CITY OF ISLE OF PALMS
SOUTH CAROLINA DEPARTMENT OF PARKS, RECREATION & TOURISM
BEACH RENOURISHMENT
FUNDING ASSISTANCE GRANT APPLICATION

Applicant Signature 
Dick Cronin, Mayor

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Summary:

The City of Isle of Palms requests $6,932,000 from the South Carolina Department of Parks, Recreation & Tourism Beach Renourishment Funding Assistance Grant for its Beach Restoration Project. The remaining expense of this estimated $15,000,000 project will be funded by a combination of City and private funds. The City has been aggressively proactive with preserving the beach since 2007. The City has an annual contract with Coastal Science and Engineering for surveying the entire seven miles of shoreline. Further, a similar project, using a combination of public (state, county and local) and private funds, was successfully executed in 2008. The project for which the City is requesting funding is expected to be executed in 2017-18.

The proposed project will address the lack of a dry, sand beach in a long stretch of the eastern end of the island which inhibits its recreational use at high tide and curtails turtle nesting. This project will restore a dry, sand beach at all tides contributing to new emerging dune systems.

The City of Isle of Palms is a quiet barrier island and a tourism mecca at the same time. The economy of the island and the businesses within it heavily depend on tourism. The beach is the number one tourism draw. The ripple effects of the fiscal benefits to the entire surrounding area and to the State of South Carolina are huge and detailed in the application. Due to the attractiveness of the island, both as a place to live and visit, along with its proximity to one of South Carolina's most beautiful seven miles of shoreline, property values are high.

The environmental and ecological components of the island are also significant. The proposed project involves the preservation of the beach that is the nesting area of the Endangered Loggerhead Sea Turtles. Species of shorebirds frequent the beach along with microscopic benthic organisms which contribute to the overall ecosystem. Investing in the Isle of Palms beach will not only ensure continued economic growth for the state, but also protect and ensure the survival and flourishing of its environmental and ecological systems.

The entire seven (7) miles of the Isle of Palms beach is public. According to State guidelines, full and complete access exists from Breach Inlet to one quarter mile east of public beach access 57. In fact, the Isle of Palms exceeds the State Guidelines for full and complete access in numbers of access points, restroom facilities, trash collection and parking areas. Elements detailing public access are covered in the City's Local Comprehensive Beach Management Plan.

The estimated project cost is $15,004,000. The City has budgeted and has on hand $2,872,620 in tourism funds and also the City has collected and has deposited in the bank approximately $5,000,000 in private funds for the project. Based on the longevity of the prior 2008 project, it is expected that renourishment would likely be necessary in 2024-2027 making the predicted nourishment interval eight (8) to ten (10) years.

The state and federal permits have been applied for and are expected to be issued imminently. During informal meetings and dialogues with the permitting agencies, the City has not received any indication that there may be obstacles to receiving the joint permits.

Charleston is a world class destination and the Isle of Palms represents one of Charleston's most popular beaches. With beaches and water access, being the number one attraction, tourism represents a 19.1 billion dollar industry to the State of South Carolina. A healthy beach represents a dual draw—visitors stay at the beach and also visit Charleston and visitors stay in Charleston and also visit the beach. If either of those two components disappoints vacationers, the tourism experience is weakened and threatens to damage that vital South Carolina industry.

SC PRT Request:
A. Applicant Information and Commitment
The applicant must submit the following information:

The name, address, telephone number and email address of the primary point-of-contact with the local government making the application and the name, telephone number and email address of the designated liaison agent.

IOP Response:

Primary point-of-contact
Linda Lovvorn Tucker, City Administrator
City of Isle of Palms, South Carolina
Post Office Box 508
Isle of Palms, South Carolina 29451
ltucker@iop.net
843 886 6428 (Office)
843 224 4916 (Mobile)

Designated Liaison Agent
Desiree Fragoso, Assistant Administrator
City of Isle of Palms, South Carolina
Post Office Box 508
Isle of Palms, South Carolina 29451
desireef@iop.net
843 886 6428 (Office)
843 489 7327 (Mobile)

The name, address, telephone number and email address of the project consulting engineer or other agent.

Project Consulting Engineer
Steven Traynum
Coastal Science and Engineering
160 Gills Creek Parkway
Post Office Box 8056
Columbia SC 29209
straynum@coastalscience.com
803 799 8949 (Office)
803 727 3877 (Mobile)

SC PRT Request: A resolution adopted by the applicant's governing body approving the submittal of an application for beach restoration funds, and committing to the local funding requirements necessary to complete the project.

IOP Response:

Please see adopted Resolution attached. Resolution passed at City Council on August 23, 2016.

****The Chief Executive Officer of the governing body must sign the original application****

Linda Lovvorn Tucker, City Administrator

Dick Cronin, Mayor

A Resolution Approving the Submittal of an Application to State PRT For Beach Restoration Funds

WHEREAS, the City of Isle of Palms attracts millions of vacationers annually with research showing that the beaches are the primary and most favored activity with many of these vacationers enjoying the City's 7 miles of beach and 56 public beach access areas; AND

WHEREAS, the beaches drive tourism and tourism is a $19.1 billion industry in South Carolina and supports one in every 10 jobs in the Palmetto State; AND

WHEREAS, tourism, Isle of Palms only industry, is threatened by the loss of dry sand beach due to beach erosion from hurricanes and storms that have caused significant property and infrastructure damage; AND

WHEREAS, erosion has reduced the width of the dry sand beach which is necessary for the endangered loggerhead sea turtle nesting and the success of other aquatic organisms; AND

WHEREAS, the City of Isle of Palms recognizes the economic, recreational, and environmental and shore protection value that a large-scale beach renourishment project will provide to the State of South Carolina; AND

WHEREAS, the City has proceeded with planning a large-scale beach renourishment project to protect its ecology, community and livelihood; AND

WHEREAS, the City successfully accomplished a similar project in 2008 for which the beach still benefits and where the project involved State, County, City and private stakeholder funds garnering recognition for innovation by National and State organizations; AND

WHEREAS, the City's approximately $15 million large-scale beach renourishment project involves the dredging and placement of up to 1 million cubic yards of sand to restore a substantial protective beach to all areas along the eastern end of the island and thereby protecting the City's beach; AND

WHEREAS, the City proposes a similar multi-funded project involving State ($6.9M), City ($2.9M) and private stakeholders ($5.2M), thereby each paying a share of the total expense; AND

WHEREAS, the South Carolina Department of Parks, Recreation and Tourism (SCPRT) has funding available for beach renourishment through the 2016-2017 South Carolina Appropriations Act; AND

WHEREAS, the City of Isle of Palms understands that SCPRT has put in place a formal process for preparing, reviewing and administering such grants and the City is prepared to dedicate staff and other resources as needed to fully participate in the process; AND

WHEREAS, the City respectfully requests approximately 50% of the total eligible costs estimated at $13,864,000 from the beach renourishment funding assistance grant within the South Carolina Department of Parks, Recreation and Tourism, to provide for much needed funding for the City's large-scale beach renourishment project;

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF ISLE OF PALMS AS FOLLOWS:
The City Administrator is authorized to apply for the South Carolina Department of Parks, Recreation and Tourism Beach Renourishment Funding Assistance Grant and shall serve as the City's designated agent to implement the grant should it be approved.

PASSED AND APPROVED BY THE CITY COUNCIL OF THE CITY OF ISLE OF PALMS, SOUTH CAROLINA ON THE 23RD DAY OF AUGUST, 2016.

Richard Cronin, Mayor

Attest:

Marie B. Copeland, City Clerk

SC PRT Request:

B. Project Narrative and Maps

The applicant must submit a narrative description of the project which includes discussion of the following:

1. Project limits
2. Quantity of fill
3. Borrow sites
4. Expected design life of project
5. Project construction schedule and timeframe
6. Estimated first cost and annual maintenance costs
7. Source and availability of all local, state, and federal funds for the project
8. Project benefits, including environmental, economic and social
9. Environmental impacts
10. Public access to project area

IOP Response:

City of Isle of Palms Project Narrative

1-3. Project Limits, 2. Quantity of Fill and 3. Borrow Sites: The City of Isle of Palms proposes to harvest up to two (2) million cubic yards of sand from delineated borrow areas offshore. Core samples have been taken from the identified borrow areas which depict high quality beach sand with compatible sediments to the Isle of Palms' beach. The harvested sand will be pumped onto the beach and mechanically spread. All sandbags and wave dissipation devices must be removed before receiving beach restoration sand landward of these items.

The pending permit application describes the project as the proposed activity being a beach nourishment project. Work will include placement via hydraulic (cutter head) dredge of up to 2,000,000 cubic yards of beach-quality sediment along up to 19,000 feet of shoreline. The project encompasses two reaches with the first extending from 53rd Avenue east to the Wild Dunes Links Course's 18th hole and the second extending from Breach Inlet to 14th Avenue. Sand will be obtained from offshore borrow areas ~2–3 miles from the beach, situated on bathymetric high areas to reduce the potential for infilling with mud. Due to the dynamic nature of shoals attaching to the Isle of Palms beach, the exact fill limits will be determined at the time of construction; however, no fill will be placed beyond the boundaries shown in on Sheet 02 in the permit application. Fill will be placed along areas showing significant volume losses since 2008.

For the purposes of the of this application, the project limits lie at the eastern end of the beach from approximately where the beach intersects with 53rd Avenue for 2.5 miles towards Dewees Inlet. No funding has been identified for the second reach on the western end of the island; however, the City has included that area in the permit request in the event future funding is identified which might enable mobilization due to economies of scale.

Borrow Area(s) As indicated in the permit application and depicted on Figure 1, two potential borrow areas have been identified based on preliminary geotechnical borings and coordination with cultural resource agencies. Area E is shown on Sheet 08 in the permit application and encompasses ~310 acres in the vicinity of Borrow Area B, which was used during the 2008 project.

Area F is ~65 acres and is to the north and east of Area E. Coastal Science and Engineering (CSE) has obtained borings in each area to determine sediment compatibility. Both areas contain mostly clean sand with small shell hash intermixed. Most of the shell content is sand-sized material less than 2 mm. Area F is similar with a mean grain size of 0.383 mm and shell content of 27.5 percent. At the maximum volume, the project will require ~150 acres of borrow area to be utilized, leaving significant areas untouched. The City will obtain additional borings to refine the borrow areas prior to construction to maximize sediment compatibility. In CSE's conducting geotechnical investigations, it was discovered additional areas offshore of Isle of Palms which contains quality beach-compatible sand (Fig 1). The sand in these areas is clean tan sand with generally less shell material than Areas E and F, and of that, the shell material is smaller in size. While the overall mean grain size is similar to Areas E and F (Table 1), the distribution of the sand grain size is different in the two areas. Areas E and F have a higher concentration of fine-grained sand and occasional silty material with slightly larger shell fragments. The two additional areas have a slightly larger sand size and smaller shell fragments. The City initially proposed that these areas be the primary borrow areas; however, after consultation with the State Historic Preservation Office (SHPO), it was discovered that a large area offshore of Isle of Palms is being proposed to be designated as a historic district. These potential borrow areas were located within the proposed boundary. The City believes that the sand in these areas is of better, beach-fill material due to the lower fine sand and silt content, smaller shell size, and color; however, SHPO indicated that they would not agree to allow dredging of any of the area within the proposed historic district. Due to the urgent need for a comprehensive beach restoration project, the City proposes moving forward with the project using Borrow Areas E and F to avoid impacting the proposed historic district, despite the presence of more suitable fill within the district.

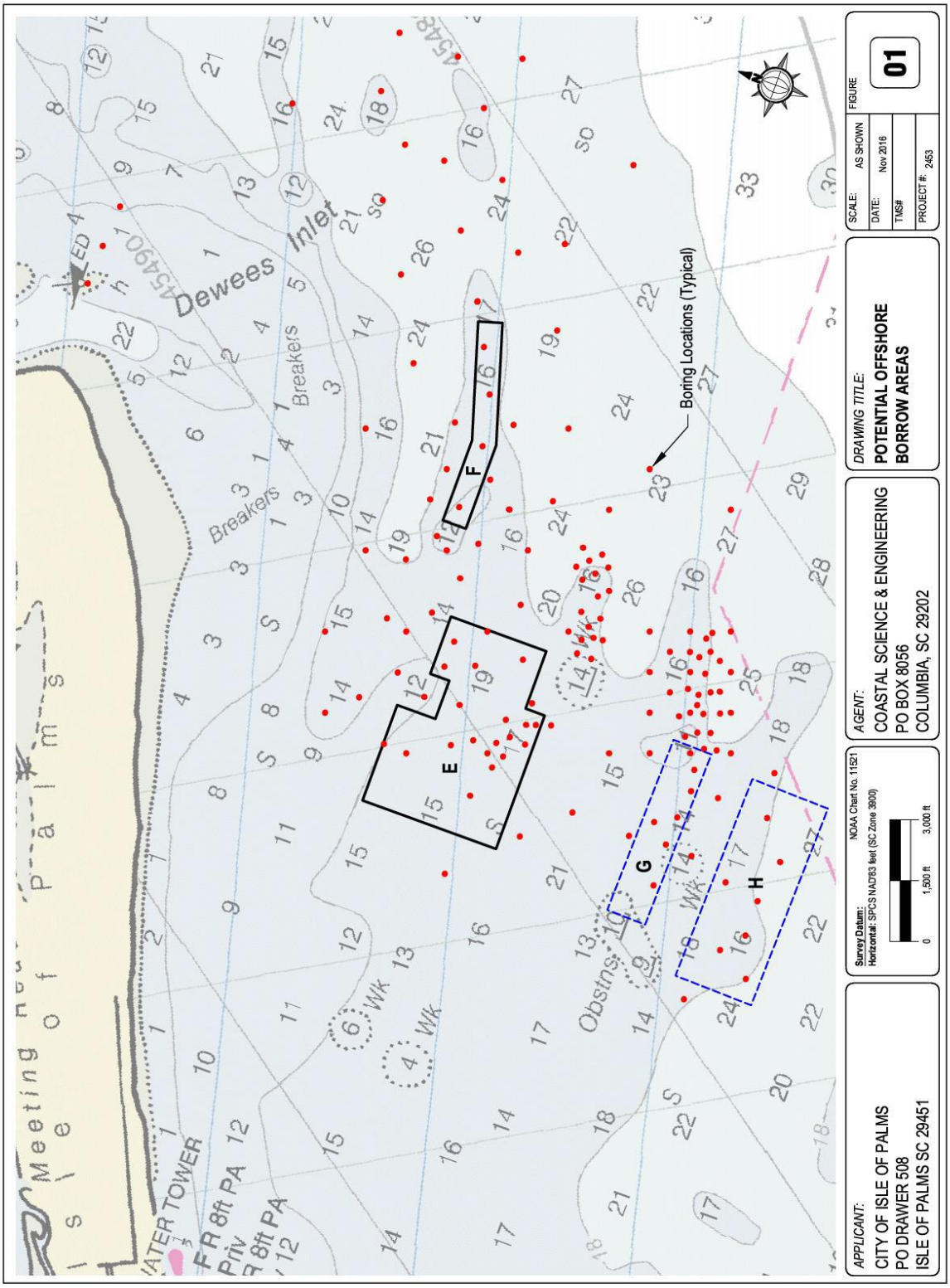


Figure 1. Map showing the location of the offshore borrow areas (black lines) and areas SHPO identified as being within the boundary of a proposed historic district (blue lines).

4. Expected Design Life of the Project: According to historic records and the current pending permit application, the previous large-scale nourishment project at Isle of Palms was completed in spring/summer of 2008. That project added ~875,000 cy of sand to the beach in three reaches between 54th Avenue and the area near the 17th hole (Stations 224+00–340+00). Additional work was completed in 2012 by transferring ~80,000 c.y. of sand from accretional areas to a localized hotspot erosional area (Stations 306+00–320+00). By 2014, erosion along this hotspot continued, and the area between Station 260+00 and Station 276+00 was also eroding. Another transfer project was completed, moving a total of ~248,000 c.y. of sand to the two erosional areas. Based on the longevity of the IOP 2008 Beach Restoration project, it is estimated that the project proposed in this application will last approximately eight (8) years to ten (10) years.

5. Project construction schedule and timeframe: The City proposes initiating the project as soon as 100% of the funding is achieved, the permits are granted and bids are within an acceptable range of budget. Ideally, the City would prefer to avoid both the busy tourism season and the Endangered Loggerhead Sea Turtle nesting season; however, the City's 2008 project was successfully accomplished during a time which had the potential for impacting both of these seasons having been initiated just after Memorial Day weekend and completed near July 4th, 2008.

The anticipated schedule for this proposed project is as follows:

Procurement	March 2017-April 2017
Contract Award	April 25, 2017
Mobilization	April 2017
Construction Period	April – June 30, 2017

Alternate Schedule:

Procurement	May 2017-June 2017
Contract Award	July 25, 2017
Mobilization	August 2017
Construction Period	August – April 2018

6. Estimated first cost and annual maintenance costs: The project is estimated to initially cost approximately $15,004,000. The City anticipates similar annual maintenance cost to that which was experienced with the 2008 project. The 2008 Beach Restoration project cost $9,265,003 for restoration. Periodic follow up maintenance costs involved shoal management projects accomplished after the 2008 restoration has cost between $470,000 and $1,050,000 depending on the volume of sand moved. Periodic shoreline follow up monitoring surveys for a project of this size have typically cost approximately $250,000 total for post project monitoring.

7. Source and availability of all local, state, and federal funds for the project

City of Isle of Palms	$2,872,620
Private Stakeholders fund balance from funds collected for previous restoration projects	$202,533
Private Stakeholders funds committed for FY17 beach restoration	$4,996,847
Amount of PRT grant funds requested *	$6,932,000
Total	$15,004,000

The City's FY 17 approved budget contains $2,872,620 allocated for this project. Private funds, being held in escrow by the City and available for this project, are in the amount of $202,533. Private stakeholders' funds received and deposited are approximately $5,000,000. The PRT grant request is for the 50% of the eligible expense or $6,932,000.

8. Project benefits, including environmental, economic and social: The benefits to the restoration of the dry sand beach on the eastern end of Isle of Palms are numerous.

The beach is the number one attraction for visitors to the Charleston area, and it is the first and most popular attraction to the Isle of Palms. While those visiting also enjoy golf, tennis, shopping and boating, it is the seven (7) miles of gently sloping beach that draws visitors to Isle of Palms.

Historically, the island has been known for its gradually sloping, wide beaches; promotional campaigns from the post-World War II era tout the safety of the beach because of these qualities. Sales brochures contained the slogan "America's Finest and Safest Beach." Tourism is the City's only industry, and thousands travel to enjoy the Isle of Palms' beach each year contributing to the $19.1 billion dollars in statewide revenue.

July 4th on the Isle of Palms Beach

Further from an economic perspective, the Isle of Palms is home to many vacation rental homes located throughout the whole island. The main attraction of vacation rental homes is the immediate access to the public beach. These homes also represent an important income producer for the state. For fiscal year 2016, the South Carolina Department of Revenue reported that 72% of all Accommodations Tax Revenues are a result of South Carolina beaches.

The Isle of Palms' percentage of vacation rentals serving Charleston tourists represents 1,300 of the 3,500 vacation rentals in the area. According to an economic impact estimate completed by the College of Charleston's Office of Economic Analysis and Tourism, in 2015, the Wild Dunes Community Association generated a total impact on the local economy of $49,388,103 and supported 356 jobs. The Wild Dunes Resort on the Isle of Palms had direct economic activity of over 79 million dollars supporting 1,607 jobs, creating a total impact amount of $137,236,390. Both of these entities together and, immediately adjacent to this proposed project area, represent a combined impact amount of $186,624,493.

The Isle of Palms is known as one of Charleston's best Beaches and in the 2016 *Post and Courier* Charleston's Choices publication, the Isle of Palms was named as the "Best Family Beach." It was also recognized by the magazine *Southern Living* as a "great beach town." South Carolina beaches are marketed on both the regional and national level, and Isle of Palms, with its proximity to the City of Charleston, is marketed as a way to stay at the beach while enjoying downtown, historic Charleston. As a family beach, the Isle of Palms hosts generations of families from year to year. The beach is the core component of Isle of Palms' tourism; therefore, restoring and preserving the beach, which is the goal of this project, will protect the beach experience and will continue to attract new and repeat visitors.

Lack of a dry-sand beach at high tide inhibits popular activities such as, building sand castles, bicycling, walking, jogging, fishing, sunbathing, kite flying and playing games such as Bocce ball, Kadima and other beach-related games commonly enjoyed in the sand. Loss of Isle of Palms' tourism industry produces a negative ripple effect on property values and the overall economic viability of the island's businesses. Loss of property values creates the potential for a corresponding property tax increase in order to maintain services to citizens and visitors. For those structures threatened by the lack of a dry-sand beach and by the potential for those structures to be undermined with water rendering them uninhabitable, not only produces negative economic impacts, but could also cause the deteriorating structures to begin to be strewn about the beach and into the active Atlantic Ocean.

Building One at Ocean Club is protected by both sand bags and a wave dissipation system

Wave Dissipation Device at Beachwood East on Isle of Palms

Ocean washing under home on Beachwood East

Sandbags being added landward of a wave dissipation system

Repairs to a wave dissipation system following a high tide

The City of Isle of Palms' proposed project will restore the dry-sand beach and dune system, which will provide natural storm protection to the adjacent private property and recreate the City's Conservation District. Properties along this district, currently threated by the erosion from the shoal attachment processes, have values in the aggregate estimated at approximately $275,000,000.

The City's zoning code places the beach in a Conservation District; this is described, in part, as a district to ensure the preservation of significant and vital natural resources and is an economically important land use for the City. This district protects property and its associated infrastructure from flood damage, provides the landscape for recreational enjoyment of the beach, which is essential to the economic viability of the City's only industry—tourism, and provides habitat for many species including endangered ones whose habitat is currently threatened.

Excerpt from the City of Isle of Palms Zoning Code
Sec. 5-4-40 CO - Conservation district
(1) Purpose.
a. To provide for an appropriate valuation that reflects the conservation use of land.
b. To ensure the preservation of significant and vital natural resources.
Code Adopted 4/26/94 5 - 5 5 Revised 06/03
c. To lessen the hazards of loss of property, life, and the reduction of health and public safety due to periodic flooding by restricting uses in such areas.
d. To provide for improved public recreation activities.
e. To provide for scenic easements to preserve the community heritage.

