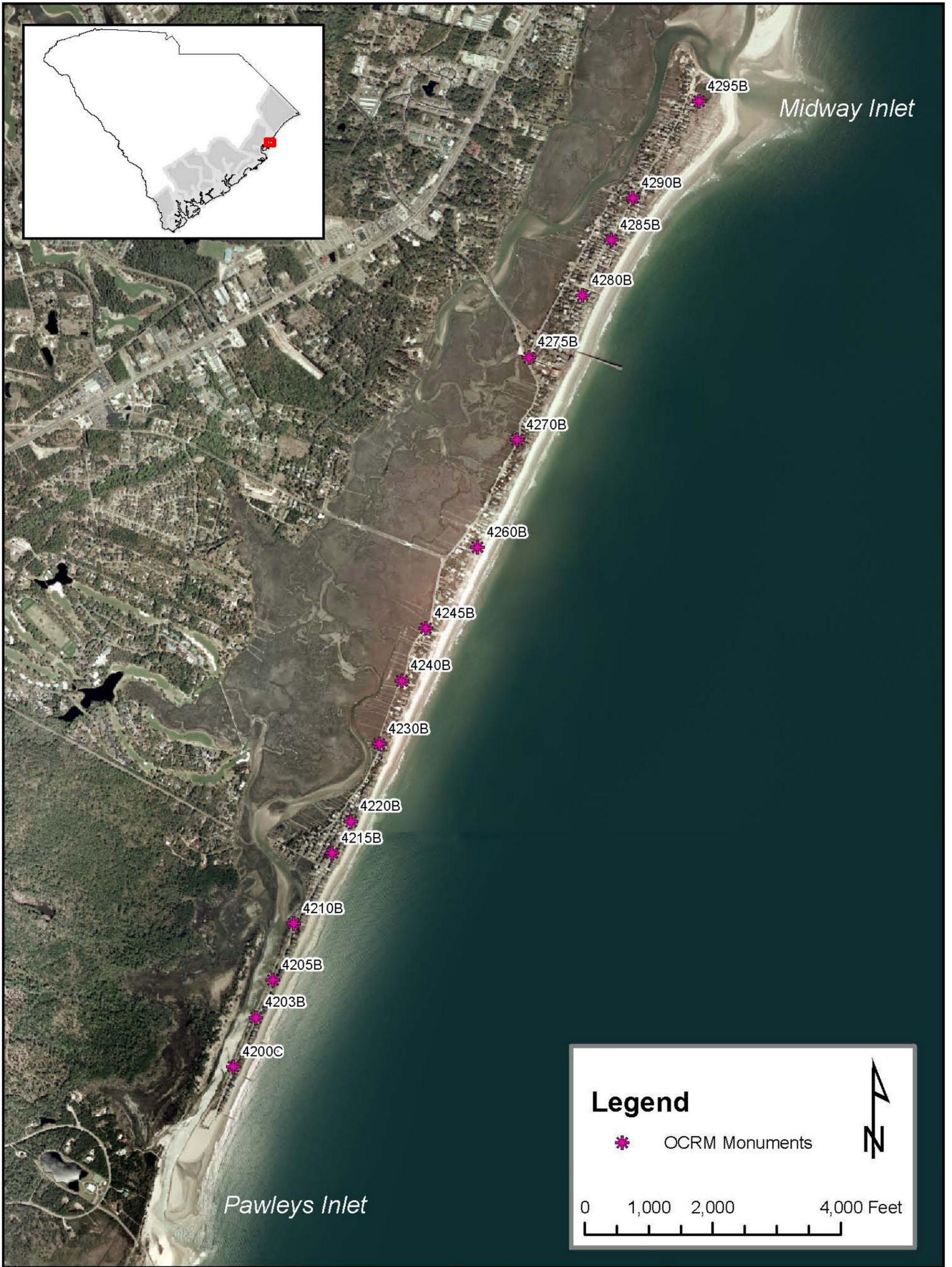


Figure 3. DHEC-OCRM Monument Locations

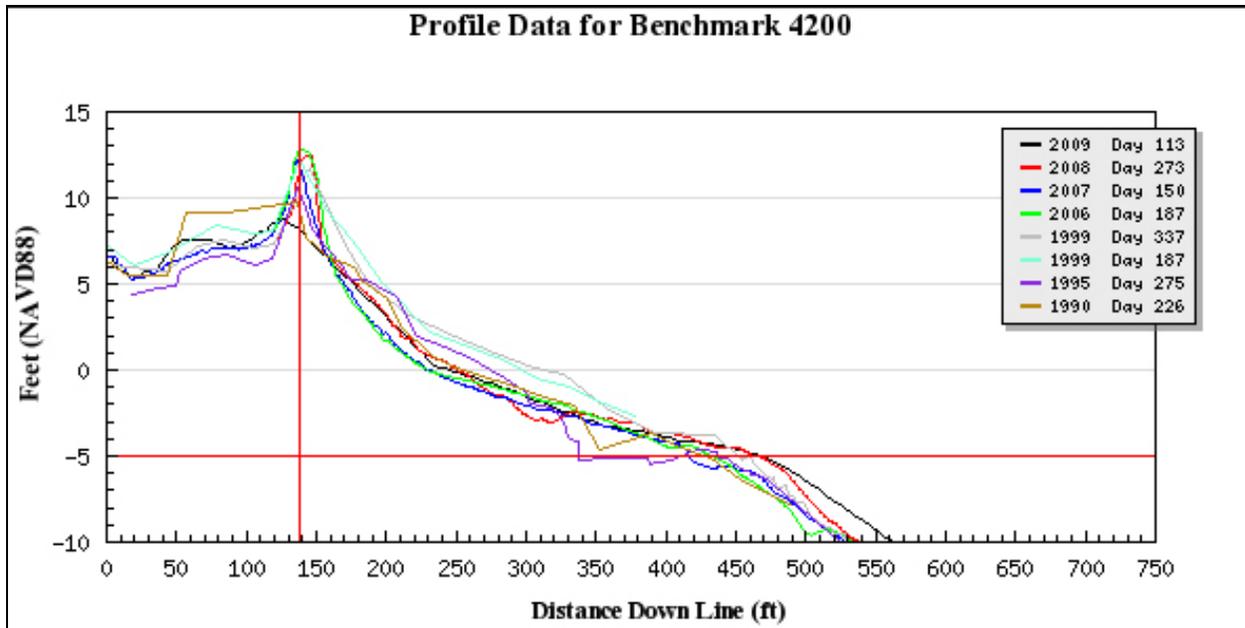


Figure 11. Profile Data for Benchmark (Monument) 4200

**Beach Profiles at OCRM Monument 4200: Pawleys Island**

Survey Date	Profile Volume (yd <sup>3</sup> /ft)	Volume Change from Previous Profile (yd <sup>3</sup> /ft)
April 2009	52.6	- 1.7
September 2008	54.3	+ 6.3
May 2007	48.0	- 3.3
July 2006	51.3	- 17.8
November 1999	69.1	+ 0.3
July 1999	68.8	+ 16.6
October 1995	52.2	- 1.2
August 1989	53.4	

Figure 12. Beach Profiles at OCRM Monument 4200: Pawleys Island

All profile volumes calculated seaward of the OCRM baseline, above the -5 ft contour.