(2) District boundary. The CO District consists of all area within the corporate limits of the City of Isle of Palms designated as Critical Area by OCRM and contained within a line having a point of beginning at the center line of Breach Inlet between the City of Isle of Palms and the Town of Sullivan's Island at Highway 703 and running in a southerly direction along the center line of Breach Inlet to the mean low water mark of the Atlantic Ocean, thence turning and running in an easterly direction along the mean low water mark of the Atlantic Ocean along the
ocean front of the Isle of Palms to the center line of Dewees Inlet, thence turning and running in a northerly direction along the center line of Dewees Inlet to the center line of the Intracoastal Waterway, thence turning and running in a westerly direction along the center line of the Intracoastal Waterway to the center line of Hamlin Creek, and thence turning and running in a southerly direction along the center line of Hamlin Creek to the center line of Breach Inlet, thence turning and running along the center line of Breach Inlet to the point of beginning. (Ord. 2002-13, 10/22/02)

(3) Permitted uses. The following uses are permitted within the CO District so long as the use does not materially and adversely affect water quality or the natural resources of the district, and such use has received all applicable governmental regulatory approval:

a. Outdoor recreational uses including swimming, fishing, beach-going, boat ramps, docks, piers, life-guard stations and natural preserves.
b. Public utility lines.
c. A use conducted pursuant to a franchise granted by City Council.
d. A use conducted pursuant to a City-sponsored activity or event. (Ord. 2002-13, 10/22/02)

Further related to protecting economically important land uses, a significant portion of the proposed Isle of Palms Beach Restoration project will create a restored beach adjacent to the Planned Development District of Wild Dunes. The original Planned Urban District or PUD, as it was originally named, was one of the first ever created in the State of South Carolina. Developed in the early 1970's as the Isle of Palms Beach and Racquet Club on approximately 1,500 acres, Wild Dunes has become a world class resort as a four star and four diamond facility, with two, Tom Fazio golf courses, more than a dozen tennis courts, lap pools, family pools and nearing residential build out. Current Wild Dunes expansion plans are for an additional 150 room hotel representing a significant investment in the State of South Carolina and the Isle of Palms by Wild

Dunes, LLC, A Delaware Limited Liability Corporation. Lack of a healthy beach has the potential to jeopardize the success of this expansion.

9. Environmental Impacts: The environmental impacts of the proposed project are numerous. The Isle of Palms shoreline is a popular beach for the nesting habits of the Loggerhead Turtle.

The Loggerhead needs a dry sand beach for successful nesting and hatching. Loggerheads swim from the ocean and lumber to the soft sand in the dune habitat for egg-laying. Without this habitat, the Loggerhead may false crawl, which means crawling back to the water without digging a nest and laying eggs. The proposed project will re-create this habitat and, based on the post project documented results of the City's 2008 Beach Restoration Project, nesting will improve once the project is complete.

This success was evident when looking at nesting prior to the City's 2008 Beach Restoration and after the restoration. While it is a scientific fact that loggerhead nesting runs in approximately four (4) year cycles, in the eight (8) years following the 2008 project, in the area of the restored beach, 111 nests were identified, protected and produced 12,948 eggs. In the erosional years, prior to the 2008 project, only 58 nests were identified.

The current state of the eroded beach lacking the beach dune habitat can cause Loggerhead encounters with sandbags and wave dissipation devices installed to protect property.

Although the Isle of Palms beach is also a habitat for endangered Sea-beach Amaranth, it is speculated that because the Isle of Palms is at the southernmost limit of the potential historical range of the species, no populations or viable seed sources are known in the project area.

Related to bird populations, the Isle of Palms is the seasonal breeding ground for the endangered American Swallow-tailed Kite.

All of these animals and plants are important to the overall ecosystem. Although beach restoration projects may cause temporary impacts due to heavy equipment being on the beach and harvesting of sand offshore and, creating temporary changes to the sea floor, the City's 2008 project

demonstrated and measured quick recovery of those actions, confirmed by monitoring surveys carried out for three (3) years following that work. In fact, Loggerhead Turtle nesting in the project area increased on the average by 86% after the City's 2008 project restored the habitat.

Endangered Sea-beach Amaranth. Photo by Mark H. Burlas - U.S. Army Corps of Engineers

Endangered Swallow-tailed Kite. Photo courtesy of the Audubon guide

Endangered Wood Storks enjoy the Isle of Palms

As detailed in the permit application, the project has many benefits and purposes many of which translate to improved environmental conditions. They include:

- Restoring the recreational beach along the northeast erosion zone of Isle of Palms from 53rd Avenue to Dewees Inlet.
- Restoring a protective beach seaward of buildings such that dune enhancement may be initiated by the City and individual property owners.
- Placing nourishment volumes of variable section densities so as to reduce the variability of beach width caused by inlet sand-bypassing processes.
- Providing a protective buffer between existing infrastructure and the ocean.
- Eliminating the need for emergency erosion control measures.
- Improving the overall aesthetics of the beach and enhancing its recreational value.

10. Public access to project area: Any member of the public can walk, run or ride a bicycle from one end of the island's beach to the other and pause at all points in between to enjoy the beach. According to South Carolina Department of Health and Environmental Control Office of Ocean and Coastal Resources (SCHEC OCRM) standards, the City has an excess of the required number of public beach access points for full and complete access from Breach Inlet, at the island's western most point, to ¼ mile east of Beach Access 58.

According to the City's Local Comprehensive Beach Management Plan, "public beach access along Isle of Palms is excellent" Further the plan indicates that there are 56 public access points along approximately 4.5 miles of shoreline between Breach Inlet and 57th Ave (average spacing between public access points is approximately 400 feet). The three easternmost of the 56 access points (between 54th Ave. and 57th Ave.) are owned and maintained by the Wild Dunes Community Association, but have no use restrictions and are available to the general public as well.

East of 57th Ave., beach access is available via 14 community access points for residents and guests of Wild Dunes (average spacing between community access points is approximately 875 feet, or 1/6 mile). Isle of Palms public access points are identified by numbered signs (landward and seaward ends) and marked with "Beach Access" signs. The access points also have beach regulation signs, and trash and recycling receptacles, and many have dog waste collection and disposal containers. The City maintains the access paths and signs, and replaces lost or damaged signs.

Public access paths are shown on plats of the island, and the City will not permit any development or encroachments on the paths, since this would reduce or eliminate public beach access. The City routinely inspects public access paths and notifies adjacent property owners if their vegetation or property uses encroach into the public access paths, and the City requires those owners to correct the situation.

Public restrooms are available at the public beach access between 1116 and 1122 Ocean Boulevard, and at the Isle of Palms County Park.

Beach access for emergency vehicles is available at 5th Ave., 14th Ave., 25th Ave., 42nd Ave., 53rd Ave. and at the Property Owners Beach House (Wild Dunes).

Example of one of the City's emergency vehicle accesses

Further, related to public beach access, any member of the public, either an Isle of Palms resident or a tourist, may be a resort guest in the Wild Dunes Resort which comprises 1,500 acres of the eastern end of the island. Guests would include those who are renting

accommodations in the resort, playing golf at one of the two (2) golf courses or eating at one of the several restaurants. Guests to the resort have access to the beach at Beach Access 58, Grand Pavilion, Seagrove, Beachwood East (two (2) accesses), Dunecrest, Beach Club Villas, Property Owners Beach House, Summer Dunes Lane, Port O' Call, Tidewater, Mariners Walk, Shipwatch, Summerhouse, Seascape, Ocean Club, Ocean Point and Seagrass. Because the Wild Dunes Resort is a gated community, some might articulate that the adjacent beach is private; however, it is public and there is no restriction on the public's enjoyment of the beach adjacent to the Wild Dunes Resort. Additionally, while the resort is gated, it is a bit of a public/private hybrid community. The resort contains numerous short term vacation rental properties in addition to a hotel and villages. These serve as a great way to promote public access to the beach. In fact, the State of California has an agency called the Coastal Commission which is equivalent to the State of South Carolina's OCRM. The California Coastal Commission opines that short term rentals are a good way to increase public access to the beach.

Also, many municipal and county services are provided within the Wild Dunes community; the City of Isle of Palms provides garbage and recycling pick up for the full seven (7) miles of beach and provides public City services within the Wild Dunes Resort to include police and fire services, and debris and garbage collection. Likewise, Charleston County provides residential door-to-door recycling services and mosquito abatement within Wild Dunes.

The proposed project, for which funding is being requested, will protect an area of the beach that has always been considered a prime recreational area. Without the project, in certain areas at high tide, there is no sand beach so accessibility is denied by the beach condition and/or by temporary erosion control structures, such as, sand bags or wave dissipation devices/systems installed to protect property. The specific areas currently lacking beach at high tide include the popular congregating point of Grand Pavilion, Seagrove, Beachwood East and Ocean Club. Completion of this project will require removal of the temporary erosion control structures and will provide complete the access to the beach for recreational purposes.

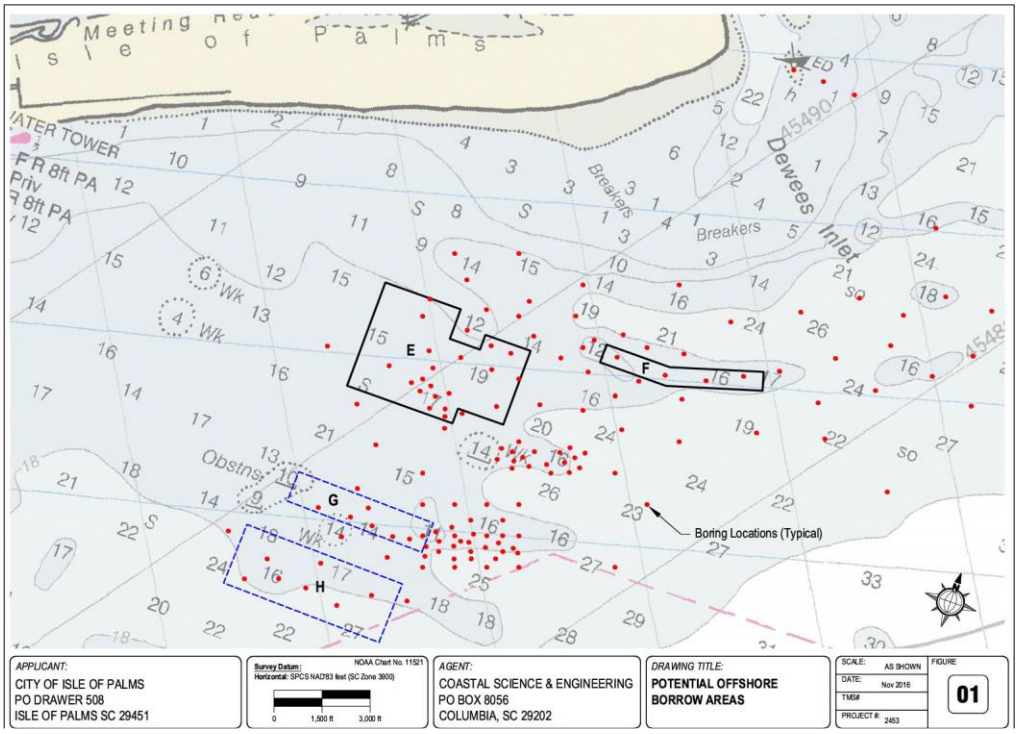
SC PRT Request:

The applicant must also submit a map or maps showing the following information relevant to the proposed project:

1. **Project site and borrow area locations**

IOP Response:

Project Site

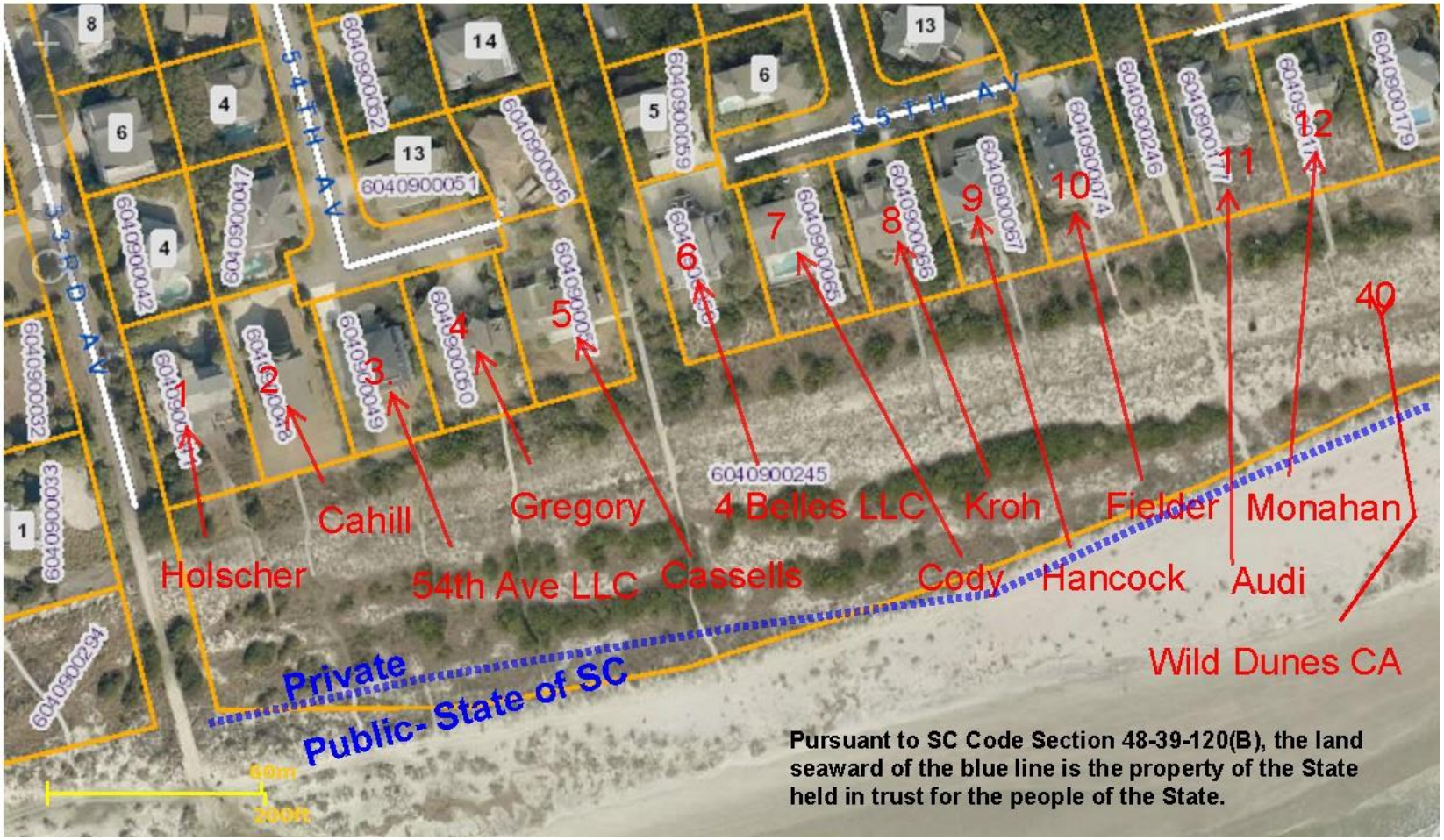


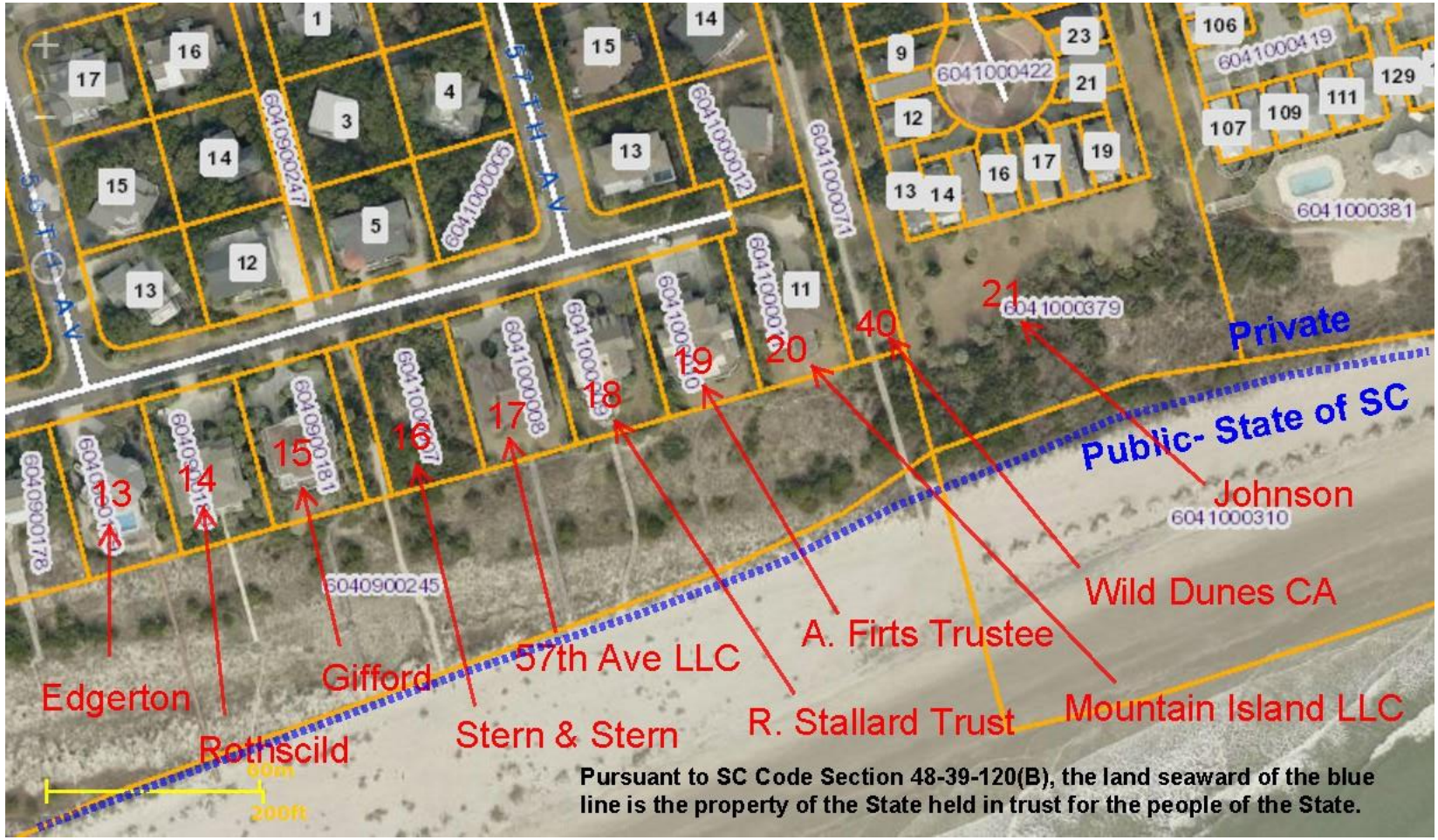
Beach Restoration Project Borrow Sites

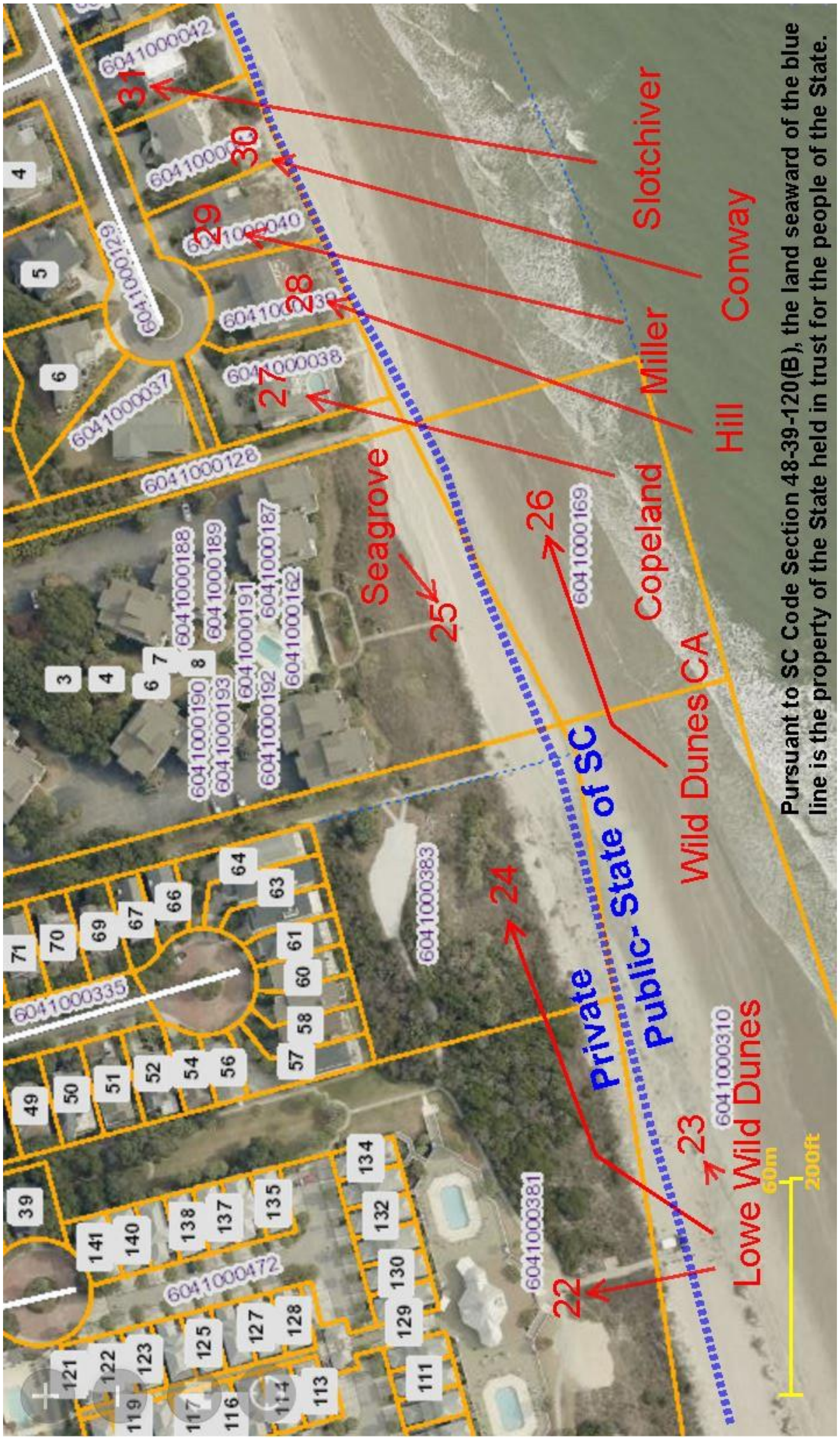
2. **SC PRT Request**: **Upland ownership of property, indicating federal, state, local or private ownership**.
   IOP Response:

Map #	First Nam	Last Name	Owner or Manager	Manager	Street #	Property street	Private/Publi	Name	Mailing Address	City	State	Zip
1	Carolyn	Holscher	Property Owner		2	53rd Avenue	Private		P.O. Box 729	Isle of Palms	SC	29451
2	Elizabeth	Cahill	Property Owner		8	54th Avenue	Private		2 Ladson Street	Charleston	SC	29401
3		54th Avenue LLC	Property Owner		9	54th Avenue	Private		8044 Montgomery Rd STE: 710	Cincinnati	OH	45236
4	William	Gregory	Property Owner		10	54th Avenue	Private		427 Windsor Terrace	Rock Hill	SC	29732
5	Patricia	Cassels	Property Owner		11	54th Avenue	Private		420 Davega Drive	Lexington	SC	29073
6		Four Belles,LLC	Property Owner		7	55th Avenue	Private		PO Box 36518	Rock Hill	SC	29732
7	Louise	Cody	Property Owner		8	55th Avenue	Private		8-55th Avenue	Isle of Palms	SC	29451
8	Scott	Kroh	Property Owner		9	55th Avenue	Private		809 Weldon Street	Latrobe	PA	15650
9	David	Hancock	Property Owner		10	55th Avenue	Private		12498 S US Highway 71	Grandview	MO	64030
10	Henry	Fiedler	Property Owner		11	55th Avenue	Private		185 North Plaza Ct	Mt Pleasant	SC	29464
11	Richard	Audi	Property Owner		7	56th Avenue	Private		16 W Lane Court	Dearborn	MI	48124
12	Alan	Monahan	Property Owner		8	56th Avenue	Private		340 Filbert Place	East Rocheste	NY	14445
13	James	Edgerton	Property Owner		9	56th Avenue	Private		PO Box 190667	Dallas	TX	75219
14	Stephen	Rothschild	Property Owner		10	56th Avenue	Private		10-56th Avenue	Isle of Palms	SC	29451
15	Paul	Gifford	Property Owner		11	56th Avenue	Private		11-56th Avenue	Isle of Palms	SC	29451
16		Stern & Stern Associates LP	Property Owner		7	57th Avenue	Private		P.O. Box 25740	Columbia	SC	29224
17		57th Avenue LLC	Property Owner		8	57th Avenue	Private		5904 Cabell View Court	Charlotte	NC	28277
18		Robert Stallard Trust	Property Owner		9	57th Avenue	Private		19324 Bluegrass Drive	Abingdon	VA	24211
19		Ann D. Fitts Trustee	Property Owner		10	57th Avenue	Private		10-57th Avenue	Isle of Palms	SC	29451
20		Mountain Island Inc	Property Owner		11	57th Avenue	Private		101 N Tryon St-#1900	Charlotte	NC	28246
21	Deborah	Johnson	Property Owner				Private	adjacent to Grand Pavilion (6041000379)	4 Grand Pavilion	Isle of Palms	SC	29451
22		Lowe Wild Dunes	Property Owner				Private	adjacent to Grand Pavilion (6041000381)	PO Box 56607	Atlanta	GA	30343
23		Lowe Wild Dunes	Property Owner				Private	adjacent to Grand Pavilion (6041000310)	PO Box 56607	Atlanta	GA	30343
24		Lowe Wild Dunes					Private	adjacent to Grand Pavilion (6041000383)	PO Box 56607	Atlanta	GA	30343
25	Kim	Pate	Property Manager	Ravenel Associates	1	Seagrove Lane	Private	Seagrove	960 Morrison Drive, Suite 100	Charleston	SC	29403
26	Dave	Kynoski	Property Owner				Private	adjacent to Seagrove (6041000169)	6200 Palmetto Drive	Isle of Palms	SC	29451
27	James	Copeland	Property Owner		8	Beachwood East	Private		4359 Riverview Drive	Duluth	GA	30097
28	Raymond	Hill	Property Owner		9	Beachwood East	Private		400 King Road NW	Atlanta	GA	30342
29	Stuart	Miller	Property Owner		10	Beachwood East	Private		10 Beachwood East	Isle of Palms	SC	29451
30	Paul	Conway	Property Owner		11	Beachwood East	Private		50 Beacon St. - #1	Boston	MA	2108
31	Carole L	Slotchiver	Property Owner		12	Beachwood East	Private		44 State Street	Charleston	SC	29401
32	James	Bernstein	Property Owner		13	Beachwood East	Private		1945 Madison Road	Cincinnati	OH	45206
33	Kathryn	Balazs	Property Owner		14	Beachwood East	Private		1029 Thicket Walk	Dayton	OH	45429
34	Frank	Skinner	Property Owner		15	Beachwood East	Private		675 Tuxedo Place	Atlanta	GA	30342
35	William	Longfield	Property Owner		16	Beachwood East	Private		37 Meeting Street	Charleston	SC	29401-
36	Michael	Safdi	Property Owner		17	Beachwood East	Private		2836 Losantiridge Avenue	Cincinnati	OH	45213
37	Craig	Nitterhouse	Property Owner		18	Beachwood East	Private		900 Kriner Road East	Chambersburg	PA	17202-

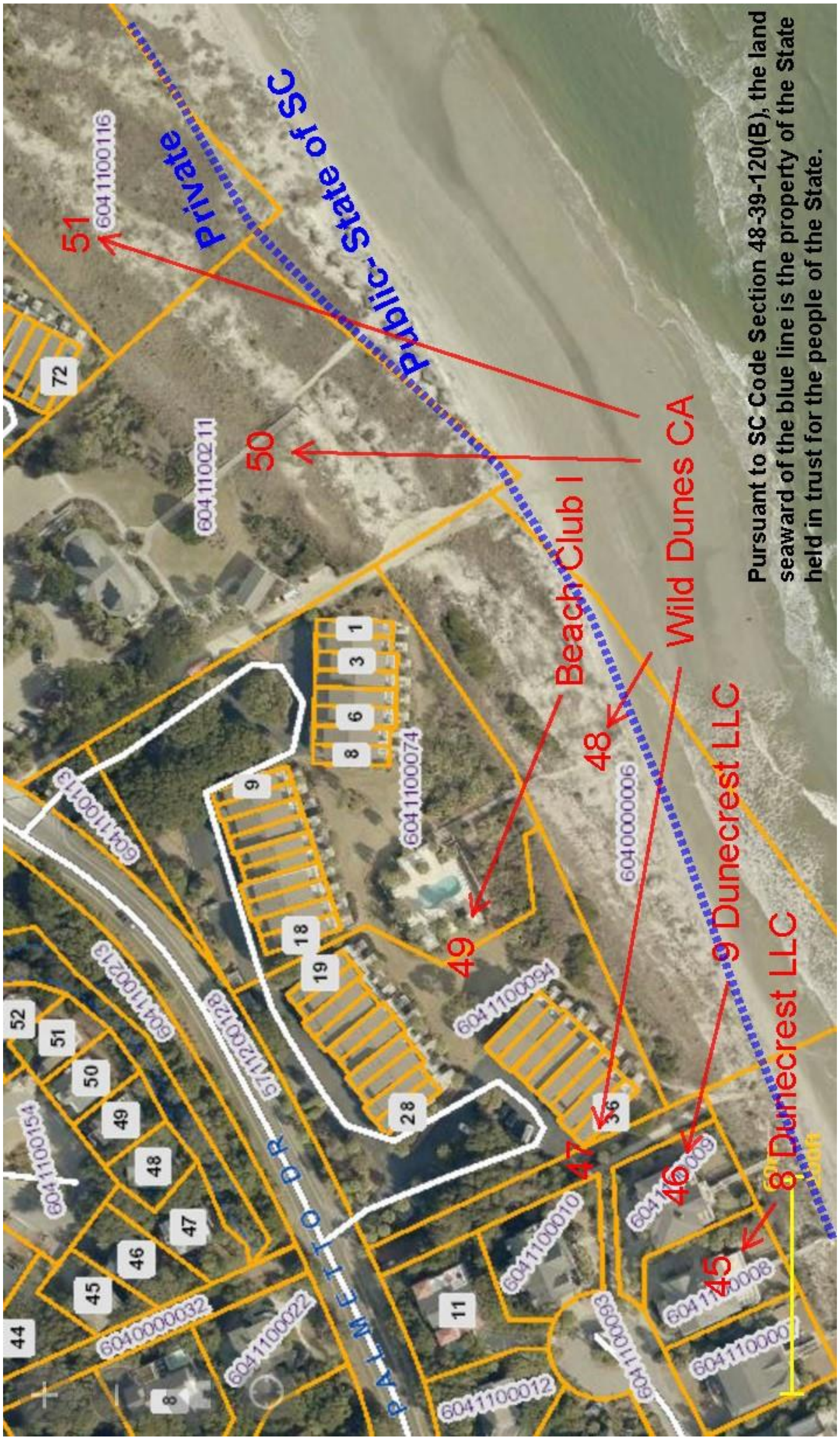
Map #	First Nam	Last Name	Owner or Manager	Manager	Street #	Property street	Private/Publi	Name	Mailing Address	City	State	Zip
38	Hasmukh	Rama	Property Owner		19	Beachwood East	Private		60 Pointe Circle	Greenville	SC	29615
39	Lauren	Kutcher	Property Owner		20	Beachwood East	Private		10410 West Loyola Drive	Los Altos Hills	CA	94024
40	Dave	Kynoski	Property Owner				Private	beach in front of 54th to 57th and beach accesses at 57th and Dunecrest	6200 Palmetto Drive	Isle of Palms	SC	29451
41	Marilyn	Edwards	Property Owner		4	Dunecrest Lane	Private		4 Dunecrest Lane	Isle of Palms	SC	29451
42	Paul	Friedberg	Property Owner		5	Dunecrest Lane	Private		5 Dunecrest Lane	Isle of Palms	SC	29451
43	Ernest	Rodenberg	Property Owner		6	Dunecrest Lane	Private		6 Dunecrest Lane	Isle of Palms	SC	29451
44	Pamela	Cheney	Property Owner		7	Dunecrest Lane	Private		715 Ivy Avenue	Glendale	OH	45246-
45		8 Dunecrest LLC	Property Owner		8	Dunecrest Lane	Private		1115 Ideal Way	Charlotte	NC	28207-
46		9 Dunecrest LLC	Property Owner		9	Dunecrest Lane	Private		119 Blair Road	Belton	SC	29627
47	Dave	Kynoski	Property Owner		6400	Palmetto Drive	Private	beach path adjacent to Beach Club I	6200 Palmetto Drive	Isle of Palms	SC	29451
48	Dave	Kynoski	Property Owner		6400	Palmetto Drive	Private	adjacent to Beach Club I	6200 Palmetto Drive	Isle of Palms	SC	29451
49	Morrison	Steve	Property Manager	Ravenel Associates	6400	Palmetto Drive	Private	Beach Club I	960 Morrison Drive, Suite	Mount Pleasan	SC	29403
50	Dave	Kynoski	Property Owner		6600	Palmetto Drive	Private	WDCA Owner's Club House	6500 Palmetto Drive	Isle of Palms	SC	29451
51	Dave	Kynoski	Property Owner				Private	beach adjacent to Beach Club II	6500 Palmetto Drive	Isle of Palms	SC	29451
53	Robert	Hemphill	Property Manager	Ravenel Associates	6800	Palmetto Drive	Private	Beach Club II	960 Morrison Drive, Suite	Mount Pleasan	SC	29403
54	Laurie	Scheuler	Property Manager	Property Management Services	7000	Palmetto Drive	Private	Mariner's Walk	1340 Ben Sawyer	Mount Pleasan	SC	29464
55	Dave	Kynoski	Property Owner				Private	beach adjacent to Mariners Walk, Shipwatch and Summer Dunes Lane	6500 Palmetto Drive	Isle of Palms	SC	29451
56	Lona	Vest	Property Manager	Property Management Services	8000	Palmetto Drive	Private	Summerhouse	1340 Ben Sawyer	Mount Pleasan	SC	29464
57	Kenneth	Drake	Property Owner		6	Summer Dunes Lane	Private		Post Office Box 482	Royston	GA	30622
58	Randolph	Keuch	Property Owner		7	Summer Dunes Lane	Private		11 Rose Lane	Chalfont	PA	18914
59	Neal	Gogol	Property Owner		8	Summer Dunes Lane	Private		5810 Stoneleigh Drive	Suwanee	GA	30024
60	Craig	Kessler	Property Owner		9	Summer Dunes Lane	Private		7908 Springer Road	Bethesda	MD	20817
61		Summer Dunes Property Owners	Property Owner				Private	beach adjacent to Tidewater	128 White Birch Circle	Columbia	SC	29223-
62	Kim	Pate	Property Manager	Ravenel Associates	8500	Palmetto Drive	Private	Tidewater	960 Morrison Drive, Suite 100	Mount Pleasan	SC	29403
.	Kim	Pate	Property Manager	Ravenel Associates	9000	Palmetto Drive	Private	Port-O-Call	960 Morrison Drive, Suite 100	Mount Pleasan	SC	29403
64	Dave	Kynoski	Property Owner				Private	beach adjacent to Port O Call	6500 Palmetto Drive	Isle of Palms	SC	29451
65	Lona	Vest	Property Manager	Property Management	9002	Palmetto Drive	Private	Seascape	1340 Ben Sawyer	Mount Pleasan	SC	29464
66	Matthew	Bennett	Property Manager	Poston & Co	9510	Palmetto Drive	Private	Ocean Club	304 Meeting Street	Charleston	SC	29401
67		Lowe Wild Dunes	Property Owner				Private	Wild Dunes golf course	PO Box 56607	Atlanta	GA	30343
68	Linda	Jernigan	Property Manager	Shipwatch Properties	7600	Palmetto Drive	Private	Shipwatch	7600 Palmetto Drive	Isle of Palms	SC	29451
	Frank	Fredericks	Property Owner			Lowe Wild Dunes Investors	Private		5757 Palm Boulevard	Isle of Palms	SC	29451


1
2
3
4
5
6
7
8
9
10
11
12
40
Holscher
Cahill
54th Ave LLC
Gregory
Cassells
4 Belles LLC
Cody
Kroh
Hancock
Fielder
Audi
Monahan
Wild Dunes CA
Private
Public- State of SC
6040900245
Pursuant to SC Code Section 48-39-120(B), the land seaward of the blue line is the property of the State held in trust for the people of the State.

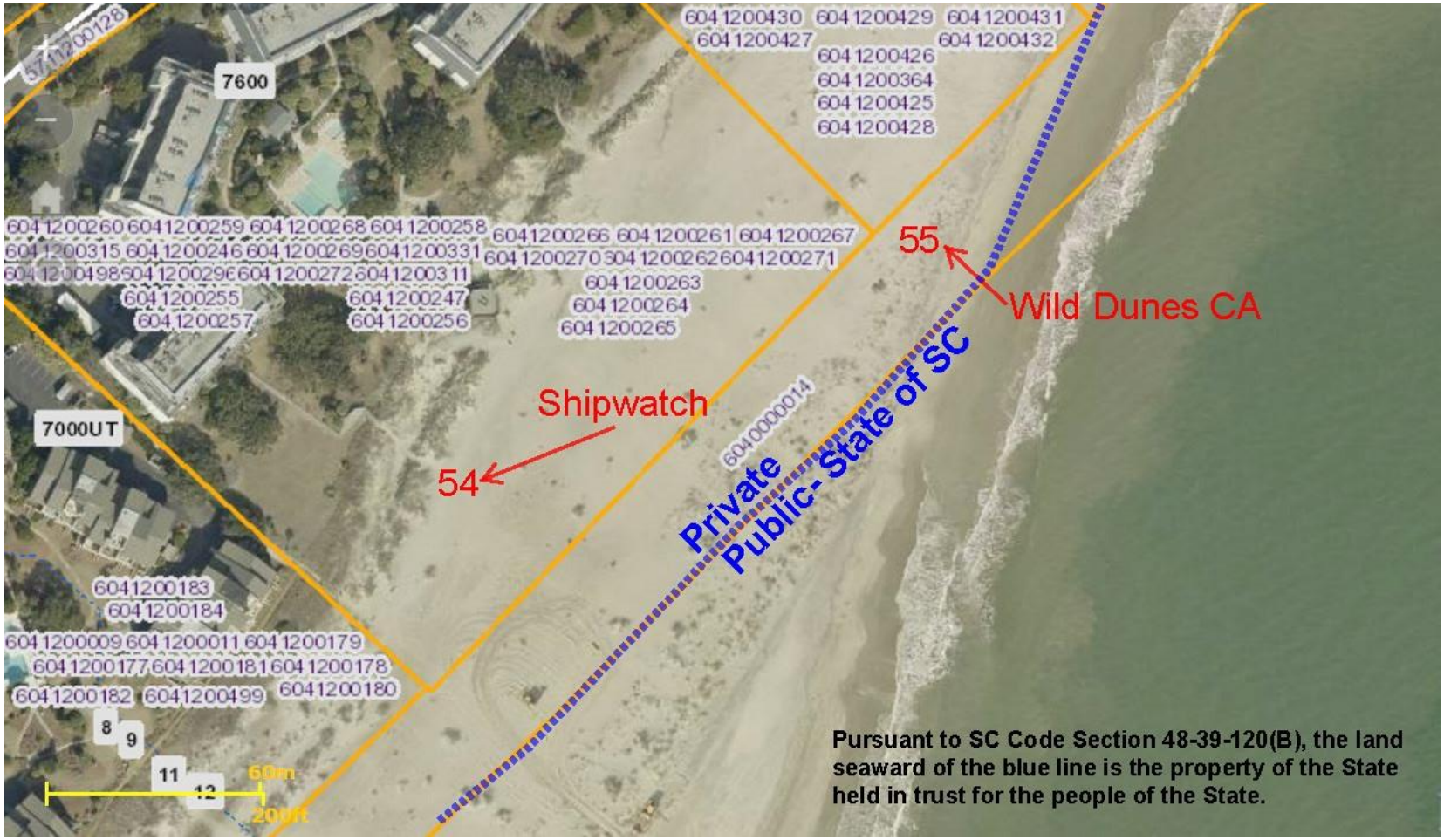

57TH AV
Private
Public- State of SC
Johnson
6041000310
Wild Dunes CA
A. Firts Trustee
Mountain Island LLC
R. Stallard Trust
Stern & Stern
57th Ave LLC
Gifford
Rothscild
Edgerton
6040900245
6041000422
6041000379
6041000381
6041000419
Pursuant to SC Code Section 48-39-120(B), the land seaward of the blue line is the property of the State held in trust for the people of the State.

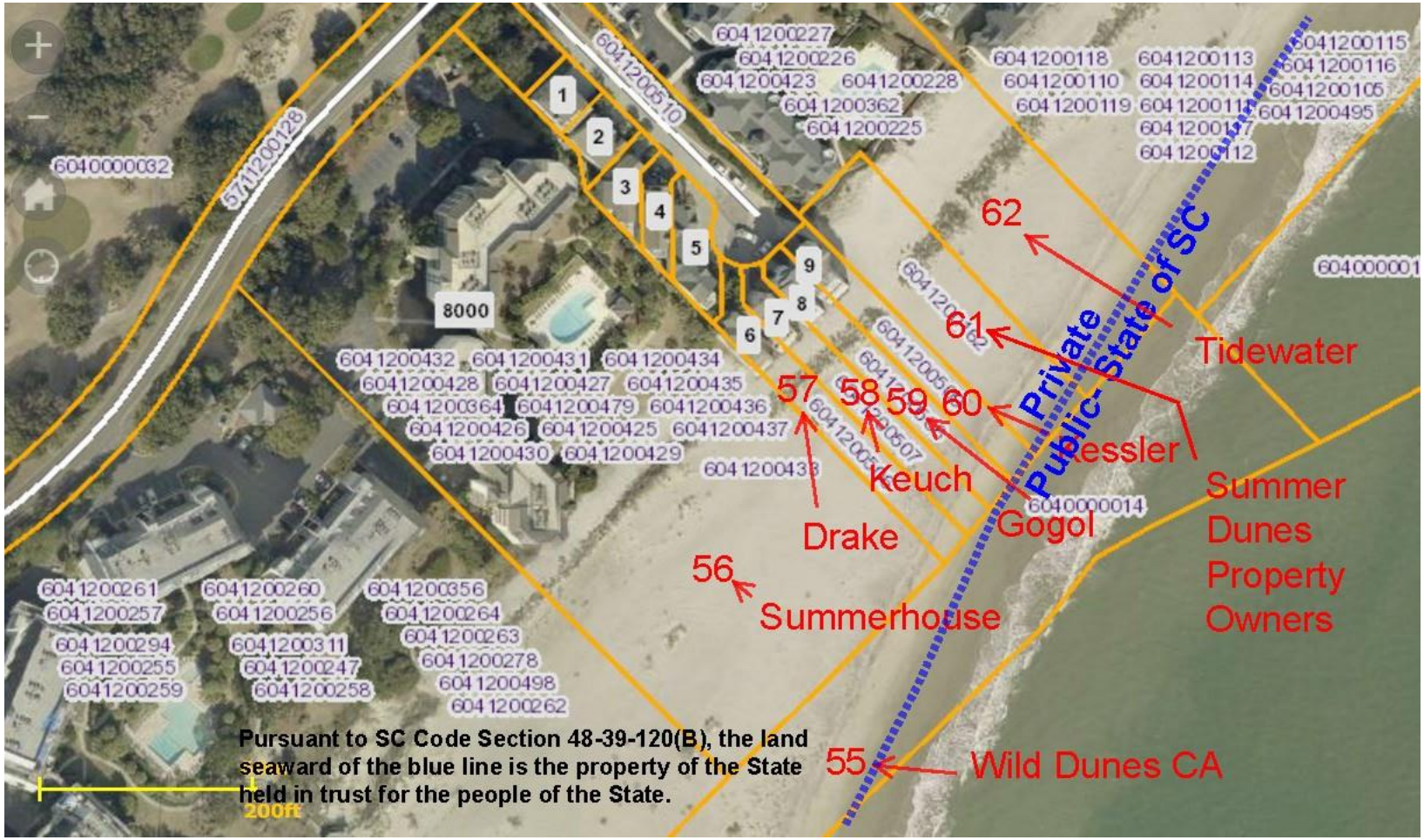

Pursuant to SC Code Section 48-39-120(B), the land seaward of the blue line is the property of the State held in trust for the people of the State.
Private
Public- State of SC
Lowe Wild Dunes
Wild Dunes CA
Seagrove
Copeland
Hill
Miller
Conway
Slotchiver
22
23
24
25
26
27
28
29
30
31
6041000381
6041000310
6041000383
6041000169
6041000128
6041000037
6041000038
6041000129
6041000042
6041000472
6041000335
60m
200ft


Private
Public- State of SC
Cheney
Friedberg
Rodenberg
Edwards
Wild Dunes CA
Kutcher
Rama
Safdi
Nitterhouse
Longfield
Balazs
Skinner
Bernstein
60m
200ft
Pursuant to SC Code Section 48-39-120(B), the land seaward of the blue line is the property of the State held in trust for the people of the State.


Private
Public- State of SC
Wild Dunes CA
Beach Club I
9 Dunecrest LLC
8 Dunecrest LLC
51
50
49
48
47
46
45
6041100116
6041100211
6041100074
6040000006
6041100094
6041100113
6041100213
5711200128
6041100154
6040000032
6041100022
6041100010
6041100083
6041100012
PALMETTO DR
Pursuant to SC Code Section 48-39-120(B), the land seaward of the blue line is the property of the State held in trust for the people of the State.