**Monument 4200:**

At monument 4200, the average beach profile volume is 56 yd<sup>3</sup>/ft, and the volume at this station has varied from 48 yd<sup>3</sup>/ft to 69 yd<sup>3</sup>/ft. From August 1989 to April 2009, this station lost about 0.8 yd<sup>3</sup>/ft of sand. The most recent measurements, between September 2008 and April 2009, indicate that this profile lost about 1.7 yd<sup>3</sup>/ft of sand during this time.

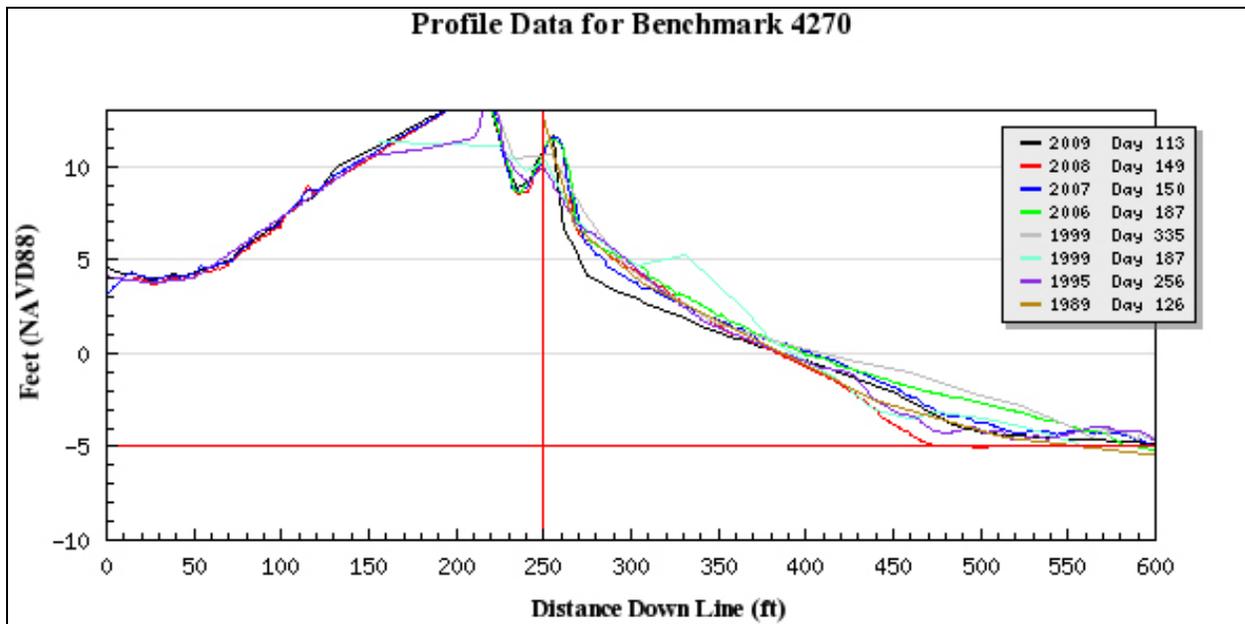


Figure 13. Profile Data for Benchmark (Monument) 4270

**Beach Profiles at OCRM Monument 4270: Pawleys Island**

Survey Date	Profile Volume (yd <sup>3</sup> /ft)	Volume Change from Previous Profile (yd <sup>3</sup> /ft)
April 2009	54.5	+ 1.1
May 2008	53.4	- 8.5
May 2007	61.9	- 5.0
July 2006	66.9	- 2.0
November 1999	68.9	+ 6.2
July 1999	62.7	+ 4.8
September 1995	57.9	+ 1.3
May 1989	56.6	

Figure 14. Beach Profiles at OCRM Monument 4270: Pawleys Island

All profile volumes calculated seaward of the OCRM baseline, above the -5 ft contour.

**Monument 4270:**

At monument 4270, the average beach profile volume is 60 yd<sup>3</sup>/ft, and the volume at this station has remained relatively consistent between 53 yd<sup>3</sup>/ft and 69 yd<sup>3</sup>/ft. From May 1989 to April 2009, this station lost about 2.1 yd<sup>3</sup>/ft of sand. The most recent measurements, between May 2008 and April 2009, indicate that this profile gained about 1.1 yd<sup>3</sup>/ft of sand during this time.