Pursuant to SC Code Section 48-39-120(B), the land seaward of the blue line is the property of the State held in trust for the people of the State.
Private
Public - State of SC
Wild Dunes CA
51
Beach Club II
52
6041200187
6041200188
6041200186
6040000014
6041200189
6041200190
6041200192
6041200193
6041200196
6041200011
6041200194
6041200191
6041100115
6041100116
6041100114
6041100211
5711200128
6041100212
6041100154
9
11
37
44
45
54
64
65
69
72
7
8
9
60m
200ft


7600
7000UT
6041200430
6041200429
6041200431
6041200427
6041200432
6041200426
6041200364
6041200425
6041200428
6041200260
6041200259
6041200268
6041200258
6041200315
6041200246
6041200269
6041200331
6041200266
6041200261
6041200267
6041200270
6041200262
6041200271
6041200263
6041200264
6041200265
6041200255
6041200257
6041200247
6041200256
55
Wild Dunes CA
Shipwatch
54
6040000014
Private
Public- State of SC
6041200183
6041200184
6041200009
6041200011
6041200179
6041200177
6041200181
6041200178
6041200182
6041200499
6041200180
8
9
11
12
60m
20ft
Pursuant to SC Code Section 48-39-120(B), the land seaward of the blue line is the property of the State held in trust for the people of the State.


6041200227
6041200226
6041200423
6041200228
6041200362
6041200225
6041200118
6041200113
6041200115
6041200110
6041200114
6041200116
6041200119
6041200111
6041200105
6041200117
6041200495
6041200112
6040000032
6041200128
6041200510
1
2
3
4
5
6
7
8
9
8000
62
61
60
59
58
57
Private
Public- State of SC
Tidewater
Kessler
Summer
Dunes
Property
Owners
Keuch
Drake
Gogol
6040000014
56
Summerhouse
55
Wild Dunes CA
6041200432
6041200431
6041200434
6041200428
6041200427
6041200435
6041200364
6041200479
6041200436
6041200426
6041200425
6041200437
6041200430
6041200429
6041200438
6041200261
6041200257
6041200260
6041200256
6041200356
6041200264
6041200263
6041200278
6041200498
6041200262
6041200294
6041200255
6041200259
6041200311
6041200247
6041200258
Pursuant to SC Code Section 48-39-120(B), the land seaward of the blue line is the property of the State held in trust for the people of the State.
200ft


6040000032
9000
101
304
6040500140
6040500011
6041200371
6041200372
6041200370
6041200376
6041200369
6041200404
6041200411
6041200368
6041200377
6041200378
6041200367
6041200373
6041200374
6041200366
6041200119
6041200117
6041200112
6041200115
6041200110
6041200118
6041200116
6041200111
6041200114
6041200113
6041200055
6041200046
6041200054
6041200495
6041200053
6041200422
6041200362
6041200496
6041200421
6041200424
6041200423
6041200510
6041200162
6041200509
2
3
4
5
6
7
8
9
63
Port-O-Call
Private
Public- State of SC
Wild Dunes CA
6040000015
64
Pursuant to SC Code Section 48-39-120(B), the land seaward of the blue line is the property of the State held in trust for the people of the State.


9510
1101
6040500006
6040000032
571120012B
6040500148
6040500048
6040500033
6040500031
6040500149
6040500044
6040500152
6040500154
6040500188
6040500032
6040500155
6040500011
6040500004
6040500003
6040500158
6040500001
6040500157
6040500009
6040500008
6040500007
6040500156
6040500161
6040500159
66
9002
6041200404
6041200405
6041200406
6041200413
6041200409
6041200410
6041200252
6041200411
6041200365
65
6041200412
6041200383
6041200366
6041200407
6041200408
6041200367
9000
101
6041200115
6041200119
6041200111
6041200118
6041200116
6041200113
6041200048
6041200114
6041200047
6041200112
6041200110
6041200117
6041200045
60m
200ft
Private
Public - State of SC
Ocean Club
Seascape
Pursuant to SC Code Section 48-39-120(B), the land seaward of the blue line is the property of the State held in trust for the people of the State.

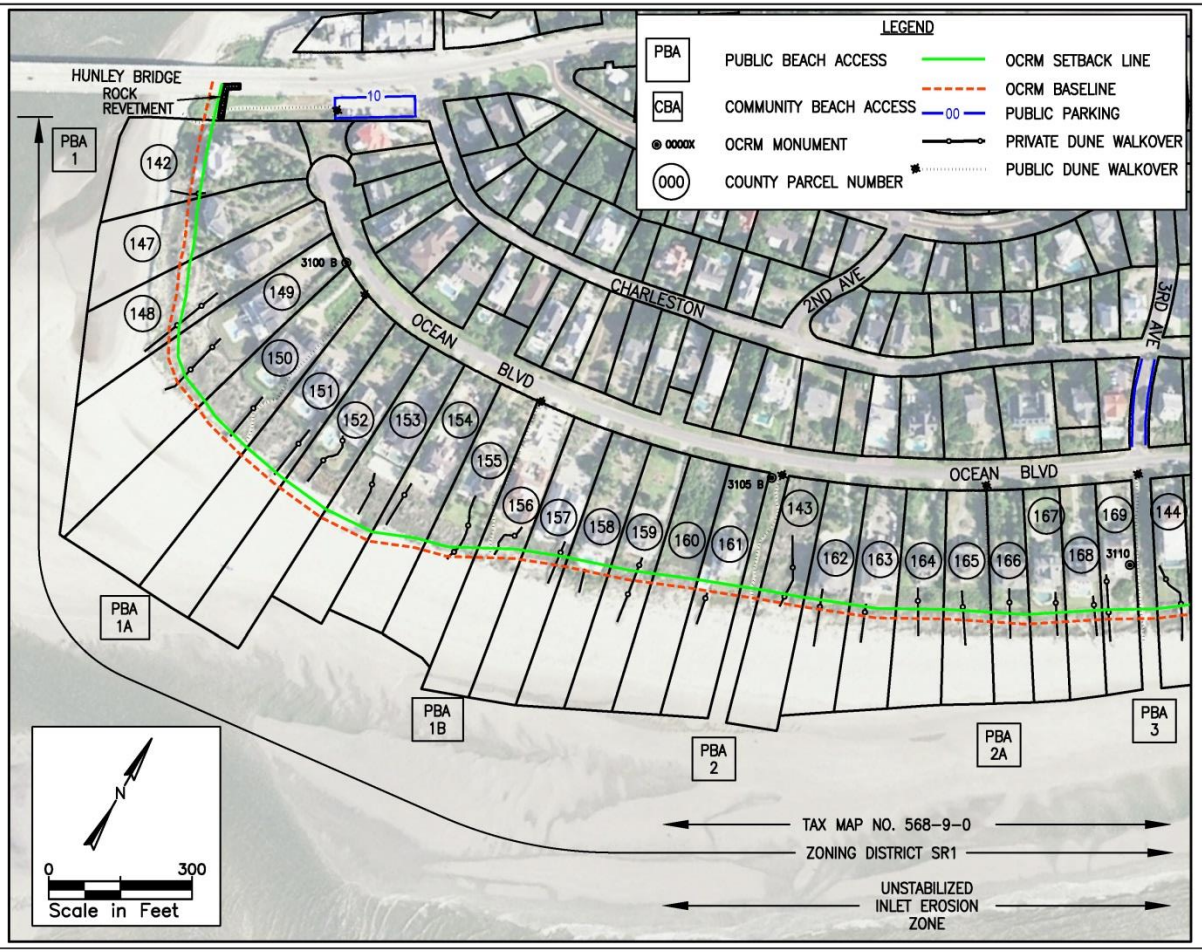

6040500185
6040500005
4504
4401
4205
4106
1510
6040500158
6040500160
6040500161
6040500154
6040500153
6040500152
6040500011
6040500151
6040500157
6040500148
6040500188
6040500159
6040500155
6040500150
6040500156
6040500149
9510
1106
1101
60m
200ft
6040500005
6040000033
Private
Public- State of SC
67
Lowe Wild Dunes
Pursuant to SC Code Section 48-39-120(B), the land seaward of the blue line is the property of the State held in trust for the people of the State.


15
16
17
18
19
20
22
23
25
26
27
28
29
32
33
35
36
38
39
41
43
45
46
47
6040500101
6040500174
6040500065
6040000032
Private
Public- State of SC
67
Lowe Wild Dunes
6040500021
6040500020
6040500001
6040500018
6040500017
6040500026
6040500016
6040500011
6040500025
6040500019
6040500023
6040500022
6040500024
200ft
4401
Pursuant to SC Code Section 48-39-120(B), the land seaward of the blue line is the property of the State held in trust for the people of the State.

SC PRT Request:

3. Public Access Points

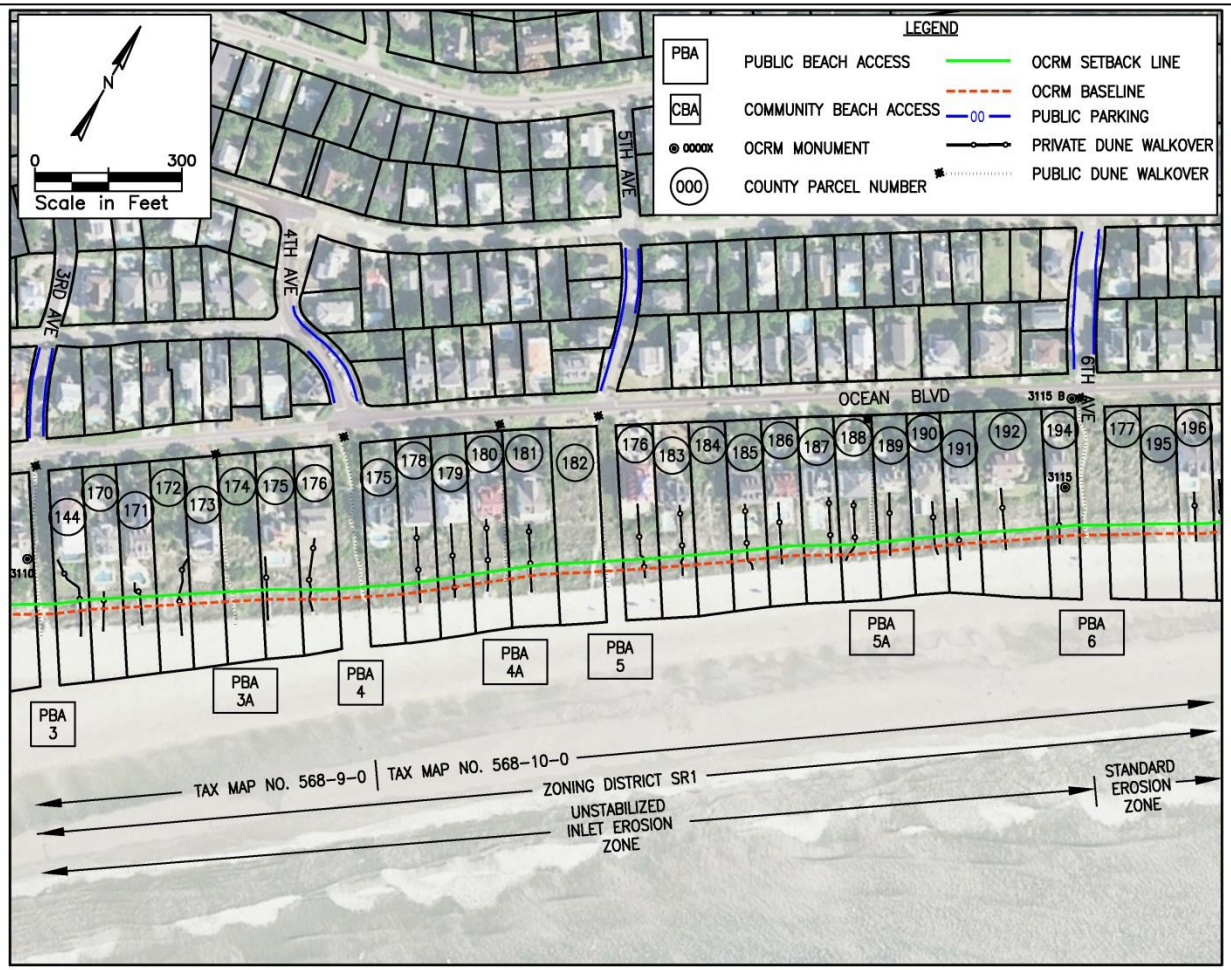
IOP Response: maps provided



ISLE OF PALMS, BEACH MANAGEMENT PLAN (SHEET 163)

SOURCE: 2015 AERIAL PHOTOGRAPHY OBTAINED FROM USGS WEBSITE.
2016 PROPERTY LINES OBTAINED FROM CHARLESTON COUNTY GIS.
2009 SETBACK & BASELINE OBTAINED FROM SCDHEC/OCRM.

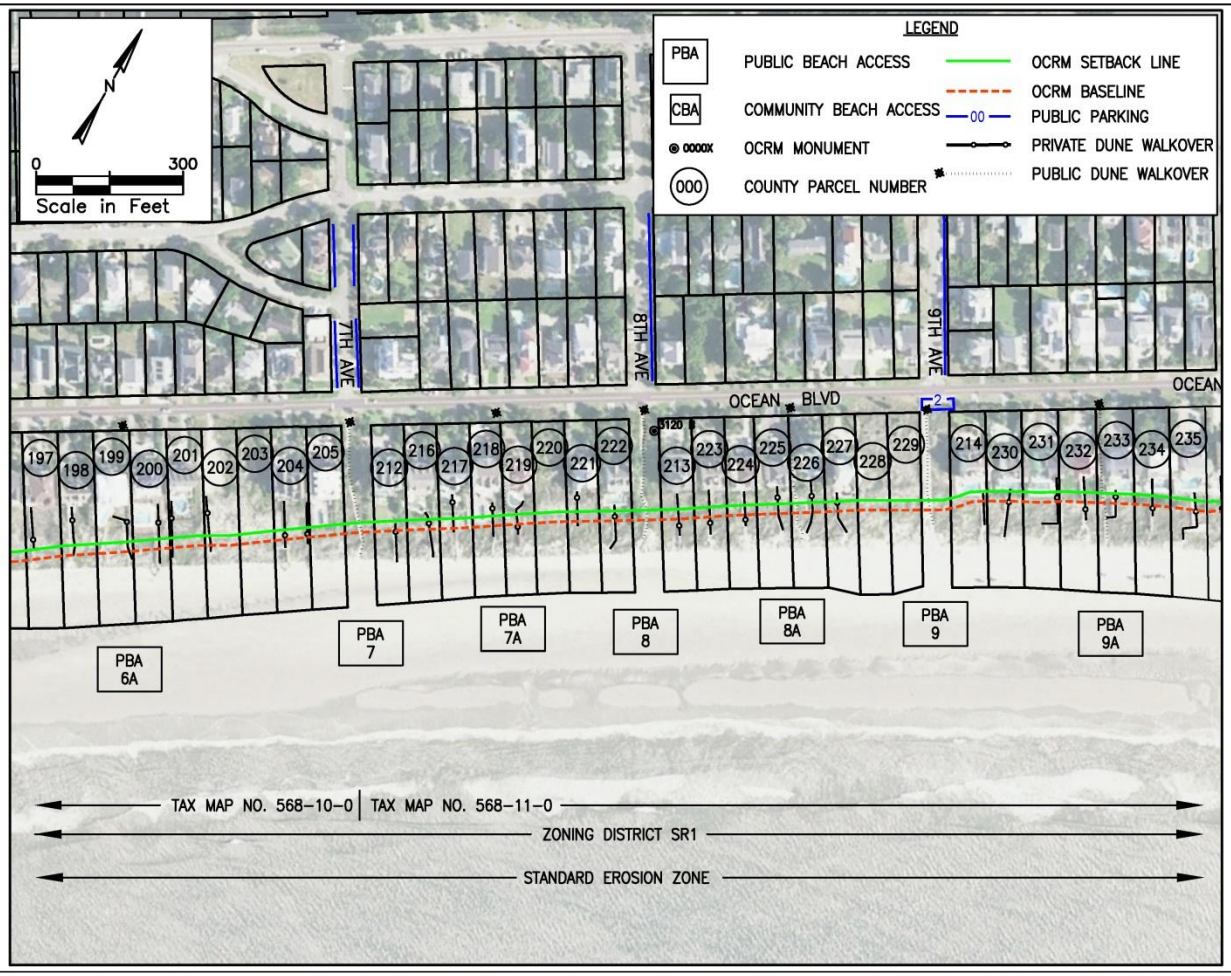
ATM
APPLIED TECHNOLOGY & MANAGEMENT



ISLE OF PALMS, BEACH MANAGEMENT PLAN (SHEET 164)

SOURCE: 2015 AERIAL PHOTOGRAPHY OBTAINED FROM USGS WEBSITE.
2016 PROPERTY LINES OBTAINED FROM CHARLESTON COUNTY GIS.
2009 SETBACK & BASELINE OBTAINED FROM SCDHEC/OCRM.

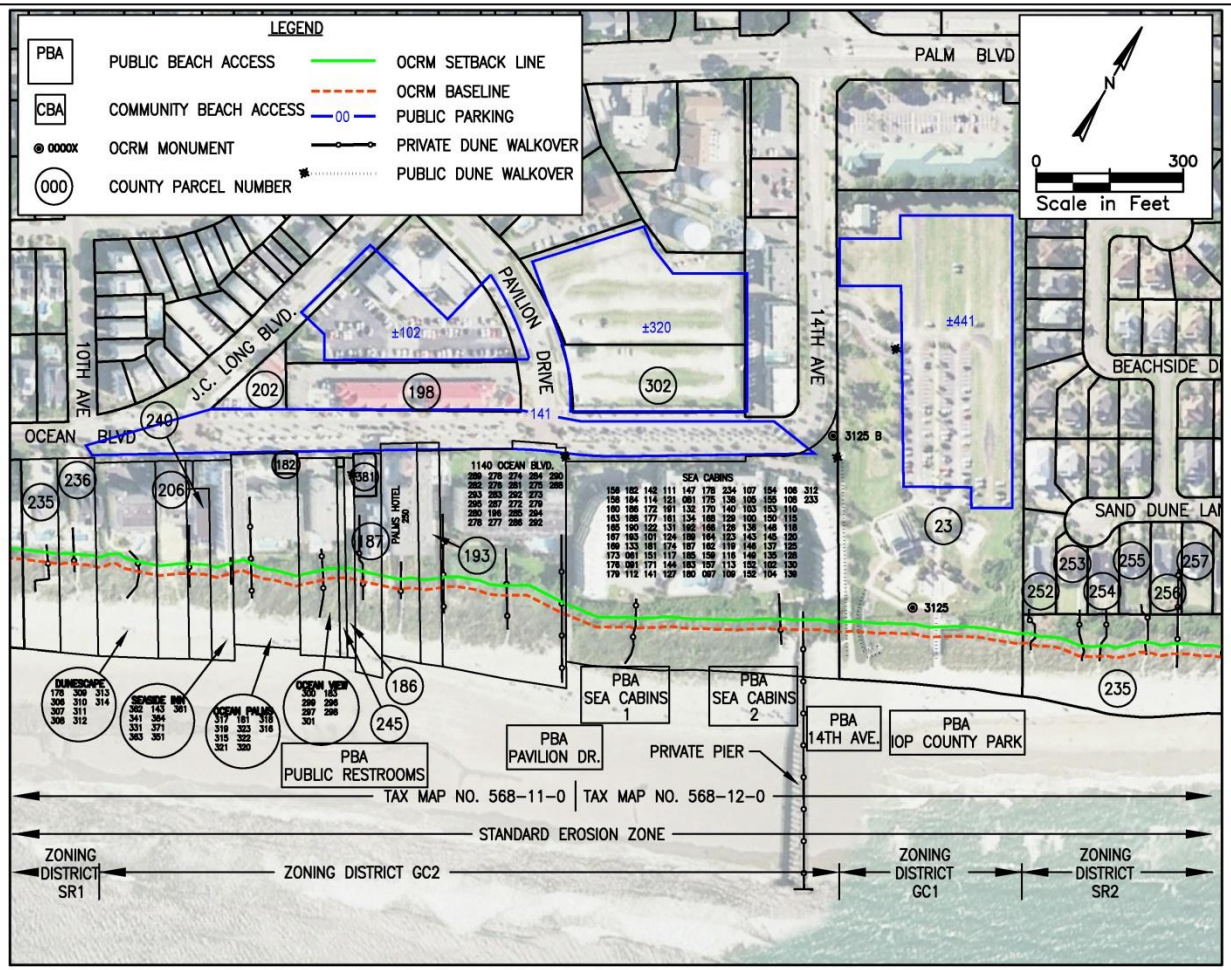
ATM
APPLIED TECHNOLOGY & MANAGEMENT



ISLE OF PALMS, BEACH MANAGEMENT PLAN (SHEET 165)

SOURCE: 2015 AERIAL PHOTOGRAPHY OBTAINED FROM USGS WEBSITE.
2016 PROPERTY LINES OBTAINED FROM CHARLESTON COUNTY GIS.
2009 SETBACK & BASELINE OBTAINED FROM SCDHEC/OCRM.