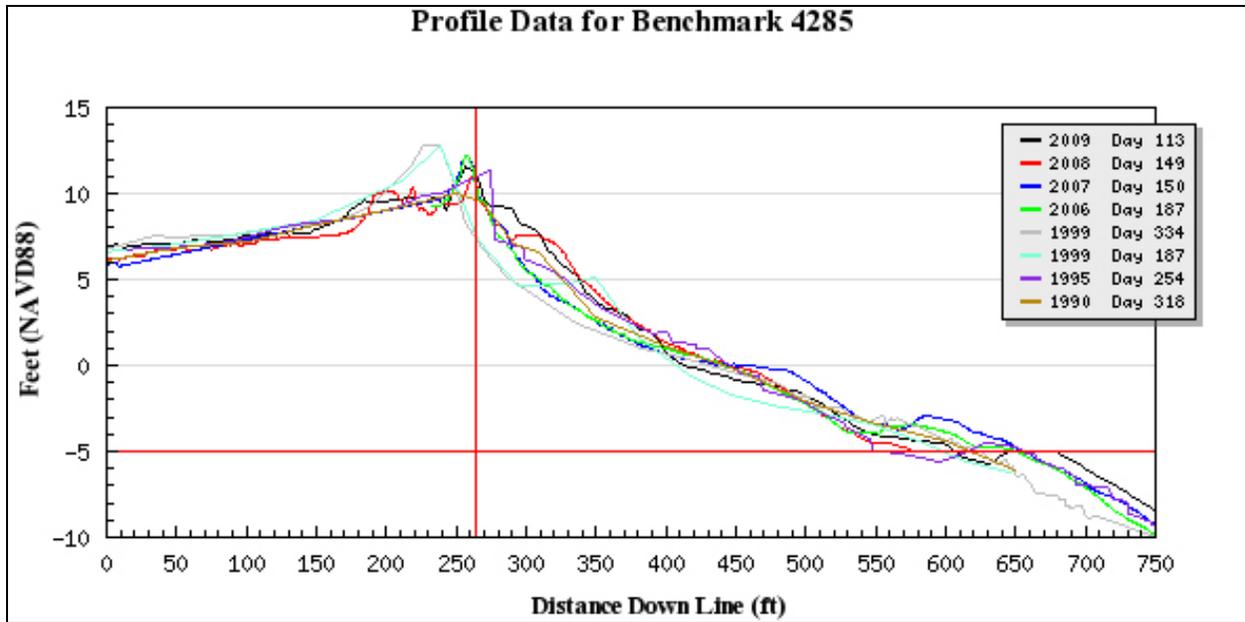


Figure 15. Profile Data for Benchmark (Monument) 4285

**Beach Profiles at OCRM Monument 4285: Pawleys Island**

Survey Date	Profile Volume (yd <sup>3</sup> /ft)	Volume Change from Previous Profile (yd <sup>3</sup> /ft)
April 2009	74.4	+ 0.6
May 2008	73.8	- 0.7
May 2007	74.5	+ 5.2
July 2006	69.3	+ 4.3
November 1999	65.0	+ 0.6
July 1999	64.4	- 7.2
September 1995	71.6	- 1.1
November 1989	72.7	

Figure 16. Beach Profiles at OCRM Monument 4285: Pawleys Island

All profile volumes calculated seaward of the OCRM baseline, above the -5 ft contour.

**Monument 4285:**

At monument 4285, the average beach profile volume is 71 yd<sup>3</sup>/ft, and the volume at this station has remained relatively consistent between 64 yd<sup>3</sup>/ft and 75 yd<sup>3</sup>/ft. From November 1989 to April 2009, this station gained about 1.7 yd<sup>3</sup>/ft of sand. The most recent measurements, between May 2008 and April 2009, indicate that this profile gained about 0.6 yd<sup>3</sup>/ft of sand during this time.

### 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 on Pawleys Island. Based on an assessment methodology that was developed by the U.S. Geological Survey, the calculated long-term erosion rates for Pawleys Island are shown in Table 3 and Figure 17. Groin fields on Pawleys Island have more recently counteracted a long-term erosional trend to produce a relatively stable shoreline, with an official average long-term erosion rate of -0.20 ft/yr for the entire island. However, localized long-term erosion rates may be as high as -2.0 ft/yr.

Monument	Long-Term Erosion Rate (ft/yr)	Monument	Long-Term Erosion Rate (ft/yr)	Monument	Long-Term Erosion Rate (ft/yr)
4200C	1.41	4230B	-1.97	4280B	0.52
4203B	1.31	4240B	-1.35	4285B	0.00
4205B	-0.03	4245B	-1.02	4290B	-0.07
4210B	-0.82	4260B	-0.49	4295B	0.23
4215B	0.03	4270B	0.26	<b>Island-wide Average: -0.20 ft/yr</b>	
4220B	-1.57	4275B	0.39		

**Table 3. Town of Pawleys Island 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 Pawleys Island, and both have been used to assess shoreline change.

Digital high water shoreline position maps covering Pawleys Island have been compiled for the years 1872, 1926, 1934, 1962, 1983, 1984, and 2006.<sup>25</sup><sup>26</sup> DHEC-OCRM reviewed aerial photographs in unstabilized inlet zones from 1954, 1958, 1963, 1973, and 1988 for the original establishment of its baseline and setback line along Pawleys Island in 1990. The baseline and

<sup>25</sup> US ACOE, Shoreline Movements Report 2, Tybee Island, Georgia to Cape Fear, North Carolina, 1851-1983, CERC, Technical Report CERC 83-1, 1990, pp147.

<sup>26</sup> Harris, M. S. et al., Comparison of Shoreline Erosion Rates Derived from Multiple Data Types: Data Compilation for Legislated Setback Lines in South Carolina (USA), Journal of Coastal Research, Special Issue 56, 2009 pp. 1224-1228.

setback line were revised in May 2010 using additional data including a 1993 aerial photograph (Figure 7-9).

Historical shoreline positions in standard beach zones on Pawleys Island are relatively stable (Figure 18). Inlet zones are much more dynamic than standard beach zones, and shoreline positions in these areas tend to fluctuate dramatically over both short and long time scales.

At the northern end of the island, in the vicinity of Midway Inlet, the shoreline was much farther landward historically than its current position. For example, in 1934, the shoreline in this area was located about 475 ft landward of its current position (Figure 19). At the southern end of the island, the mouth of Pawleys Inlet continues to migrate in a southerly direction due to longshore sediment transport that builds up the spit. Between 1983 and 2006, the spit grew southward by about 280 ft, or at a rate of about 12 ft/yr (Figure 20). The mouth of Pawleys Inlet has not always been near its present location. Based on a historical topographic chart from 1872, the inlet formerly cut through the island near the present day intersection of Pritchard Street and Springs Avenue (Figure 21). It is unlikely that the inlet will permanently return to this configuration, but it is not unrealistic to consider that the southern spit of Pawleys Island could breach at some point in the future.

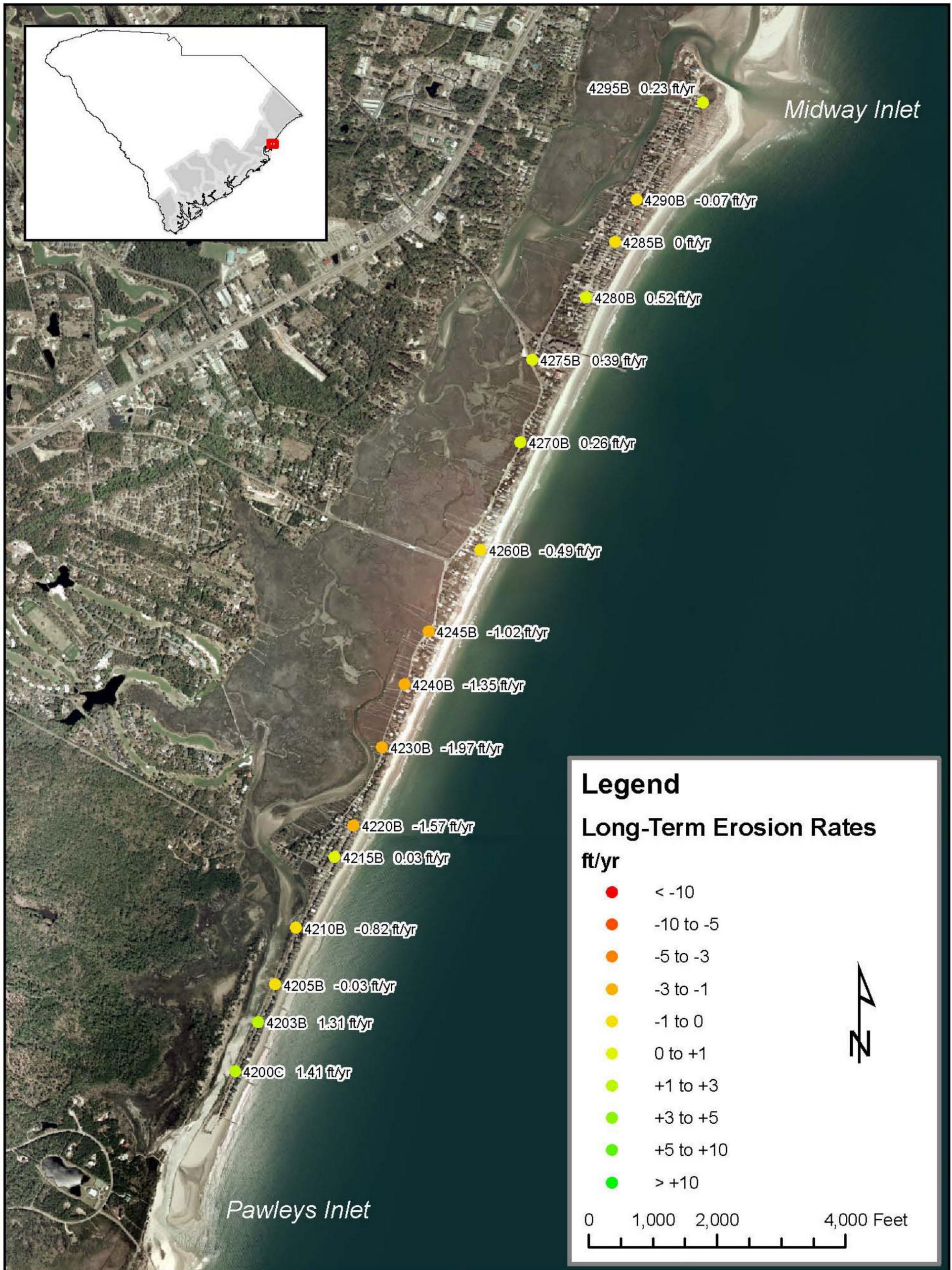


Figure 4. Town of Pawleys Island Historical Erosion Rates

Pawleys Island - Historical Shorelines in a Standard Beach Zone



Figure 18. Town of Pawleys Island Historical Shorelines in a Standard Beach Zone

Pawleys Island - Historical Shorelines near Midway Inlet



Figure 5. Town of Pawleys Island Historical Shorelines near Midway Inlet

Pawleys Island - Historical Shorelines near Pawleys Inlet

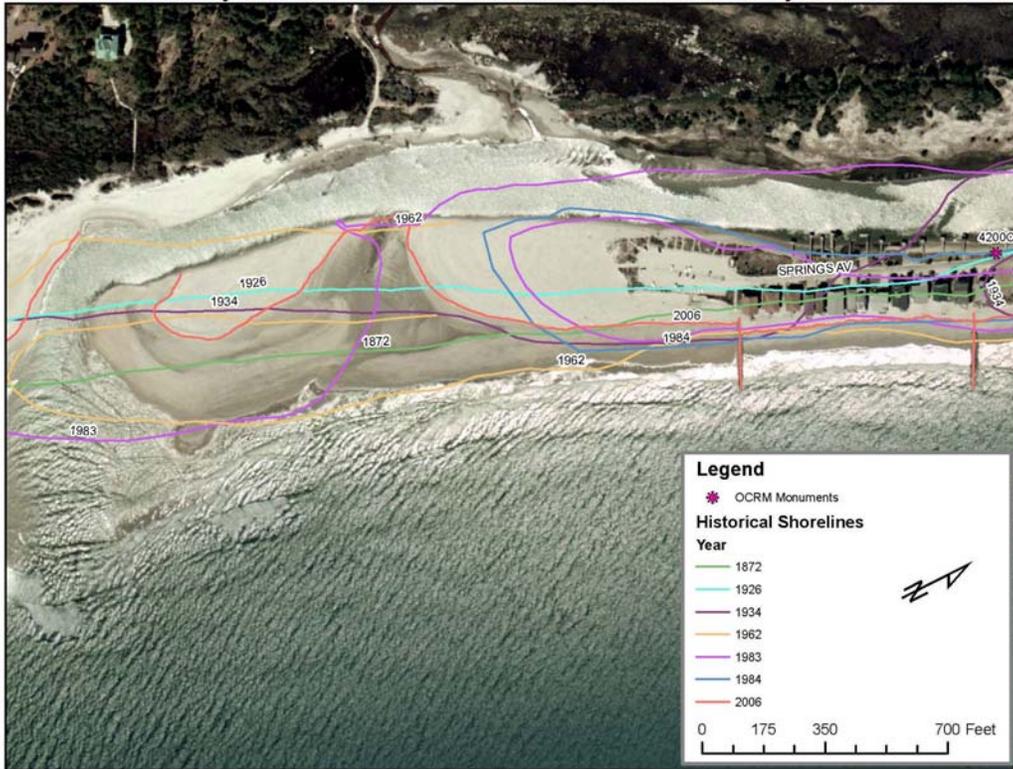


Figure 20. Town of Pawleys Island Historical Shorelines near Pawleys Inlet

Pawleys Island - Location of Pawleys Inlet in 1872

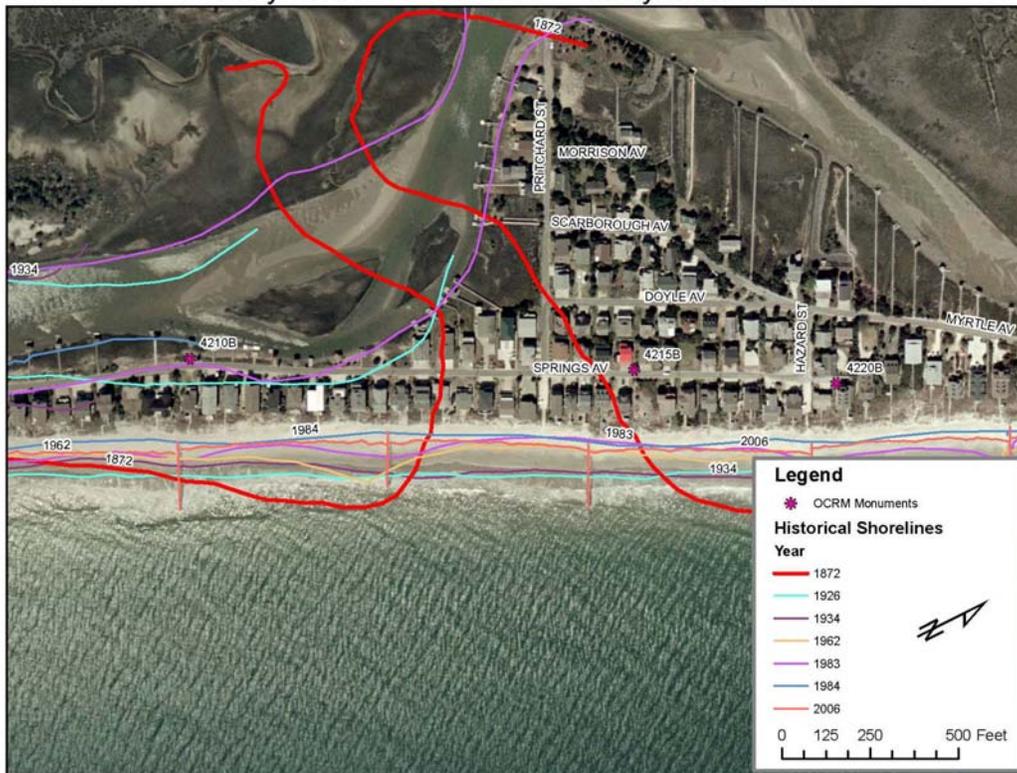


Figure 6. Town of Pawleys Island Location of Pawleys Inlet in 1872

## ***5.2 Beach Alteration Inventory***

Twenty-four groins (Figure 22) spaced approximately 600 feet apart were originally constructed of treated timber piles in the late 1940s through early 1960s. The groins have had several repairs, including rock armoring. Most notably, in 1999, approximately 75 feet to 150 feet of the seaward ends of the groins were retrofitted with restacked, grout-filled quarry stone in conjunction with a state-sponsored renourishment and groin repair project. A treated timber terminal groin, originally constructed in the early 1950s, is stabilizing the northern end of Pawleys Island at Midway Inlet. Some sections of the terminal groin have deteriorated and have been repaired periodically with armor stone. On the southern end of the island, the public parking facility was protected by a revetment built in 1969, which was buried by the 1999 renourishment project. Recent high tide and wave conditions have periodically re-exposed the revetment (Figure 22).<sup>27</sup>

### ***5.2.1 Beach Renourishment***

In recognition of its stewardship responsibilities, the policy of South Carolina is to promote carefully planned nourishment as a means of beach preservation and restoration where economically feasible.<sup>28</sup>

Beach renourishment and other “soft” solutions are the preferred alternatives to hard stabilization to combat beach erosion in South Carolina. The SC Beachfront Management Act defines beach nourishment as “the artificial establishment and periodic renourishment of a beach with sand that is compatible with the existing beach in a way so as to create a dry sand beach at all stages of the tide.”<sup>29</sup> A typical renourishment project consists of dredging beach compatible sand from an offshore site, pumping the sand onto the beach, and distributing it on the beach face.

In the case of Pawleys Island, one state and locally sponsored (\$1.3 million) beach renourishment project has been completed to date – a 1999 project which excavated 250,000 cubic yards of sediment from the southern spit off the southern end of the island and placed the

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<sup>27</sup> US ACOE, Pawleys Island Coastal Engineering Study, (2004), pp 16-17.

<sup>28</sup> SC Code § 48-39-260(5)

<sup>29</sup> SC Code § 48-39-270(4)