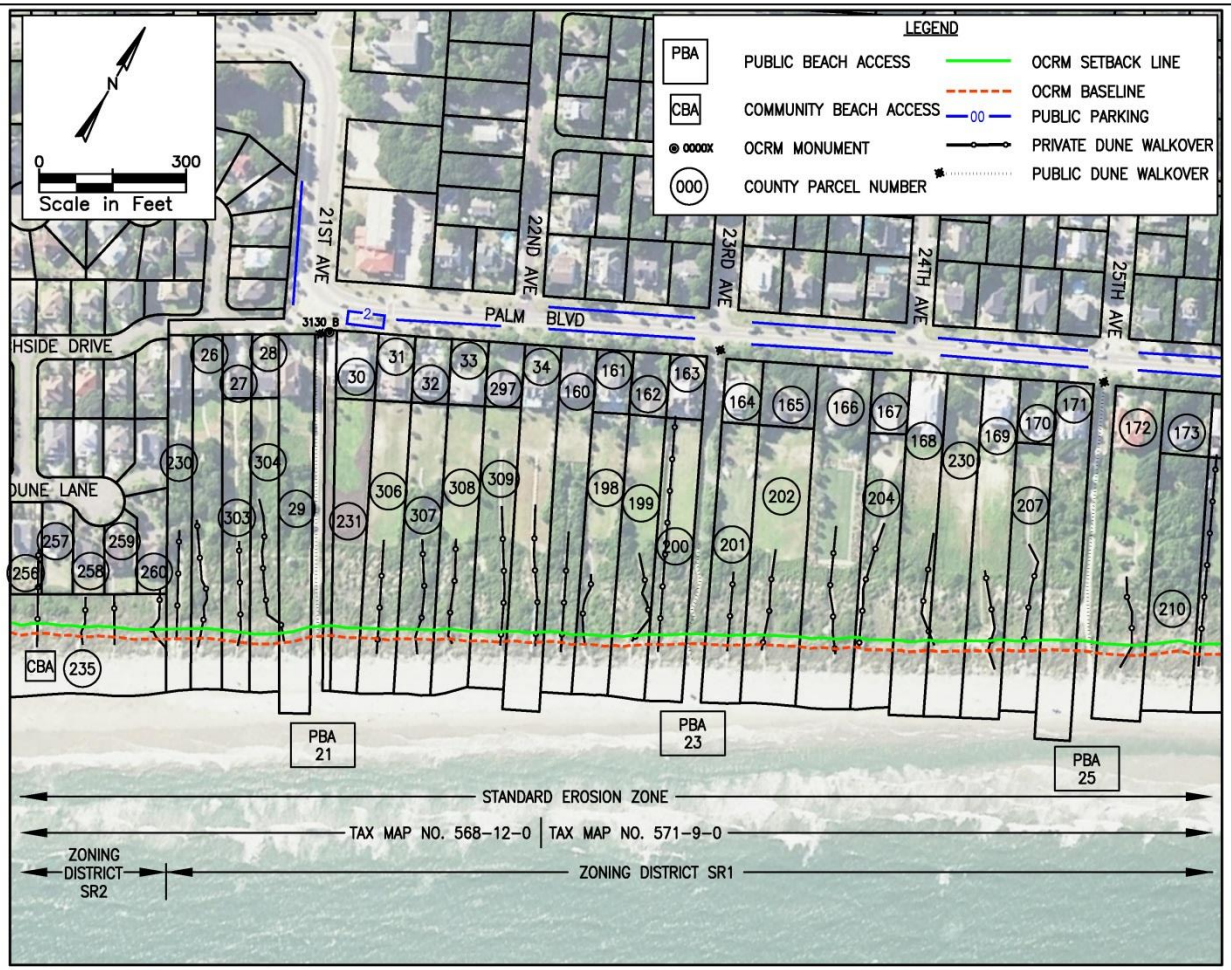
ATM APPLIED TECHNOLOGY & MANAGEMENT



ISLE OF PALMS, BEACH MANAGEMENT PLAN (SHEET 166)

SOURCE: 2015 AERIAL PHOTOGRAPHY OBTAINED FROM USGS WEBSITE.
2016 PROPERTY LINES OBTAINED FROM CHARLESTON COUNTY GIS.
2009 SETBACK & BASELINE OBTAINED FROM SCDHEC/OCRM.

ATM APPLIED TECHNOLOGY & MANAGEMENT



ISLE OF PALMS, BEACH MANAGEMENT PLAN (SHEET 167)

SOURCE: 2015 AERIAL PHOTOGRAPHY OBTAINED FROM USGS WEBSITE.
2016 PROPERTY LINES OBTAINED FROM CHARLESTON COUNTY GIS.
2009 SETBACK & BASELINE OBTAINED FROM SCDHEC/OCRM.

ATM APPLIED TECHNOLOGY & MANAGEMENT

ISLE OF PALMS, BEACH MANAGEMENT PLAN (SHEET 168)

SOURCE: 2015 AERIAL PHOTOGRAPHY OBTAINED FROM USGS WEBSITE.
2016 PROPERTY LINES OBTAINED FROM CHARLESTON COUNTY GIS.
2009 SETBACK & BASELINE OBTAINED FROM SCDHEC/OCRM.

ATM APPLIED TECHNOLOGY & MANAGEMENT

ISLE OF PALMS, BEACH MANAGEMENT PLAN (SHEET 169)

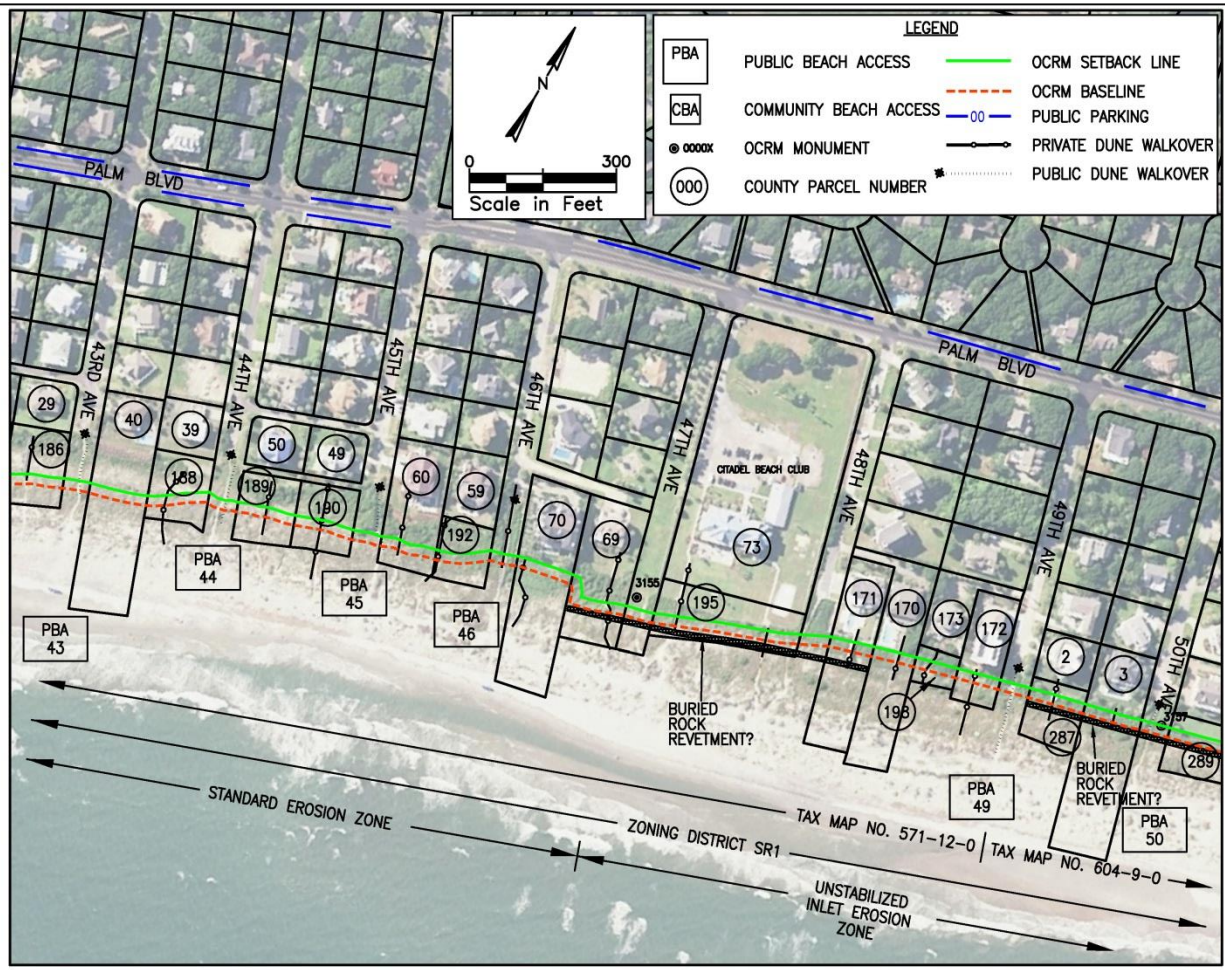
SOURCE: 2015 AERIAL PHOTOGRAPHY OBTAINED FROM USGS WEBSITE.
2016 PROPERTY LINES OBTAINED FROM CHARLESTON COUNTY GIS.
2009 SETBACK & BASELINE OBTAINED FROM SCDHEC/OCRM.

ATM APPLIED TECHNOLOGY & MANAGEMENT

ISLE OF PALMS, BEACH MANAGEMENT PLAN (SHEET 170)

SOURCE: 2015 AERIAL PHOTOGRAPHY OBTAINED FROM USGS WEBSITE.
2016 PROPERTY LINES OBTAINED FROM CHARLESTON COUNTY GIS.
2009 SETBACK & BASELINE OBTAINED FROM SCDHEC/OCRM.

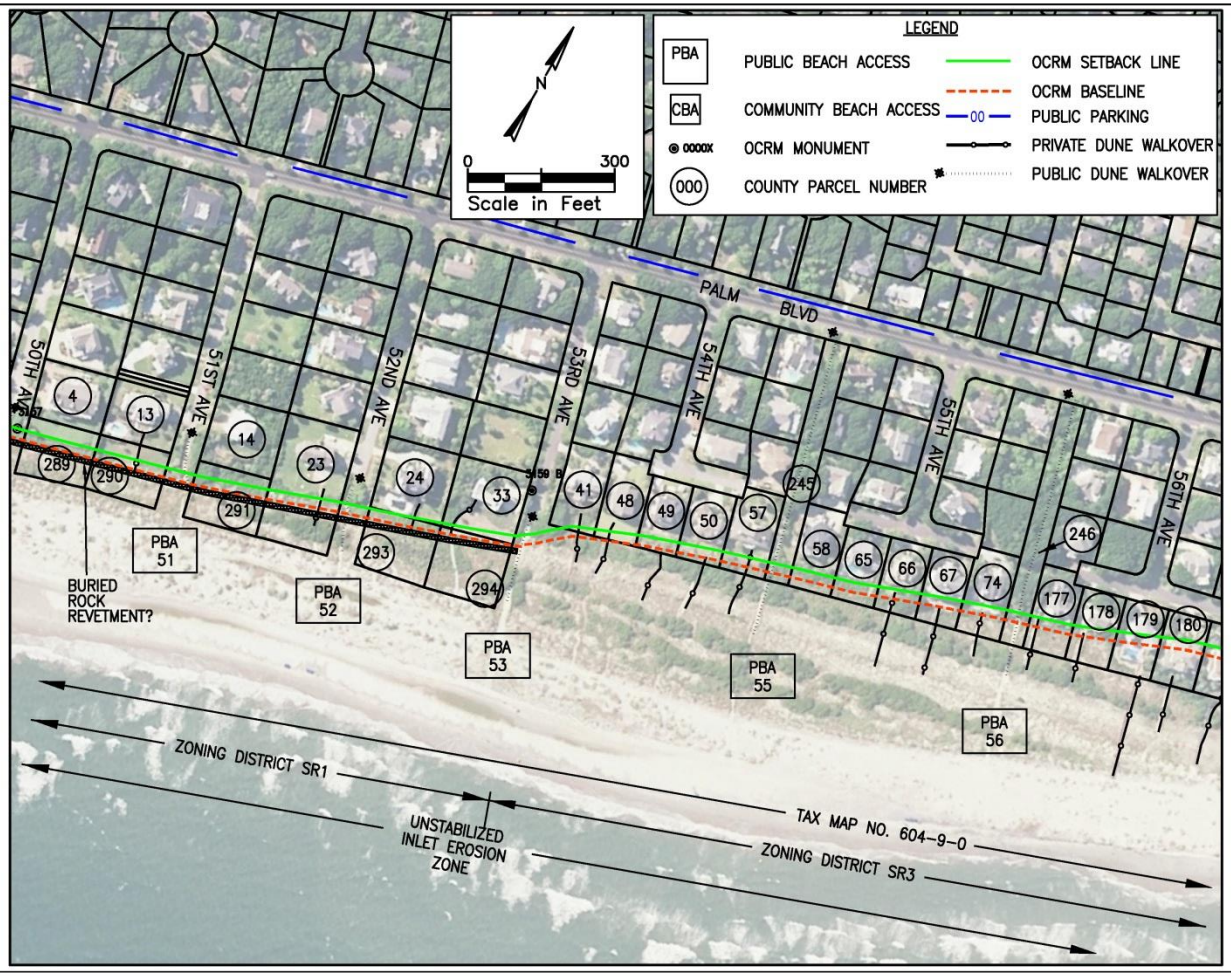
ATM APPLIED TECHNOLOGY & MANAGEMENT



ISLE OF PALMS, BEACH MANAGEMENT PLAN (SHEET 171)

SOURCE: 2015 AERIAL PHOTOGRAPHY OBTAINED FROM USGS WEBSITE.
2016 PROPERTY LINES OBTAINED FROM CHARLESTON COUNTY GIS.
2009 SETBACK & BASELINE OBTAINED FROM SCDHEC/OCRM.

ATM
APPLIED TECHNOLOGY & MANAGEMENT



ISLE OF PALMS, BEACH MANAGEMENT PLAN (SHEET 172)

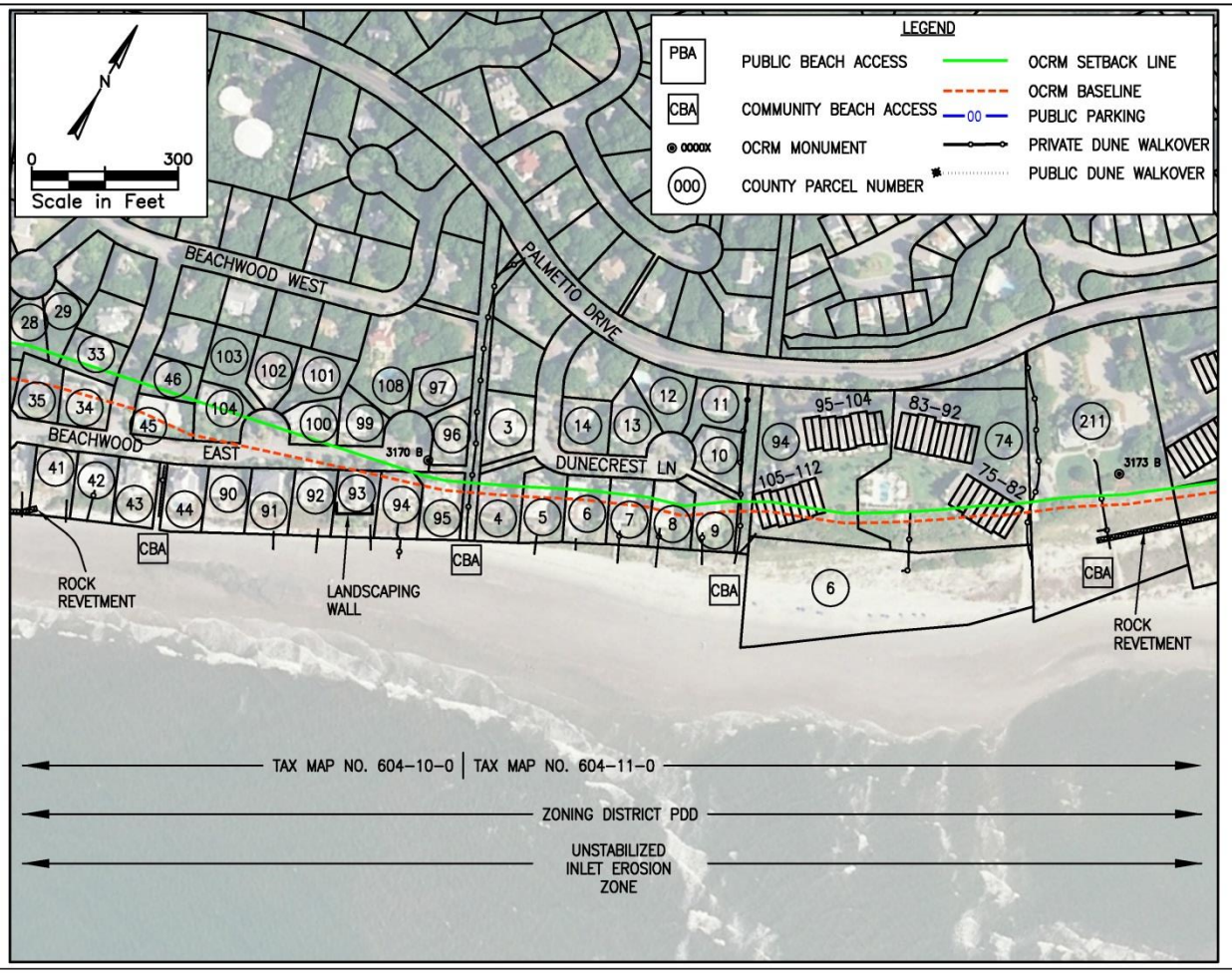
SOURCE: 2015 AERIAL PHOTOGRAPHY OBTAINED FROM USGS WEBSITE.
2016 PROPERTY LINES OBTAINED FROM CHARLESTON COUNTY GIS.
2009 SETBACK & BASELINE OBTAINED FROM SCDHEC/OCRM.

ATM APPLIED TECHNOLOGY & MANAGEMENT

ISLE OF PALMS, BEACH MANAGEMENT PLAN (SHEET 173)

SOURCE: 2015 AERIAL PHOTOGRAPHY OBTAINED FROM USGS WEBSITE.
2016 PROPERTY LINES OBTAINED FROM CHARLESTON COUNTY GIS.
2009 SETBACK & BASELINE OBTAINED FROM SCDHEC/OCRM.

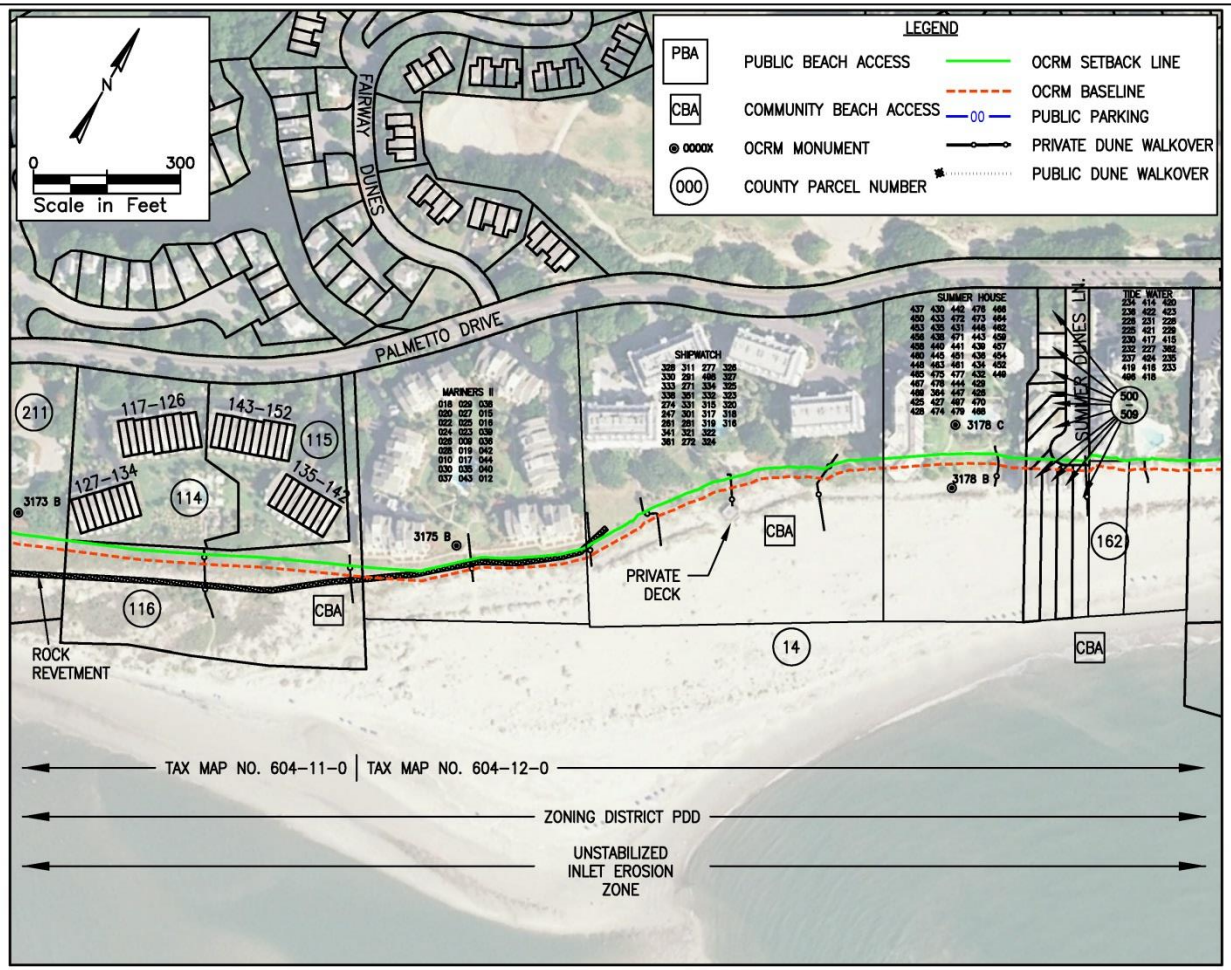
ATM
APPLIED TECHNOLOGY & MANAGEMENT



ISLE OF PALMS, BEACH MANAGEMENT PLAN (SHEET 174)

SOURCE: 2015 AERIAL PHOTOGRAPHY OBTAINED FROM USGS WEBSITE.
2016 PROPERTY LINES OBTAINED FROM CHARLESTON COUNTY GIS.
2009 SETBACK & BASELINE OBTAINED FROM SCDHEC/OCRM.