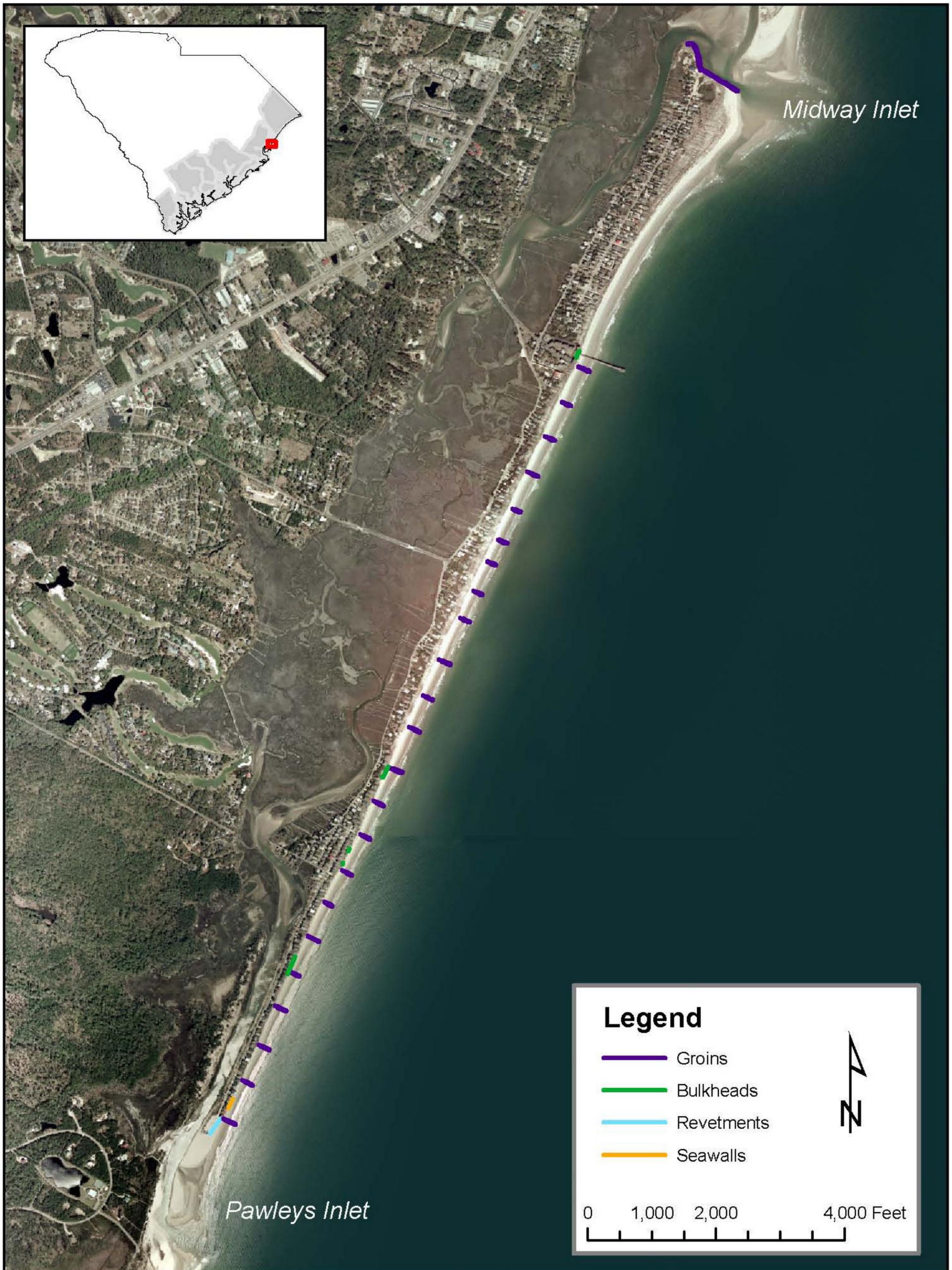


Figure 7. Erosion Control Structures and Groins Map

sediment along 2.5 miles of beach. In 2004, Pawleys Island sponsored a creek renewal dredging project. The purpose of the project was to restore tidal flow and to improve recreational opportunities in the Pawleys Island creek system and to improve navigation in the creek. Approximately 29,160 cubic yards of sandy material was hydraulically dredged from four locations in Pawleys Island Creek totaling 8.77 acres. Because the dredged material was beach compatible, the material was pumped onto the beach at the southern and northern ends of Pawleys Island to improve the recreational beach.

At the time of this LCBMP revision, a federally-sponsored renourishment project is being sought but is contingent on congressional appropriations. The proposed project, located on the southern reach of shoreline of the island, would provide for a 50-foot-wide berm over a 6,800-foot-long (1.3 miles) reach at elevation +7 feet National Geodetic Vertical Datum (NGVD) with 350-foot-long tapers at each end, for a total length of 7,500 feet (1.4 miles). Additionally, the project includes construction of a 20-foot-wide dune at elevation +10 NGVD with slopes of 1 Vertical to 5 Horizontal.

Periodic nourishment, accomplished by four 9-year re-nourishment intervals and one 5-year re-nourishment interval, would be required to optimize net benefits over a 50-year period of analysis. The estimated volume of fill for initial project construction is 666,400 cubic yards, which includes placement of 305,300 cubic yards for the first nourishment. The proposed source of fill material is an 832-acre borrow area located between 11,000 and 17,000 feet offshore of Pawleys Island.<sup>30</sup>

### ***5.2.2 Emergency Orders and Sandbags***

The term “emergency” is defined by the SC Coastal Tidelands and Wetlands Act as “any unusual incident resulting from natural or unnatural causes which endanger the health, safety, or resources of the residents of the State, including damages or erosion to any beach or shore resulting from a hurricane, storm, or other such violent disturbance.”<sup>31</sup> DHEC-OCRM does not consider long-term, chronic erosion as an “emergency.” Emergency situations before or after a

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<sup>30</sup> US ACOE, Feasibility Report for Hurricane and Storm Damage Reduction at Pawleys, Island, South Carolina (2004), Cover Letter.

<sup>31</sup> SC Code § 48-39-10(U)

storm event often prompt local governments to issue Emergency Orders, which allow property owners to construct temporary barriers against wave uprush through one or a combination of the following erosion mitigation techniques: sandbagging, sand scraping, or minor renourishment.<sup>32</sup> Property owners being protected by sandbags are responsible for the maintenance of the bags to insure that they remain in place and in good repair, and they are also responsible for the complete removal of the bags.<sup>33</sup> Past Emergency Orders issues at Pawleys Island are summarized in Table 12.

<b>Dates Issued</b>	<b>Location/Property</b>	<b>Event/ Type of Emergency</b>	<b>Specified Mitigation Techniques</b>
2/93	Pawleys Pier Village, 320 Myrtle Ave., 610 Springs Ave., 608 Springs Ave. and 612 Springs Ave.	N/A	Sand Scraping
4/01	South End Beach and Public Access Area	North Easter Storms	Sand Scraping
4/02	South End Beach and Public Access Area	Winter North Easter and Spring High Tides	Sand Scraping
3/03	South End Beach and Public Access Area	Winter North Easter and Spring High Tides	Sand Scraping
2/04	South End Beach and Public Access Area	Winter North Easter storms and shift in Pawleys Inlet	Sand Scraping
2/05	South End Beach and Public Access Area	Hurricane/Storm Events	Sand Scraping
6/07	South End Beach and Public Access Area	Winter and Spring North Easter storms and shift in Pawleys Inlet	Renourishment

**Table 4. Town of Pawleys Island History of Emergency Orders**

One Emergency Order was issued in the 1990s, six were issued in the 2000s, and none have been issued since 2010. Furthermore, six of the seven Emergency Orders issued for Pawleys Island have been located at the South End Beach and Public Access Area. An analysis of events that

<sup>32</sup> R. 30-15(H)

<sup>33</sup> R. 30-15(H)

precipitated these Emergency Orders would suggest that this section of the island is highly vulnerable not only to hurricane events but other seasonal storms.

### ***5.3 Discussion of Erosion Control Alternatives***

As is the case of most coastal communities, erosion can and does threaten upland structures and infrastructure on Pawleys Island, particularly at the south end of the island. Managing this erosion threat is essential if Pawleys Island is to preserve its recreational beaches, preserve its tax base, and ensure the safety of its citizens.

Pawleys Island has been dealing with the periodic erosion threat to structures and infrastructure on the beachfront for over forty years. Erosion control methods utilized on Pawleys include functional seawalls and groins. Construction of new seawalls and revetments is prohibited by the State of South Carolina. Pawleys Island depends heavily on maintaining its groin field to protect and stabilize its beach.

#### ***5.3.1 Beach Renourishment***

Beach renourishment is widely believed to be a viable option for providing space for the natural migration of the beach/dune system for at least the “mid-term.” The Town has adopted an informal policy that maintaining its groins and future beach renourishment is the preferred method for providing space, minimizing risk, and advancing the retreat policy.

#### ***5.3.2 Other Measures***

Other erosion control measures include:

- Use of groins (in conjunction with beach nourishment and as a way to increase the longevity of a nourishment project),
- Relocation of buildings and infrastructure away from eroding shoreline

# 6.0 Needs Goals, and Implementation Strategies

## 6.1 Retreat Policy

### 6.1.1 Local Government-Mandated Beachfront Setback and Protection

#### *Regulations*

Pawleys Island 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 agreement 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.”<sup>34</sup> Pawleys Island defines this space as the area between the DHEC- OCRM baseline and the setback line.

Beach renourishment is widely believed to be a viable option for providing space for the natural migration of the beach/dune system for at least the “mid-term.” The Town has adopted an informal policy that maintaining its groins and beach renourishment are the preferred method for providing space and minimizing risks to the community.

Additionally, the Town has developed and adopted development regulations which complement the State’s retreat policy including the following:

- The Town encourages property owners to site oceanfront buildings and structures as far landward as possible.
- The Town has established a Shoreline Protection Overlay District “to protect sand dunes, critical habitat areas, and endangered wildlife species. No structure or land alteration shall be permitted unless it is in full compliance with the terms of this

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<sup>34</sup> SC Shoreline Change Advisory Committee, Report on Adapting to Shoreline Change (2009), pp 20.

shore protection regulation. The Shore Protection Overlay is generally more restrictive than DHEC-OCRM's setback line.

- The Town has established a Conservation Preservation Overlay District (CP) to preserve the estuarine land and water formations found throughout the island. This regulation is designed to “reserve such areas for the purpose to discourage any encroachment by other uses capable of adversely affecting the relatively undeveloped character of the district.”
- 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 Town will not approve construction of any other activities unless it can be shown that the activity or alteration is not likely to weaken or alter significantly the protective function of beaches and sand dunes, nor likely to prevent the formation of new dunes.

### ***6.1.2 Strategic/Voluntary Relocation of Vulnerable Properties and Infrastructure***

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 nearby lots is not possible because most of the available land on Pawleys is currently developed. Relocation anywhere else is prohibitively expensive. Furthermore there are relatively few financial assistance programs or incentives to relocate structures from beachfront lots.

### ***6.2 Strategy for Preserving and Enhancing Public Beach Access***

Existing public beach access locations and parking information is detailed Section 2.5 of this LCBMP.

The Town places an emphasis on the protection and maintenance of existing public beach access rather than on the creation of new public access. In Pawleys Island's 2009 Comprehensive Plan, a major goal of the Community Facilities Element was to "preserve and maintain beach access within the Town limits," by:

- identifying maintenance and improvement needs;
- developing funding sources to supplement maintenance activities;
- monitoring access volumes and developing methods to disseminate information on Town laws and policies;
- addressing concerns of property owners adjacent to beach access points;
- guarding against encroachments through use of setbacks and other zoning techniques; and continuing efforts to ensure beach renourishment and groin-field maintenance

# Appendix A. 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
42-0174-076-00-00	566 Myrtle Ave	0	11	A	-
42-0174-075-00-00	564 Myrtle Ave	0	9	A	-
	240 Atlantic Ave	0	5	A	-
42-0176-011-00-00	714 Springs Ave	0	5	A	-
	638 Springs Ave	0	12	A	-
42-0175-011-00-00	636 Springs Ave	0	5	A	-
42-0175-010-00-00	634 Springs Ave	0	5	A	-
42-0174-120-00-00	616 Springs Ave	0	5	A	C
42-0176-117-00-00	610 Springs Ave	0	5	A	-
42-0174-112-00-00	600 Springs Ave	0	10	A	C
	N end of County Parking Lot			-	C,E
	766 Springs Ave	14	34	A	-
42-0176-035-00-00	764 Springs Ave	8	28	A	-
42-0176-034-00-00	762 Springs Ave	7	27	A	D
42-0176-033-01-00	760 Springs Ave	21	41	A	D
42-0176-033-00-00	758 Springs Ave	18	38	A	D
42-0176-032-00-00	756 Springs Ave	22	42	A	D
42-0176-031-00-00	754 Springs Ave	15	35	A	D
42-0176-030-00-00	752 Springs Ave	14	34	A	D
42-0176-029-00-00	750 Springs Ave	16	36	A	-
42-0176-028-00-00	748 Springs Ave	8	28	A	D
42-0176-027-00-00	746 Springs Ave	14	34	A	-
42-0176-026-00-00	744 Springs Ave	0	18	A	-
42-0176-025-00-00	742 Springs Ave	8	28	A	-
42-0176-024-00-00	740 Springs Ave	0	20	A	-
42-0176-023-00-00	738 Springs Ave	N/A	N/A	A	-
42-0176-022-00-00	736 Springs Ave	6	26	A	-
42-0176-021-00-00	734 Springs Ave	4	24	A	-
42-0176-020-00-00	732 Springs Ave	3	23	A	-
42-0176-019-00-00	730 Springs Ave	11	31	A	-
42-0176-018-00-00	728 Springs Ave	14	34	A	-
	726 Springs Ave - cleared lot	N/A	N/A	-	-
42-0176-016-00-00	724 Springs Ave	9	29	A	-
42-0176-015-00-00	722 Springs Ave	0	16	A	-
42-0176-012-00-00	716 Springs Ave	0	20	A	-
42-0176-009-00-00	712 Springs Ave	0	5	A	-
42-0176-008-00-00	708 Springs Ave	0	20	A	-
42-0176-007-00-00	706 Springs Ave	0	20	A	-
42-0176-006-00-00	704 Springs Ave	0	20	A	-
42-0176-005-00-00	702 Springs Ave	0	20	A	-
42-0176-004-00-00	700 Springs Ave	0	7	A	-
42-0176-003-00-00	698 Springs Ave	0	17	A	-
42-0176-002-00-00	696 Springs Ave	0	17	A	-
42-0175-039-00-00	694 Springs Ave	0	12	A	-
	692 Springs Ave	0	20	A	-
42-0175-037-00-00	690 Springs Ave	15	35	A	-
42-0175-036-00-00	686 Springs Ave	0	20	A	-
42-0175-034-00-00	682 Springs Ave	0	20	A	-
42-0175-033-00-00	680 Springs Ave	0	20	A	C
42-0175-032-00-00	678 Springs Ave	8	28	A	C
42-0175-031-00-00	676 Springs Ave	5	25	A	C
42-0175-029-01-00	674 Springs Ave	0	12	A	C
42-0175-029-00-00	672 Springs Ave	0	13	A	C
42-0175-028-00-00	670 Springs Ave	0	13	A	-
42-0175-027-00-00	668 Springs Ave	0	13	A	-
42-0175-026-00-00	665 Springs Ave	0	13	A	-
42-0175-023-00-00	662 Springs Ave	0	16	A	-
42-0175-022-00-00	658 Springs Ave	0	5	A	-
42-0175-020-00-00	656 Springs Ave	0	16	A	-
42-0175-020-01-00	654 Springs Ave	0	13	A	-
42-0175-019-00-00	652 Springs Ave	0	20	A	-
42-0175-018-00-00	650 Springs Ave	4	24	A	-
42-0175-017-00-00	648 Springs Ave	0	16	A	-
42-0175-016-00-00	646 Springs Ave	0	16	A	-
42-0175-015-00-00	644 Springs Ave	0	20	A	-
42-0175-014-00-00	642 Springs Ave	0	16	A	-
42-0175-013-00-00	640 Springs Ave	0	20	A	-
42-0175-012-00-00	638 Springs Ave	0	12	A	-
	636 Springs Ave	0	5	A	-