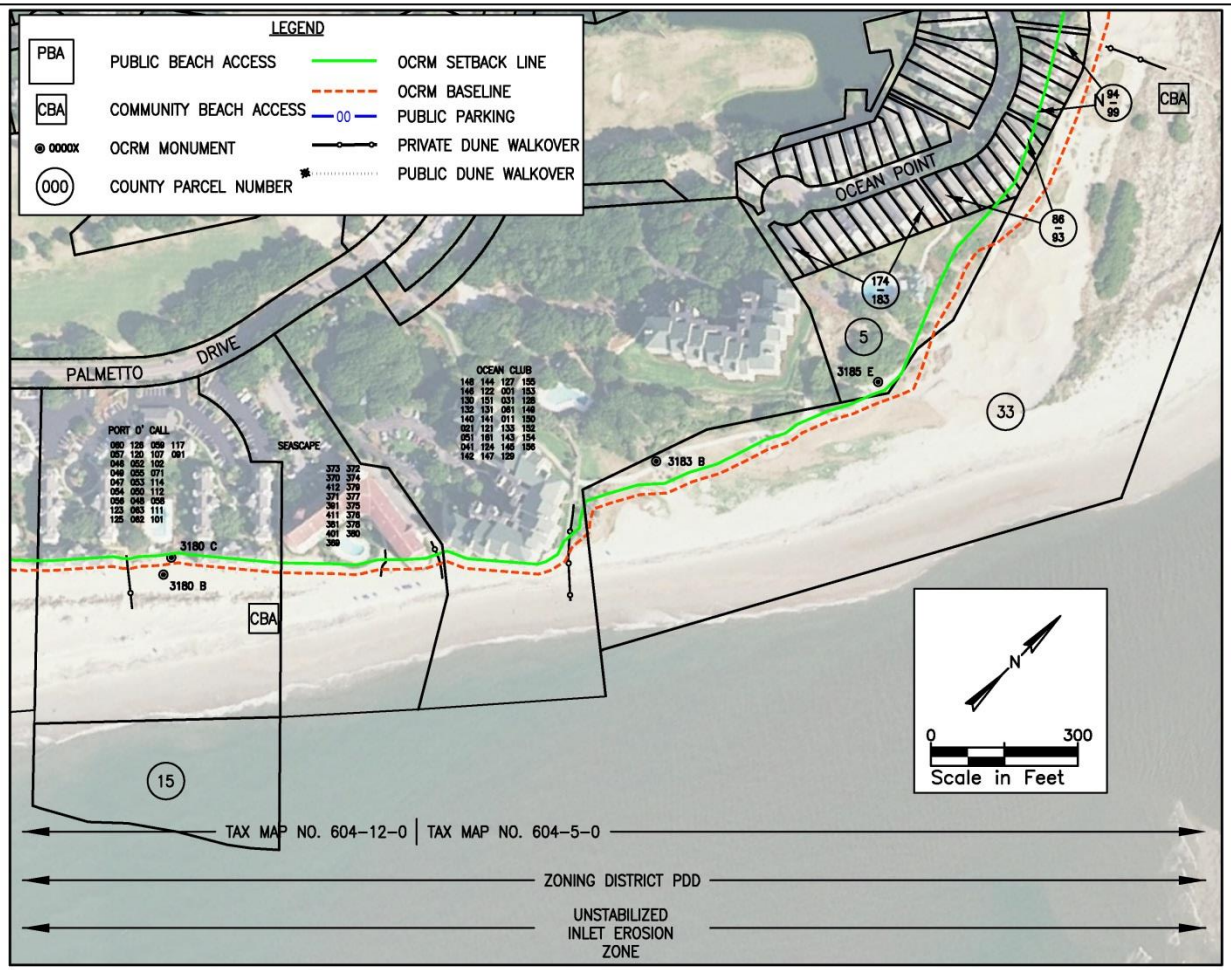
ATM APPLIED TECHNOLOGY & MANAGEMENT



ISLE OF PALMS, BEACH MANAGEMENT PLAN (SHEET 175)

SOURCE: 2015 AERIAL PHOTOGRAPHY OBTAINED FROM USGS WEBSITE.
2016 PROPERTY LINES OBTAINED FROM CHARLESTON COUNTY GIS.
2009 SETBACK & BASELINE OBTAINED FROM SCDHEC/OCRM.

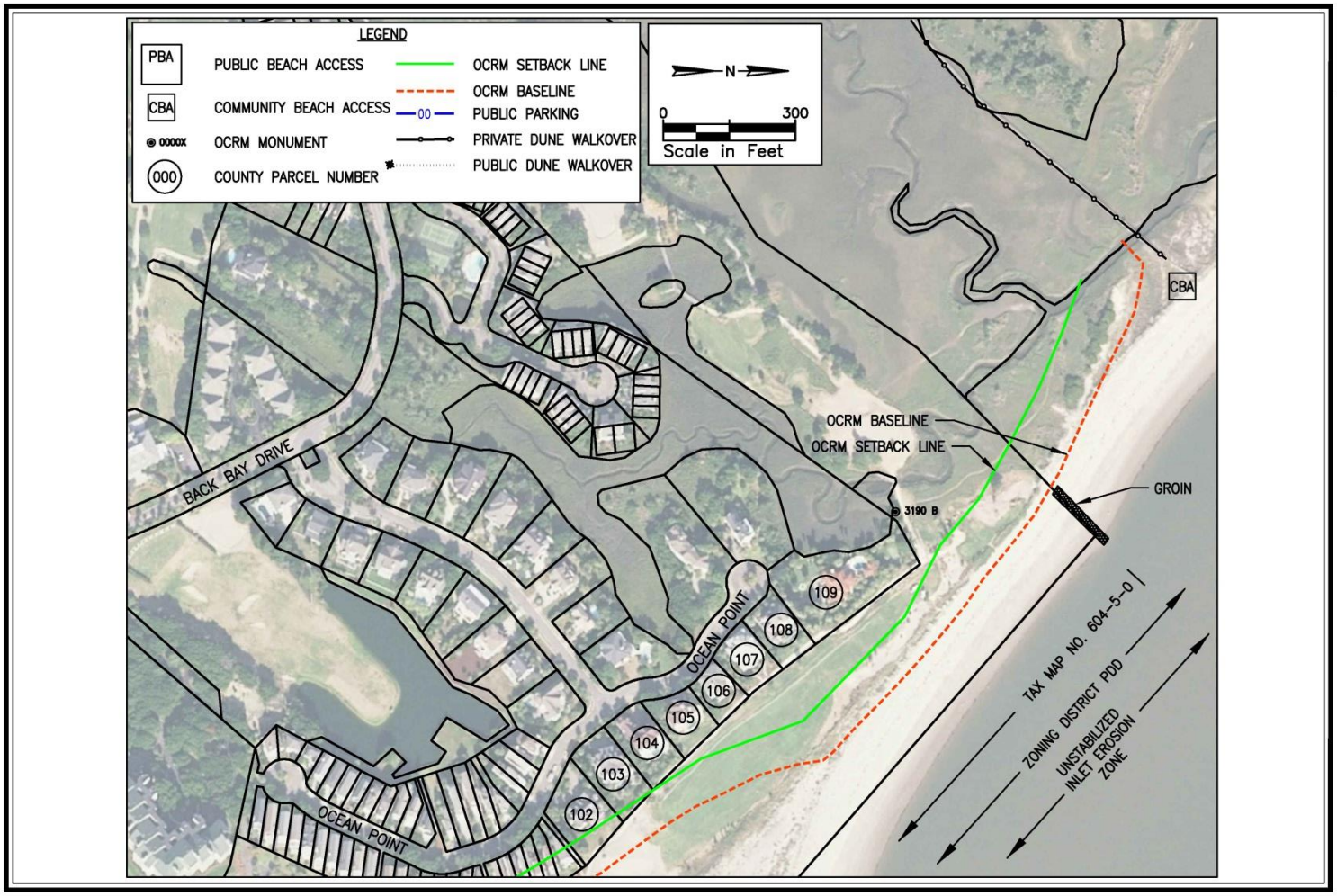
ATM APPLIED TECHNOLOGY & MANAGEMENT



ISLE OF PALMS, BEACH MANAGEMENT PLAN (SHEET 176)

SOURCE: 2015 AERIAL PHOTOGRAPHY OBTAINED FROM USGS WEBSITE.
2016 PROPERTY LINES OBTAINED FROM CHARLESTON COUNTY GIS.
2009 SETBACK & BASELINE OBTAINED FROM SCDHEC/OCRM.

ATM APPLIED TECHNOLOGY & MANAGEMENT



ISLE OF PALMS, BEACH MANAGEMENT PLAN (SHEET 177)

SOURCE: 2015 AERIAL PHOTOGRAPHY OBTAINED FROM USGS WEBSITE.
2016 PROPERTY LINES OBTAINED FROM CHARLESTON COUNTY GIS.
2009 SETBACK & BASELINE OBTAINED FROM SCDHEC/OCRM.

ATM
APPLIED TECHNOLOGY & MANAGEMENT

SC PRT Request:
4. Public and private parking areas
IOP Response:

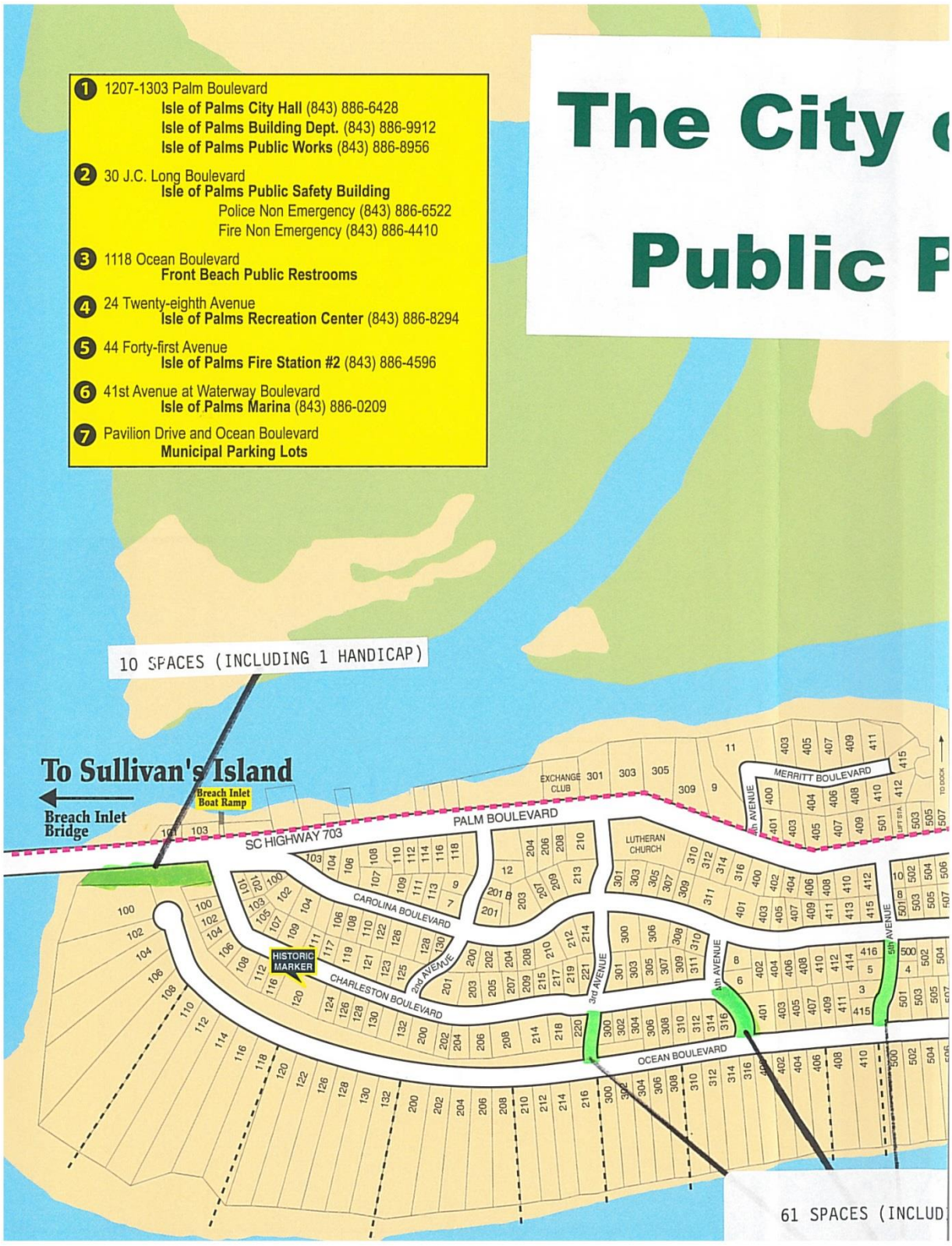
Aerial photo of three of the largest and most frequently used **public** parking lots two of which are owned by the City and one owned by Charleston County Parks, Recreation and Tourism Commission

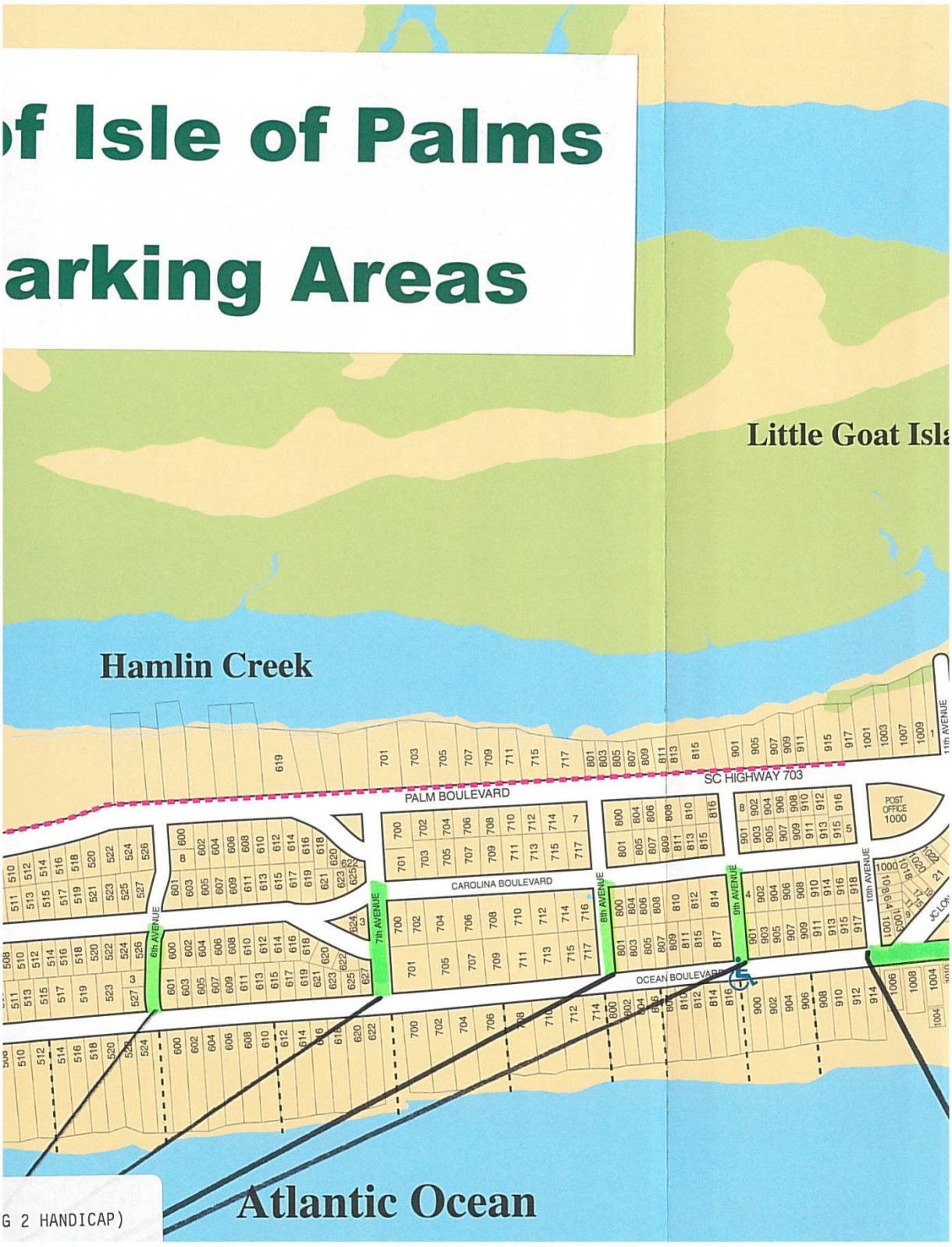
View of all three **public** parking lots and on-street parking filled to capacity on a beach weekend.

City owned small **public** parking lots for beach parking – photo taken in April before start of beach season

City owned large **Public** Parking lot for beach parking-photo taken in April before start of beach season

Public/Private parking areas continued -- highlighted in green


1 1207-1303 Palm Boulevard
Isle of Palms City Hall (843) 886-6428
Isle of Palms Building Dept. (843) 886-9912
Isle of Palms Public Works (843) 886-8956
2 30 J.C. Long Boulevard
Isle of Palms Public Safety Building
Police Non Emergency (843) 886-6522
Fire Non Emergency (843) 886-4410
3 1118 Ocean Boulevard
Front Beach Public Restrooms
4 24 Twenty-eighth Avenue
Isle of Palms Recreation Center (843) 886-8294
5 44 Forty-first Avenue
Isle of Palms Fire Station #2 (843) 886-4596
6 41st Avenue at Waterway Boulevard
Isle of Palms Marina (843) 886-0209
7 Pavilion Drive and Ocean Boulevard
Municipal Parking Lots
The City
Public P
10 SPACES (INCLUDING 1 HANDICAP)
To Sullivan's Island
Breach Inlet Bridge
Breach Inlet Boat Ramp
SC HIGHWAY 703
PALM BOULEVARD
EXCHANGE CLUB
LUTHERAN CHURCH
MERRITT BOULEVARD
CAROLINA BOULEVARD
CHARLESTON BOULEVARD
OCEAN BOULEVARD
HISTORIC MARKER
2nd AVENUE
3rd AVENUE
4th AVENUE
5th AVENUE
61 SPACES (INCLUD


f Isle of Palms
arking Areas
Little Goat Isla
Hamlin Creek
SC HIGHWAY 703
PALM BOULEVARD
CAROLINA BOULEVARD
OCEAN BOULEVARD
6th AVENUE
7th AVENUE
8th AVENUE
9th AVENUE
10th AVENUE
11th AVENUE
POST OFFICE 1000
Atlantic Ocean
G 2 HANDICAP)

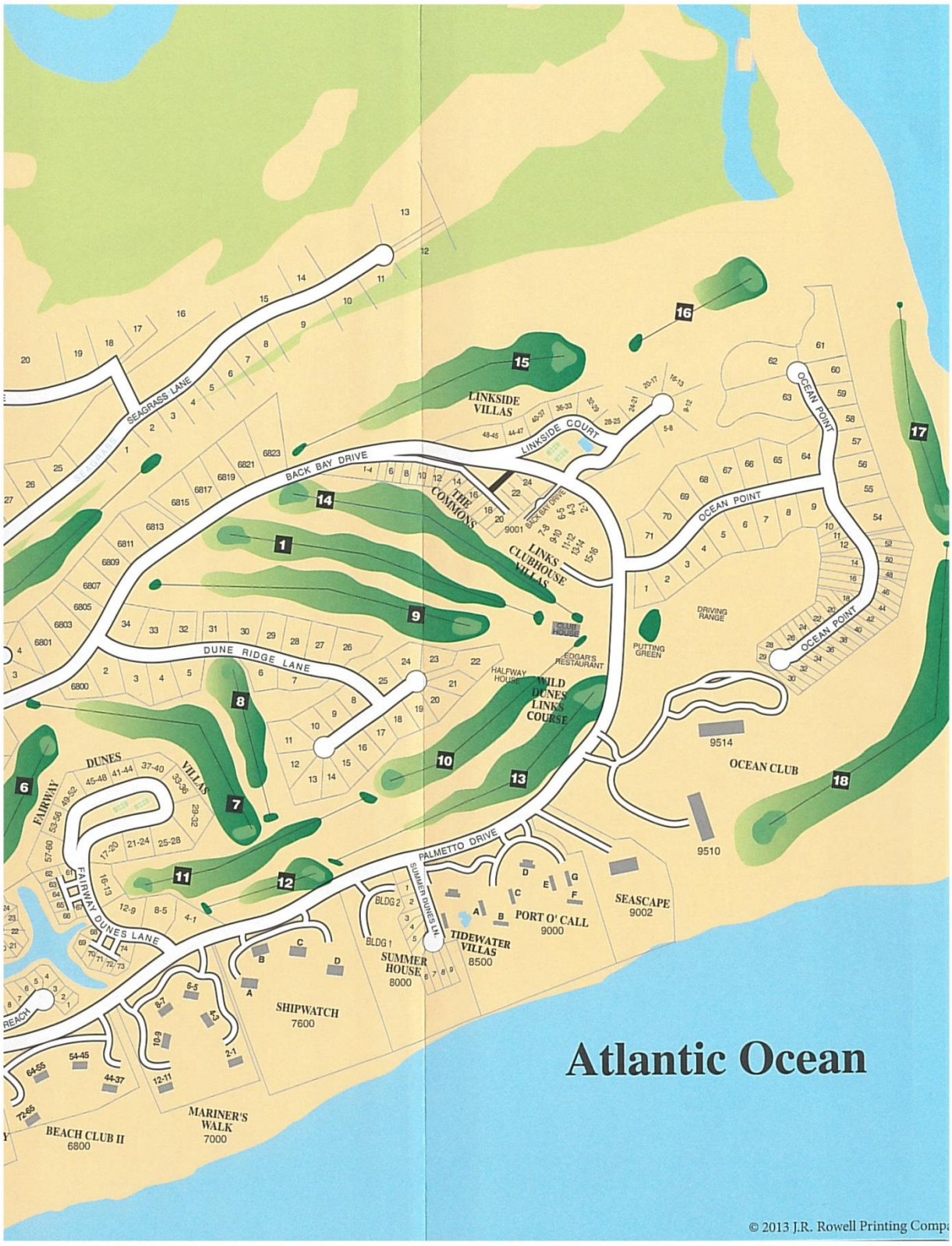

Intracoastal Waterway
CLYDE MOULTRIE DANGERFIELD ISLE OF PALMS CONNECTOR BRIDGE - 517 - A BLUE STAR HIGHWAY
WATERWAY BOULEVARD
WHISPERING PALMS LN
TABBY LANE
MYRTLE BOULEVARD
DUNES BOULEVARD
CASSINA AVENUE
ISLAND CENTER
PUBLIC WORKS
SCE&G POWER STATION
OAK HARBOR BOULEVARD
CITY HALL 1207
1301
12th AVENUE
13th AVENUE
18th AVENUE
19th AVENUE
20th AVENUE
21st AVENUE
22nd AVENUE
23rd AVENUE
24th AVENUE
25th AVENUE
26th AVENUE
METHODIST CHURCH
BAPTIST CHURCH
HARTNETT BOULEVARD
BASKETBALL COURT
LUTHERAN RETREAT CENTER
PALM BOULEVARD
1400 OCEAN PARK PLAZA
TENNIS COURT
POOL
SANDSHELL CT.
OCEAN PARK CT.
BEACHSIDE DR.
SAND DUNE LN
PAVILION DRIVE
14th AVENUE
WATER AND SEWER
OCEANSIDE VILLAS 1400 C B A
CHARLESTON COUNTY PARK
102 SPACES
320 SPACES
441 SPACES (INCLUDING 9 HANDICAP)


Goat Island
HARBOR COURSE
DRIFTWOOD LANE
SEAHORSE COURT
ENSIGN CT.
WATERWAY BOULEVARD
LAUDEN STREET
ALLIE CT.
WILLS WAY
SKINNER BLVD.
HARTNETT BOULEVARD
CAMERON BOULEVARD
PALM COURT
CHAPMAN AVENUE
SHADY LANE
OAKVIEW LN.
TIMBER LN.
CROSS LANE
FOREST TRAIL
SOFTBALL FIELDS
BASEBALL FIELDS
BASKETBALL COURT
TENNIS COURT
IOP REC CENTER #24
BARK PARK
PLAY GROUNDS
SOCCER FIELDS
27th AVENUE
28th AVENUE
29th AVENUE
30th AVENUE
31st AVENUE
32nd AVENUE
33rd AVENUE
34th AVENUE
35th AVENUE
36th AVENUE
SC HIGHWAY 703
357 SPACES (INCLUDING 2 HANDICAP)
© 2013 J.R. Rowell Printing Company,