42-0175-009-00-00	632 Springs Ave	0	9	A	-
42-0175-008-00-00	630 Springs Ave	0	17	A	-
42-0175-007-00-00	628 Springs Ave	12	32	A	-
42-0175-006-00-00	626 Springs Ave	16	36	A	-
42-0174-123-00-00	624 Springs Ave	0	17	A	-
42-0174-113-00-00	602 Springs Ave	10	30	A	-
	Pawleys Pier Village - S bldg (I)	20	40	A	-
	Pawleys Pier Village - N bldg (A)	14	34	A	-
42-0163-131-00-00	274 Atlantic Ave	0	7	A	-
	266-C Atlantic Ave	0	20	A	-
42-0163-107-00-00	218 Atlantic Ave	15	35	A	-

A=Habitable Structure      D=Seawall  
 B=Pool                            E=Revetment  
 C=Bulkhead

## Appendix B. Prior Studies

There have been a number of studies and reports documenting shoreline conditions along Pawleys Island – the more significant reports are summarized below:

Interim Beach Erosion Control Report on Cooperative study at Pawleys Island, Edisto Beach and Hunting Island, South Carolina, June 1949, by Department of the Army – Beach Erosion Board. This study sought to determine the best methods for preventing future beach erosion by stabilizing and improving the beaches. The report concluded that groin systems and nourishment were the best methods of stabilizing and improving the beaches at Pawleys Island. The construction of experimental groins was recommended.

Interim Report on Hurricane Survey, Pawleys Island, South Carolina, June 1955, by U.S. Army Corps of Engineers. Report described Pawleys Island's vulnerability to hurricanes dating back to the 1700s; specific damages associated with Hurricane Hazel were quantified and the breach along the southern inlet was documented

Reconnaissance Report on Beach Erosion, Pawleys Island Beach, Georgetown County, South Carolina, January 1972, by U.S. Army Corps of Engineers. This report consolidated beach erosion data and determined if further evaluation was needed. Beach nourishment was determined to be the best method for combating beach erosion. Borrow source areas were also identified in this report.

National Shoreline Study, June 1973, House Document No. 93-121 of the 93<sup>rd</sup> Congress. This study discussed the structural integrity of structures on Pawleys Island and described the migration of Pawleys Inlet, the development of the sand spit, and the construction of the existing groin field.

Beach Management Strategy for Pawleys Island, March 1981, by Cubit Engineering, Limited. This report noted historic hurricane and tropical storm damages. Visual inspections of the beachfront groins were conducted and their conditions were documented. To better provide storm protection, the report offers three separate proposals for the three distinct sections of the beach: northern, central, and southern.

A Study of Shore Erosion Management Issues and Options in South Carolina, July 1981, by South Carolina Sea Grant and South Carolina Coastal Council. This study provides the following: historical erosion trends based on aerial photography between 1937 and 1973, recommendations to install either a steel sheet-pile bulkhead or rip-rap revetment on the northern end and a recommendation to install an armor stone terminal groin at the northern end. A cost benefit analysis was also conducted.

Georgetown County Shorefront Management Plan from Garden City to North Inlet, July 1986, by Applied Technology and Management, Inc., and Olsen Associates, Inc. This plan reported a 1-2 feet/year long-term erosion rate for Pawleys Island. Twenty-five and fifty year shoreline retreat and storm erosion estimates were provided. Volumetric change estimates were also provided.

Southern Pawleys Island Special Area Management Plan, September 1987, by South Carolina Coastal Council. This plan noted the success of the groin field and recommended property owners within the groin system build a continuous bulkhead to establish a “holdline.” The plan also recommended building an ideal dune line in front of the bulkhead (note this Plan was developed prior to the passage of the SC Beachfront Management Act, which prohibits beachfront bulkheads, seawalls, and revetments within the state setback area).

Shoreline Assessment and Plan for Interim Beach Restoration along Pawleys Island, South Carolina, January 1988, by Coastal Science and Engineering, Inc. This report identified potential borrow source areas for a renourishment project. Areas critically eroded were identified and prioritized to support the renourishment activities.

Biological Monitoring of Beach Scraping at Pawleys Island, South Carolina, November 1988, by Coastal Science and Engineering, Inc. This report evaluated a previous beach scraping project. Data indicated that no long-term impacts on benthic communities were expected from this project but to proceed with caution on larger scale scraping projects.

Reconnaissance Report for Storm Damage Reduction, Pawleys Island, South Carolina, June 1989, by U.S. Army Corps of Engineers. This study investigated erosion problems experienced on Pawleys Island and evaluated three (3) potential alternatives for controlling this erosion. The study concluded that there was substantial potential for storm related damages on Pawleys but implementation of a Federally-supported beach nourishment project was not warranted.

Follow-up Letter Report, April 1990, by U.S. Army Corp of Engineers. This report re-evaluated each segment of the previous Reconnaissance Report independently. Report concluded that further Federal participation to alleviate storm damages at Pawleys was warranted but cost estimates exceeded limits for Section 103 projects. Further study under the Congressionally-authorized study for South Carolina Shores was recommended.

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