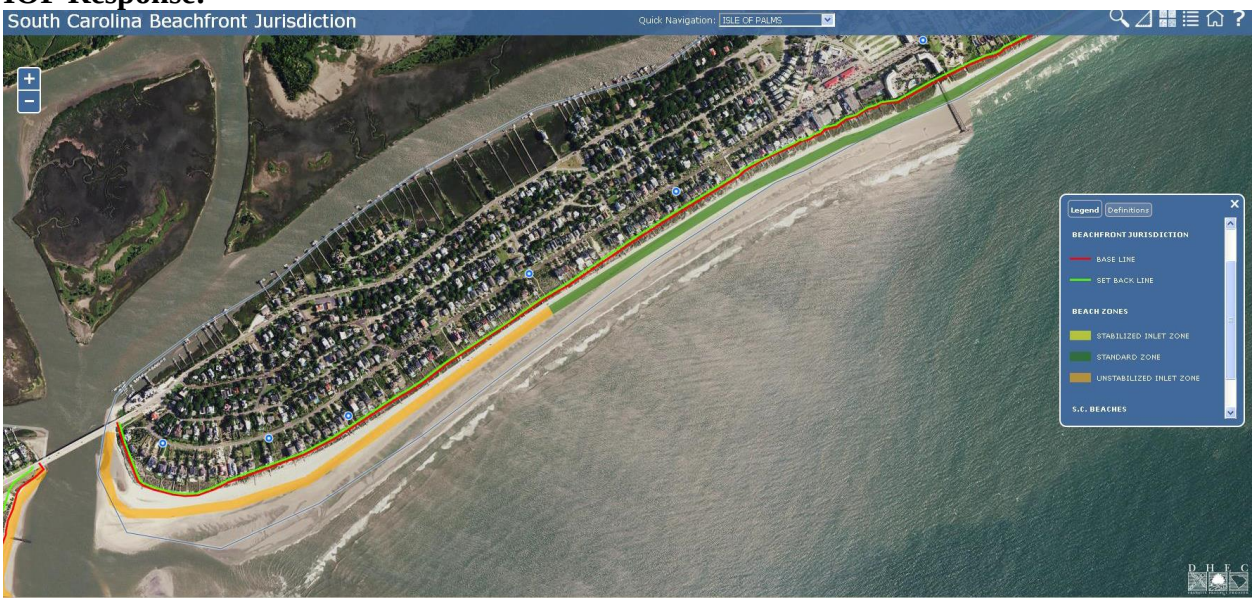

Intracoa
CITY DOCKS
RESTAURANT
80
RAMP
ISLE OF PALMS MARINA
50
MARINA MARKET
GAS
6
FIRE STATION #2
DIST CTR
5
DEWEES MARI NA
46
44
WASTE WATER TREATMENT
RADIO TOWER
HARBOR HALFWAY
A
B
C
D
INTRACOASTAL COURT
HARBOR COURSE
MORGAN'S COVE
13
FRANK SOTTILE LN
WILDWOOD ROAD
LIVE OAK DRIVE
SAND DOLLAR DRIVE
CEDAR STREET
PALM BOULEVARD
41st AVENUE
42nd AVENUE
43rd AVENUE
44th AVENUE
45th AVENUE
SEASHELL LN
SURF LN
HARTNETT BOULEVARD
FOREST TRAIL
FOREST TRAIL CT #1
FOREST TRAIL CT #2
SPARROW DRIVE
DUCK LANE
CROSS LANE
TIMBER LN.
35th AVENUE
36th AVENUE
37th AVENUE
38th AVENUE
39th AVENUE
40th AVENUE
Map Key
Handicap Parking
Beach Access
Bike Paths


stal Waterway
WATERWAY ISLAND DRIVE
THE MOORINGS
YACHT HARBOR VILLAS
YACHT HARBOR COURT
MORGAN PLACE DRIVE
MORGAN CREEK DRIVE
FAIRWAY VILLAGE LANE
SUNDIAL CIRCLE
WILD DUNES
SECURITY GATE
ABALONE ALLEY
EDGEWATER ALLEY
PALMETTO DRIVE
BARNACLE ROW
CONCH CT
DOLPHIN ROW
FISHERS ALLEY
OYSTER ROW
SHAD ROW
LAKE VILLAGE LANE
SANDCRAB COURT
SANDPIPER COURT
CITADEL BEACH CLUB
47th AVENUE
48th AVENUE
49th AVENUE
50th AVENUE
51st AVENUE
52nd AVENUE
53rd AVENUE
54th AVENUE
55th AVENUE
56th AVENUE
4602
4900
5000
5102
5200

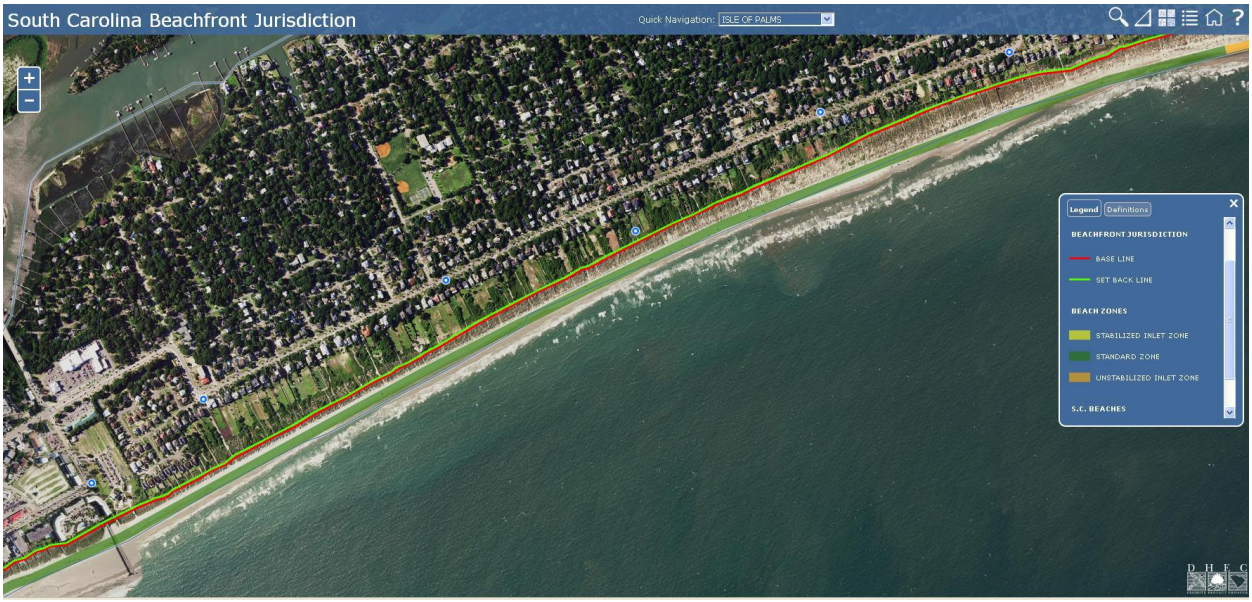

SEAGRASS
OPEN SPACE
SEAGRASS LANE
MARSH ISLAND DRIVE
MARSH POINT LANE
OPEN SPACE
HARBOR COURSE
TWIN OAKS LANE
BACK BAY DRIVE
RACQUET CLUB VILLAS
RACQUET CLUB ROAD
BACK COURT
HARBOR GOLF SHOP
DELI
SWEETGRASS PAVILION
TENNIS CENTER
SANDWEDGE LANE
LAGOON ROAD
LAGOON VILLAS
FAIRWAY OAKS LANE
HIDDEN GREEN LANE
PELICAN BEACH
THE VILLAGE AT WILD DUNES
PALMETTO DRIVE
SEASIDE COTTAGE LANE
GRAND PAVILION BLVD
BOARDWALK INN
IS. COTTAGE CT.
SEAGROVE LANE
WILD DUNES COMMUNITY ASSOCIATION OFFICE
BEACHWOOD WEST
BEACHWOOD EAST
DUNECREST LANE
GRAND PAVILION
SEAGROVE
BEACH CLUB I
6400


SEAGRASS LANE
BACK BAY DRIVE
LINKSIDE VILLAS
LINKSIDE COURT
THE COMMONS
LINKS CLUBHOUSE VILLAS
OCEAN POINT
DUNE RIDGE LANE
CLUB HOUSE
EDGAR'S RESTAURANT
HALFWAY HOUSE
WILD DUNES LINKS COURSE
DRIVING RANGE
PUTTING GREEN
9514
OCEAN CLUB
9510
PALMETTO DRIVE
DUNES VILLAS
FAIRWAY
FAIRWAY DUNES LANE
SUMMER DUNES LN.
BLDG 1
BLDG 2
SUMMER HOUSE 8000
TIDEWATER VILLAS 8500
PORT O' CALL 9000
SEASCAPE 9002
SHIPWATCH 7600
MARINER'S WALK 7000
BEACH CLUB II 6800
Atlantic Ocean
© 2013 J.R. Rowell Printing Compa

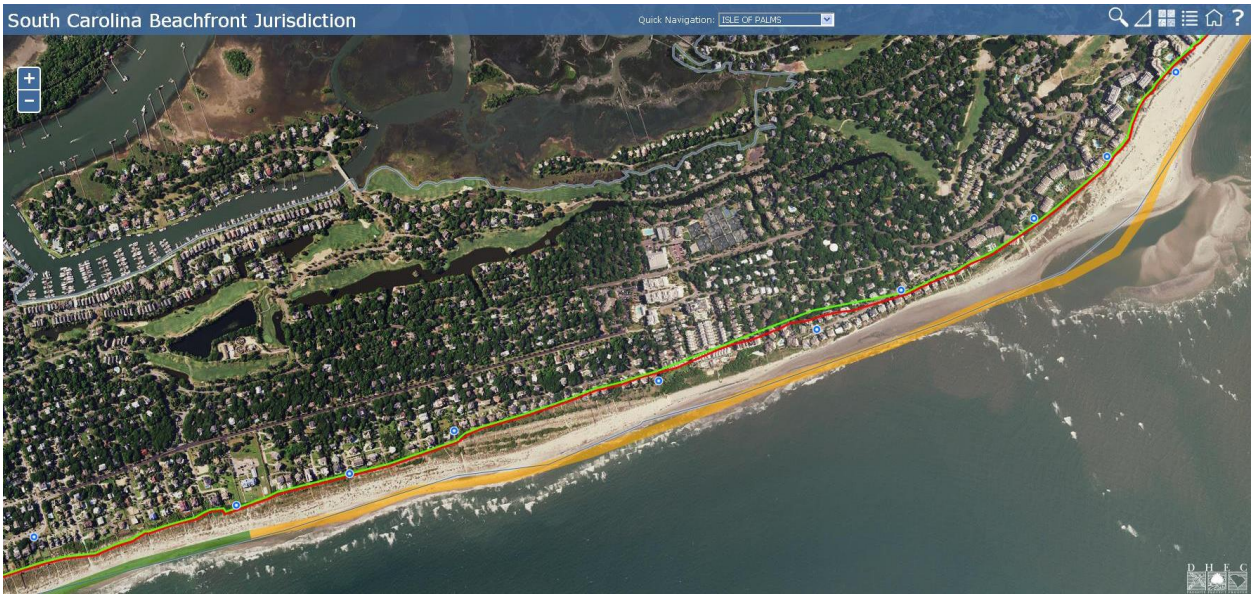
SC PRT Request: 5. Baseline and setback line(s)
IOP Response:



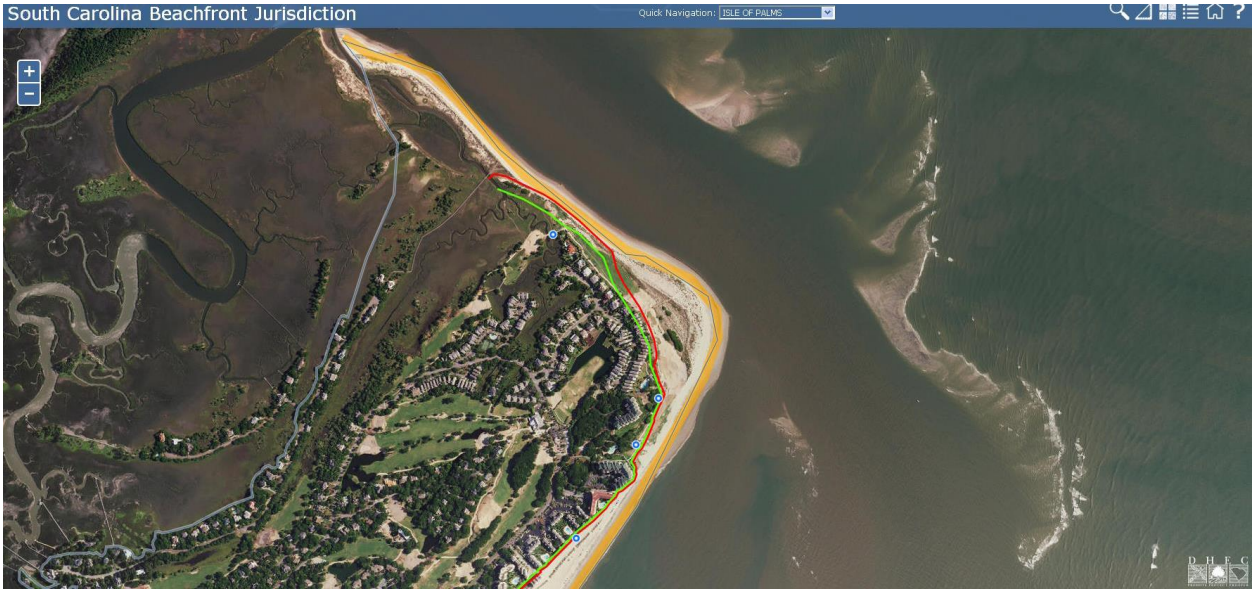
2009 Beachfront Jurisdictional Lines for Isle of Palms, Breach Inlet to Isle of 14th Ave. Red line = Baseline; green line = 40-year setback line; orange shading = unstabilized inlet erosion zone; green shading = standard erosion zone; blue dots = DHEC OCRM survey monuments and erosion rate locations.



2009 Beachfront Jurisdictional Lines for Isle of Palms,14th Ave. to 41st Ave. Red line = Baseline; green line = 40-year setback line; orange shading = unstabilized inlet erosion zone; green shading = standard erosion zone; blue dots = DHEC OCRM survey monuments and erosion rate locations.



2009 Beachfront Jurisdictional Lines for Isle of Palms, 41st Ave. to Summer Dunes Lane. Red line = Baseline; green line = 40-year setback line; orange shading = unstabilized inlet erosion zone; green shading = standard erosion zone; blue dots = DHEC OCRM survey monuments and erosion rate locations.



2009 Beachfront Jurisdictional Lines for Isle of Palms, Summer Dunes Lane to Dewees Inlet. Red line = Baseline; green line = 40-year setback line; orange shading = unstabilized inlet erosion zone; green shading = standard erosion zone; blue dots = DHEC OCRM survey monuments and erosion rate locations.

C. Budget Summary and Proof of Matching Funds:

Beach Renourishment Funding Assistance Grant
Financial Information
Funding:

List all sources of project funding and the amount committed by each for this project. Attached a letter of commitment from each funding source other than the applicant. The commitment letters should specify the amount of funds being provided, when the funds are available, and any restrictions or conditions for the use of the funds. For the applicant's commitment, attach a letter (or resolution if a county or city council is committing the funds) specifying the source of funds, when the funds are available and any restrictions or conditions for the use of the funds.

If a letter of commitment cannot be provided for any expected sources of funds, a rationale should be provided which explains why such a letter cannot be provided and states how the funding for the project will be assured.

Source of Project Funding	Date of Funding Availability	Amount Committed	% of Total Project Cost
City of Isle of Palms	**Currently Available** (City bank balances reserved for this project)	$ 2,872,620	19%
Private Stakeholders	**Currently Available** (already collected by City and held in bank escrow account)	5,199,380	35%
Amount of grant funds requested		6,932,000	46%
Total Project Cost		$ 15,004,000	100%

SC PRT Request:

1. Documentation organization has on-hand sufficient liquid assets to meet the match requirement.

IOP Response: Please see letter from BB&T about the City's account holding the private stakeholders' funds in escrow as well as bank statements related to the City's funding depicting sufficient bank balances reserved for this project.

BB&T

Branch Banking & Trust Co.

885 Johnnie Dodd Blvd.
Mt. Pleasant, SC 29464
(843) 971- 3000
Fax (843) 971- 3010

February 8, 2017

RE: City of Isle of Palms
IOP Beach Restoration Escrow Acct
PO Box 508
Isle of Palms, SC 29451

To Whom It May Concern:

I am writing to confirm that the balance as of today in the City of Isle of Palms' Beach Restoration Escrow Acct ending in 6046 is $5,213,239.02. Please feel free to contact me if you have any questions or any additional needs.

Thank you,

BB&T
Branch Banking & Trust

Brett Thomas
Market Leader – Mount Pleasant and Daniel Island
885 Johnnie Dodds Blvd
Mount Pleasant, SC 29464
Office: (843) 971-3018
Fax: (843) 971-3005
bthomas@bbandt.com
NMLS# 1130048

South Carolina Office of State Treasurer

Curtis M. Loftis, Jr.

Local Government Investment Pool

Statement of Account

01/01/2017 - 01/31/2017

CITY OF ISLE OF PALMS
ISLAND WIDE BEACH MAINT FUND
P.O. DRAWER 508
ISLE OF PALMS SC 29451

Account Number:	1947
Beginning Balance:	327,873.21
Ending Balance:	328,138.37
Average Balance:	327,873.21
Average Interest Rate (365):	0.9045 %

Date	Description	Contributions	Withdrawals	Balance
01/01/2017	Beginning Balance	--	--	327,873.21
01/31/2017	Reinvestment	265.16	--	328,138.37

	Funds Received	Funds Withdrawn	Interest Earned
MTD	0.00	0.00	265.16
YTD	0.00	0.00	1,618.31

P.O. Box 11778, Columbia, SC 29211

South Carolina Office of State Treasurer

Curtis M. Loftis, Jr.

Local Government Investment Pool

Statement of Account

01/01/2017 - 01/31/2017

		Account Number:	2373
	City of Isle of Palms	**Beginning Balance:**	100,143.90
	Beach Preservation Fee Fund	**Ending Balance:**	1,601,091.29
	P.O. Box 508	**Average Balance:**	1,164,660.03
	Isle of Palms, SC 29451	**Average Interest Rate (365):**	0.9045 %

Date	Description	Contributions	Withdrawals	Balance
01/01/2017	Beginning Balance	--	--	100,143.90
01/10/2017	Deposit	1,500,000.00	--	1,600,143.90
01/31/2017	Reinvestment	947.39	--	1,601,091.29

	Funds Received	Funds Withdrawn	Interest Earned
MTD	1,500,000.00	0.00	947.39
YTD	1,600,000.00	0.00	1,091.29

P.O. Box 11778, Columbia, SC 29211

South Carolina Office of State Treasurer

Curtis M. Loftis, Jr.

Local Government Investment Pool

Statement of Account

01/01/2017 - 01/31/2017

CITY OF ISLE OF PALMS
ACCOMODATIONS FEE INVEST ACCT
P. O. DRAWER 508
ISLE OF PALMS, SC 29451

Account Number:	1340
Beginning Balance:	1,450,472.00
Ending Balance:	1,451,645.03
Average Balance:	1,450,472.00
Average Interest Rate (365):	0.9045 %

Date	Description	Contributions	Withdrawals	Balance
01/01/2017	Beginning Balance	--	--	1,450,472.00
01/31/2017	Reinvestment	1,173.03	--	1,451,645.03

	Funds Received	Funds Withdrawn	Interest Earned
MTD	0.00	0.00	1,173.03
YTD	400,000.00	100,000.00	6,600.85

P.O. Box 11778, Columbia, SC 29211

2. Sworn statement by the CEO and CFO regarding the match.

CITY OF
ISLE
OF
PALMS South Carolina

February 10, 2017

Mr. Justin Hancock
South Carolina Department of Parks, Recreation & Tourism
1205 Pendleton Street
Suite 248
Columbia, South Carolina, 29201

Dear Mr. Hancock:

We certify that the City of Isle of Palms has the following cash balances available to fund the beach restoration project as identified in the Parks, Recreation & Tourism grant application. Documentation from the banking institutions holding these funds is included.

City of Isle of Palms Share:	$2,872,620
Private Stakeholders Share:	5,199,380
Total	$8,072,000

Debbie S. Suggs
City Treasurer

Linda Lovvorn Tucker
City Administrator

Dick Cronin
Mayor

County Charleston
State South Carolina

Sworn to & subscribed before me this 10th day of February, 2017

M. B. Copeland
NOTARY PUBLIC FOR SOUTH CAROLINA
My commission expires September 14, 2022

M B Copeland, Notary Public
My commission expires 9/14/2022

P.O. Drawer 508 • Isle of Palms, South Carolina 29451
(843) 886-6428 • Fax (843) 886-8005 • www.iop.net

Instructions: Identify and list each major task/activity associated with the proposed project. Darken the appropriate boxes for the quarter(s) during which the task/activity will take place (beginning to end). Fill in the estimated amount of funding needed for the completion of each project element listed. The source of any "other" funding for the project should be listed separately at the bottom of this form (show the total amount of funds being provided) and referenced by number. If the project is expected to last beyond twenty-four (24) months, please provide an explanation and attach an extended timeline, if necessary.

Analyze the proposed project carefully. All elements of the project and any necessary funding must be identified. If necessary, attach additional information.		Project Period												Beach Renourishment Assistance Funds	Other Funds: Amount and Source #
		2016				2017				2018					
Tasks/Activities		1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q		
	Example: Engineering													*$20,000*	*$30,000 (1)*
1	Preliminary Engineering													$	$ 325,000
2	Final Design and Bidding													$	$ 125,000
3	Construction													$ 6,932,000	$ 6,932,000
4	Construction Administration													$	$ 450,000
5	Monitoring													$	$ 240,000
6														$	$
7														$	$
8														$	$
9														$	$
10														$	$
11														$	$
12														$	$
	Total Beach Renourishment Assistance Funds													$ 6,932,000	
	Total funds from other sources														$ 8,072,000
	Total project cost													$ 15,004,000	

Other Funding Sources

Example: (1) State Accommodations Tax Collections $15,000

(1) Private Stakeholders funds held in escrow by the City 5,199,380

(2) City of Isle of Palms Beach Maintenance Fund & Beach Preservation Fund and Municipal ATAX $2,872,620

(3) _____

(4) _____

Instructions: Identify and list each major task/activity associated with the proposed project. Darken the appropriate boxes for the quarter(s) during which the task/activity will take place (beginning to end). Fill in the estimated amount of funding needed for the completion of each project element listed. The source of any "other" funding for the project should be listed separately at the bottom of this form (show the total amount of funds being provided) and referenced by number. If the project is expected to last beyond twenty-four (24) months, please provide an explanation and attach an extended timeline, if necessary.

Analyze the proposed project carefully. All elements of the project and any necessary funding must be identified. If necessary, attach additional information.		Project Period												Beach Renourishment Assistance Funds	Other Funds: Amount and Source #
		2016				2017				2018					
Tasks/Activities		1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q		
	Example: Engineering													*$20,000*	*$30,000 (1)*
1	Preliminary Engineering													$	$ 325,000
2	Final Design and Bidding													$	$ 125,000
3	Construction													$ 6,932,000	$ 6,932,000
4	Construction Administration													$	$ 450,000
5	Monitoring													$	$ 240,000
6														$	$
7														$	$
8														$	$
9														$	$
10														$	$
11														$	$
12														$	$
														Total Beach Renourishment Assistance Funds	$ 6,932,000
														Total funds from other sources	$ 8,072,000
														Total project cost	$ 15,004,000

Other Funding Sources

(1) Private Stakeholders funds held in escrow by the City $5,199,380

(2) City of Isle of Palms Beach Maintenance Fund, Beach Preservation Fund & Municipal ATAX $2,872,620

Example: (1) State Accommodations Tax Collections $15,000

(3) _____

(4) _____

D. **Engineering Studies and Post-Project Monitoring**

Engineering Studies and monitoring studies are available as Appendices in digitized format and include the following:

Appendix 1 2008 Beach Restoration Project Report

Appendix 2 Shoal Management Permit

Appendix 3 2012 Shoal Management Project Report

Appendix 4 2015 Monitoring Report

Appendix 5 Biological Assessment

E. Beach Renourishment Permit Application or Copy of Approved Permit

A copy of the permit application is enclosed and permits are expected to be issued soon. It is important to note that the permit includes renourishment of a second area which the City refers to as Phase II and includes the area of the Isle of Palms beach from Breach Inlet to Fourteenth Avenue. However, there is no public or private funding identified for the Phase II area; therefore, the City's application to SCPRT is for eligible project costs to fund only for the area from 53rd Avenue to Dewees Inlet.

Copy of the permit application provided.

32. Description of the overall project and of each activity in or affecting US waters or state critical areas

The proposed activity is a beach nourishment project along Isle of Palms, SC (Sheet 01). Work will include placement via hydraulic (cutterhead) dredge of up to 2,000,000 cubic yards (cy) of beach-quality sediment along up to 19,000 feet (ft) of shoreline. The project encompasses two reaches with the first extending from 53rd Avenue East to the Wild Dunes Links Course's 18th hole and the second extending from Breach Inlet to 14th Avenue. Sand will be obtained from offshore borrow areas ~2–3 miles from the beach, situated on bathymetric high areas to reduce the potential for infilling with mud. Due to the dynamic nature of shoals attaching to the Isle of Palms beach, the exact fill limits will be determined at the time of construction; however, no fill will be placed beyond the boundaries shown in Sheet 02. Fill will be placed along areas showing significant volume losses since 2008.

The previous large-scale nourishment project at Isle of Palms was completed in spring/summer of 2008. That project added ~875,000 cy of sand to the beach in three reaches between 54th Avenue and the area near the 17th hole (Stations 224+00–340+00). Additional work was completed in 2012 by transferring ~80,000 cy of sand from accretional areas to a localized hotspot erosional area (Stations 306+00–320+00). By 2014, erosion along this hotspot continued, and the area between Station 260+00 and Station276+00 was also eroding. Another transfer project was completed, moving a total of ~248,000 cy of sand to the two erosional areas.

Nourishment Plan

Borrow Area(s)

Two potential borrow areas have been identified based on preliminary geotechnical borings and coordination with cultural resource agencies. Area E is shown on Sheet 08 and encompasses ~310 acres in the vicinity of Borrow Area B, which was used during the 2008 project. Area F is ~65 acres and is to the north and east of Area E. CSE has obtained borings in each area to determine sediment compatibility. Both areas contain mostly clean sand with small shell hash intermixed. Table 1 shows the sediment statistics for each core and averaged for each area. Area E has a mean grain size of 0.443 millimeters (mm) and shell percentage of 26.9 percent. Most of the shell content is sand-sized material less than 2 mm. Area F is similar with a mean grain size of 0.383 mm and shell content of 27.5 percent. At the maximum volume, the project will require ~150 acres of borrow area to be utilized, leaving significant areas untouched. The Applicant will obtain additional borings to refine the borrow areas prior to construction to maximize sediment compatibility.

In conducting geotechnical investigations, the Applicant discovered additional areas offshore of Isle of Palms which contain quality beach-compatible sand (Fig 1). The sand in these areas is clean, tan sand with generally less shell material than Areas E and F, and of that, the shell material is smaller in size. While the overall mean grain size is similar to Areas E and F (Table 1), the distribution of the sand grain size is different in the two areas. Areas E and F have a higher concentration of fine-grained sand and occasional silty material with slightly larger shell fragments. The two additional areas have a slightly larger sand size and smaller shell fragments. Figure 2 shows photos of the typical sediment in the offshore areas compared to Areas E and F.

The Applicant initially proposed that these areas be the primary borrow areas; however, after consultation with the State Historic Preservation Office (SHPO), it was discovered that a large area offshore of Isle of Palms is being proposed to be designated as a historic district. These potential borrow areas were located within the proposed boundary. The Applicant believes that the sand in these areas is of better, beach-fill material due to the lower fine sand and silt content, smaller shell size, and color; however, SHPO indicated that they would not agree to allow dredging of any of the area within the proposed historic district. Due to the urgent need for a comprehensive beach restoration project, the Applicant is moving forward with the proposed project using Borrow Areas E and F to avoid impacting the proposed historic district, despite the presence of more suitable fill within the district.

Table 1. Grain size statistics for initial sediment samples in the borrow search focus area (see Sheet 08).

Area	Station	Interval	Mean (mm)	STD (mm)	Percent Shell	Percent >2mm
Area E	IOP 1	0-7	**0.344**	0.406	19.0	5.0
	IOP 11	0-7	**0.417**	0.280	16.4	12.0
	IOP 37	0-7	**0.127**	0.647	8.8	0.5
	IOP 48	0-7	**0.523**	0.293	33.1	19.7
	IOP 49	0-7	**0.436**	0.381	31.7	9.2
	IOP 50	0-7	**0.378**	0.357	21.6	9.1
	IOP 51	0-7	**0.419**	0.330	30.3	13.1
	IOP 72	0-7	**0.896**	0.360	54.5	22.0
		Average	**0.443**	**0.382**	**26.9**	**11.3**
Area F	IOP 24	0-7	**0.333**	0.421	22.8	6.4
	IOP 25	0-7	**0.384**	0.320	31.4	13.2
	IOP 46	0-7	**0.404**	0.282	31.2	16.9
	IOP 47	0-7	**0.410**	0.329	24.5	11.0
		Average	**0.383**	**0.338**	**27.5**	**11.9**

Area	Station	Interval	Mean (mm)	STD (mm)	Percent Shell	Percent >2mm
Area G	IOP 5	0-7	**0.422**	0.427	36.0	7.6
	IOP 6	0-7	**0.302**	0.467	21.8	5.0
	IOP 16	0-7	**0.471**	0.347	33.5	13.0
	IOP 30	0-7	**0.442**	0.381	32.0	11.3
	IOP 31	0-7	**0.459**	0.336	32.8	12.1
	IOP 32	0-7	**0.491**	0.371	36.6	12.2
	Average		**0.431**	**0.388**	**32.1**	**10.2**
Area H	IOP 7	0-7	**0.373**	0.386	24.9	8.8
	IOP 18	0-7	**0.327**	0.455	24.8	4.6
	IOP 22	0-7	**0.347**	0.345	26.2	6.9
	IOP 33	0-7	**0.265**	0.490	19.5	3.1
	IOP 34	0-7	**0.298**	0.509	20.1	4.0
	IOP 35	0-7	**0.337**	0.447	23.5	4.3
	IOP 36	0-7	**0.209**	0.455	15.5	3.4
	Average		**0.308**	**0.441**	**22.1**	**5.0**

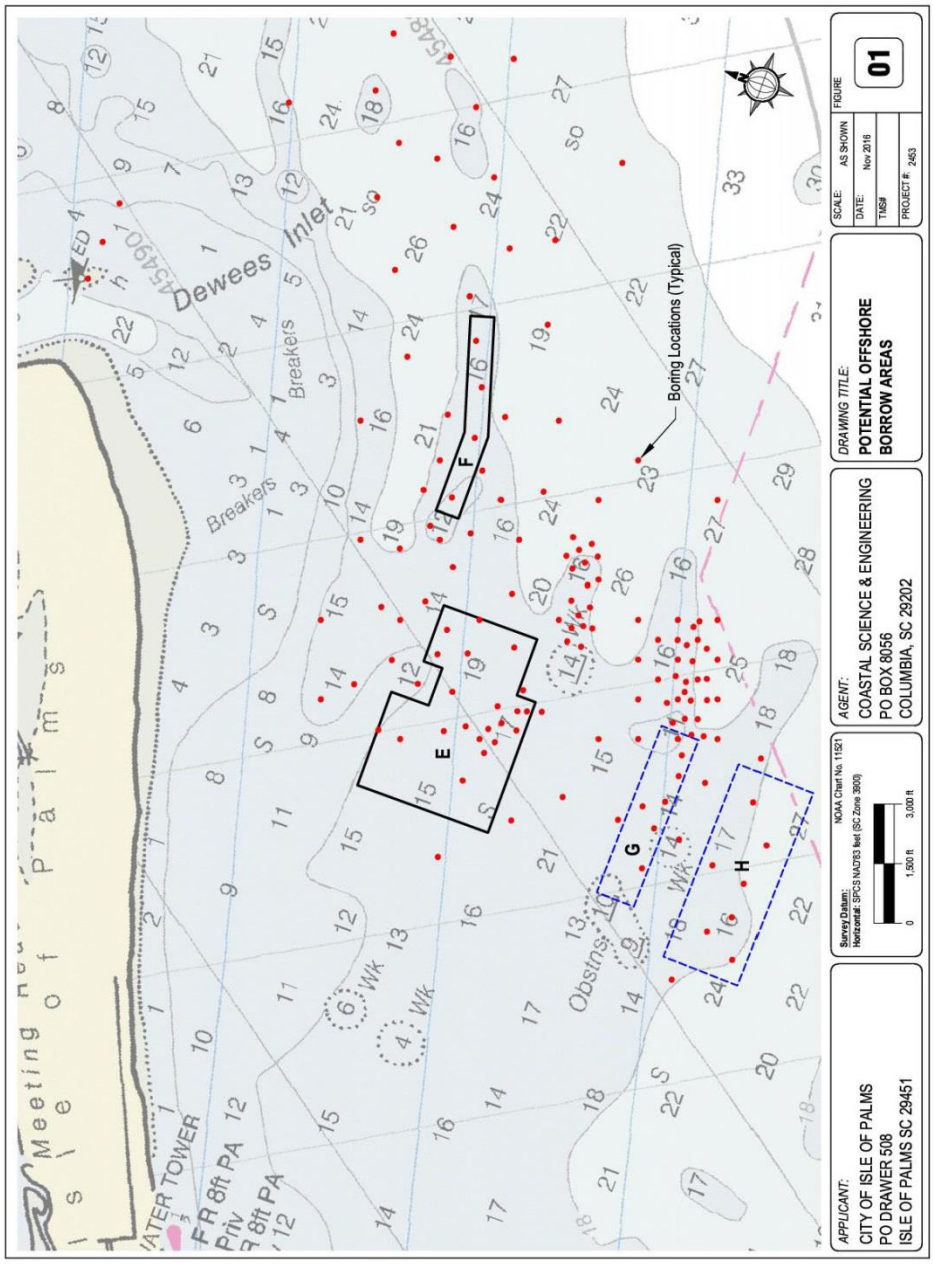


Figure 1. Map showing the location of the offshore borrow areas (black lines) and areas SHPO identified as being within the boundary of a proposed historic district (blue lines).

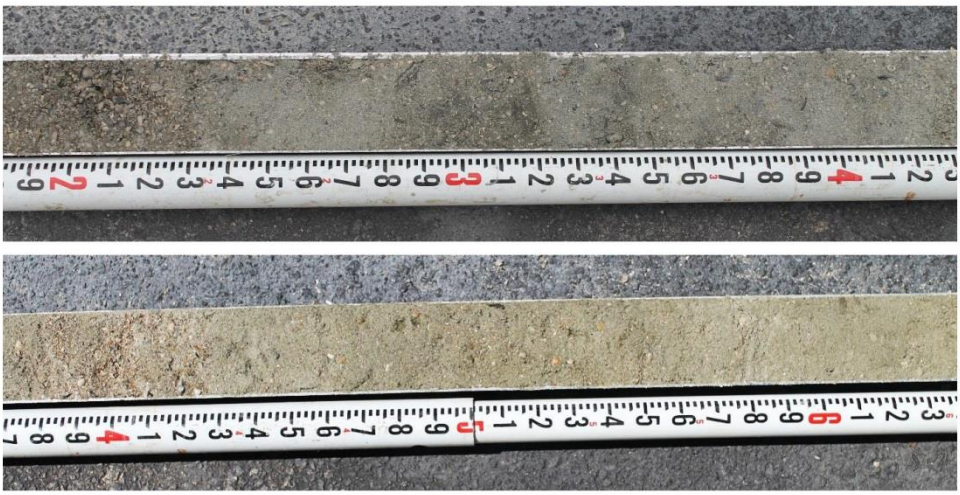


Figure 2. Photos of typical borings from Areas E and F (upper) and the offshore areas in the proposed historic district (lower). Note the sand in the lower boring is more tan and contains less silty material (as visible in the darker areas in the top photo).

Nourishment

Reaches 1 and 2

Nourishment will be placed in two contiguous reaches extending ~10,800 linear feet (lf) from Station 222+00 (53rd Avenue) to 330+00 (Dewees Inlet) as shown in Sheet 02. Fill Reach 1 extends 5,800 lf from Station 222+00 to Station 280+00 and will receive up to 750,000 cy of sand. Fill Reach 2 extends 5,000 lf from Station 280+00 to Station 330+00 and will receive up to 650,000 cy of sand. In total, up to 1,400,000 cy of sand may be placed during the nourishment. The project area is subject to rapid changes associated with shoal-bypassing events; therefore, the quantities and fill limits may be adjusted at the time of construction. Any changes will not increase the overall quantity or nourishment limits. Some portions of the shoreline within the project area may not be nourished if the beach condition at the time of construction is sufficient (likely in the area of shoal attachment).

Reach 3

Nourishment will be placed in the area extending from the south end of the island at Breach Inlet (Station 6+00) ~8,000 ft north to 14th Avenue (Sea Cabins Pier at Station 86+00). Reach 3 will receive between 300,000 and 600,000 cy of sand (average fill density of 37.5 cy/ft up to 75 cy/ft). Fill will taper at each end to the existing contours.

Nourishment will be accomplished using a hydraulic cutterhead dredge and additional equipment typical of beach nourishment projects, including submerged pipelines, bulldozers, loaders, and accessory equipment. Temporary training dikes will be used to contain the slurry discharge parallel to the shore. Nourishment fill sections will be dependent on the condition of the beach at the specific location, varying from ~30 cy/ft to 400 cy/ft with tapers at the ends of each fill reach. The construction berm elevation will be placed at +5.5 ft NAVD, and a small dune and storm berm will be constructed along the portions of the beach lacking any significant dune structure at the time of the project (Sheets 05 and 06). The dune will consist of a crest elevation no greater than +10 ft NAVD and crest width no wider than 15 ft, with a seaward slope of 1 on 4. The storm berm will be constructed at +7 ft to +8 ft NAVD and will extend up to 50 ft seaward of the dune toe. The seaward slope of the construction berm will be 1 on 20 between +5.5 ft and the mean high water (MHW) contour. Sand fencing and vegetation will be installed in strategic locations along the landward end of the berm to facilitate natural dune growth.

33. Overall project purpose and the basic purpose of each activity in or affecting US waters

The purpose of the project is for beach restoration, including:

- Restore the recreational beach along the northeast erosion zone of Isle of Palms from 53rd Avenue to Dewees Inlet.
- Restore the recreational beach along the southern end of the island which has experienced atypical erosion over the past few years.
- Restore a protective beach seaward of buildings such that dune enhancement may be initiated by the Applicant and individual property owners.
- Place nourishment volumes of variable section densities so as to reduce the variability of beach width caused by inlet sand-bypassing processes.
- Provide a protective buffer between existing infrastructure and the ocean.
- Eliminate the need for emergency erosion control measures.
- Improve the overall aesthetics of the beach and enhance its recreational value.

History

Reaches 1-2

The eastern end of Isle of Palms has been impacted by several discrete shoal-bypass events since the early 1980s, each of which produced dramatic fluctuations in the shoreline and resulted in some level of remedial action. To date, measures to restore the beach or protect infrastructure include sand scraping from accretional areas, installation of sand bags or other temporary structural measures, small-scale nourishment from upland sources, and nourishment by hydraulic dredge (using sediments from the 41st Street marina basin and from an offshore source). The episodic shoal-bypass events create erosion and accretion patterns that follow a well-documented general pattern including accretion along the beach behind the shoal and erosion of the adjacent beach on either side of the shoal. Once attached, the shoal sand spreads laterally and restores the adjacent beaches. While the general pattern is understood, each event is unique in the attachment location, shoal size, and duration of the attachment process. Also, each shoal moves under unique wave conditions which impacts all of these factors and determine the direction and magnitude of net sediment transport on either side of the shoal.

Beach recession rates of the order 200–500 ft have been associated with previous events along the northeast end of Isle of Palms. While localized shoreline change and volumetric erosion or accretion are large in magnitude with each event, the net annual sand loss rate (deficit) is low—in the range 15,000–30,000 cy/yr. Any long-term solution to erosion must therefore restore the small annual deficit as well as add a large volume that widens the beach sufficiently to buffer development from cyclical erosion events. Historical data indicate that shoal-bypassing events and the influx of sediment they have introduced to the beach at the northeast end of Isle of Palms are responsible for the relatively healthy beach along downdrift sections of the island.

Studies of previous shoal-bypassing events suggest that downcoast areas of Isle of Palms receive almost no sand from the northeast end of the island during Stage 2 of the shoal-bypass cycle. It is during Stage 3 when the majority of downcoast transport occurs. Therefore, a goal of the proposed project is to reshape the shoreline closer to Stage 3 conditions so that sand will move alongshore and downcoast under normal wave processes.

Reach 3

Reach 3 has typically been accretional in recent history, leading to a stable dune field fronting all properties. In the area near the spit, the beach accreted to the point that another row of buildable lots developed and houses were constructed seaward of the original beachfront homes in the late 1980s. Many of the older homes (built

lower than modern design restrictions) were destroyed during Hurricane *Hugo*; however, following the storm, the spit area and beach fronting the commercial area have accreted. No significant erosion issues have occurred along the reach since it was developed. Periodic small-scale erosion typical of stable to accretional beaches (ie – Kiawah Island) has been noted, but the long-term trend has been minor accretion.

Beach Condition Changes 2008–2015

The Applicant completed a large-scale beach nourishment project in 2008, which added ~875,000 cy of sand to the beach between Stations 222+00 and 340+00. Following the project, the Applicant has monitored the project area beach using a series of beach profiles spaced at 200 ft and extending offshore up to 15,000 ft to encompass the Dewees Inlet delta. Profiles have also been obtained at 1,000-ft intervals along the beach west of the project area. Surveys have been obtained at least annually, and several additional surveys were obtained during scraping events or after storms. A map showing monitoring stations is shown in Figure 1.

From 2008 to 2012, the beach condition in the project area remained healthy with erosion varying across the project area and hotspots located along the area of the 2007 shoal attachment (Dunecrest Lane) and near the Ocean Club condo unit. Overall, the project area lost ~540,000 cy of sand between 2008 and 2012 (Fig 2), leaving the beach with ~456,400 cy more sand than the pre-nourishment condition (including the effects of natural accretion). The majority of the loss was due to spreading of shoal sand, which had created an artificial bulge in the shoreline. Despite the rapid erosion in the area near Dunecrest Lane and Beachwood East, the initial beach width was great enough to maintain a dune and dry beach through 2014. In front of Ocean Club (Station 314+00), the erosion reached a point by 2012 that restorative action was required and the first "shoal management" project was constructed. While there was still a dune present and substantially more sand than the pre-2008 condition, the likelihood of future erosion warranted action. The project moved ~80,000 cy of sand from an accretional area in the lee of another attaching shoal to the area fronting Seascape, Ocean Club, and the 18th hole of the Links Course.

The placed sand eroded over the next few months, and by 2014, the hotspot erosion continued near Ocean Club. Homeowners installed emergency erosion measures under individual permits, including sandbags and experimental wave-dissipation systems. At this time, the attaching shoal remained a few hundred feet offshore, and the accompanying adjacent erosion was at its most extreme. The area near Ocean Club was critically eroded, and structures were imminently threatened. At the same time, erosion near Beachwood East accelerated and was beginning to threaten properties. Another shoal management project was conducted in winter 2014–2015, transferring a total of ~248,000 cy to two fill areas. The area near Ocean Club received ~180,000 cy and the area near Beachwood East received ~70,000 cy. Following the project, the fill near Ocean Club proved to be longer lasting than the 2012 project, and some sand remained in place until the October 2015 storm event associated with Hurricane *Joaquin*. The fill fronting Beachwood eroded rapidly due to continued focused erosion associated with the attaching shoal, and homeowners reinstalled emergency measures.

The eastern end of the island lost sand every year between 2008 and 2014, but gained sand between 2014 and 2015, indicating that the shoal is now becoming part of the active beach. Evidence of natural restoration of the eastern erosional arc is visible; however, the western erosion area fronting Beachwood East has not yet begun to recover. The beach between Stations 222+00 and 330+00 holds ~280,000 cy more sand than it did prior to the 2008 nourishment. Additional sand is still migrating in with the attaching shoal, but it is likely an insufficient volume to fully restore the erosional areas to a healthy condition that can withstand later shoal events. Since March 2009 (the first comprehensive island-wide survey), the eastern end of the island has lost 647,100 cy while the central and western portions of the island have gained 656,700 cy.

Along the western end of the island, the historical trend has been accretion; however, since 2010, the beach west of 7th Avenue has lost ~241,000 cy of sand. The erosion has been most severe along the western end of the beach, closest to 2nd and 3rd Avenues. The erosion has migrated along the beach in arcs, generally moving north from Breach Inlet. Hurricane *Sandy* caused severe erosion and damage to many walkovers. The beach had shown signs of recovery prior to Hurricane *Matthew*, which caused 30–50 ft of dune erosion.

Basis for Nourishment Volumes and Anticipated Longevity

Reaches 1-2

The proposed plan is based on an ideal beach profile which contains 350 cy of sand to −10 ft NAVD. The ideal volume represents a healthy beach section with sufficient sand to maintain a dune and withstand storm-induced erosion. In addition, the nourishment profile is designed to withstand average erosion over an ~10-year period. The historical annual loss rate is estimated to average ~2.0 cy/ft/yr (CSE 2007, Kana & Gaudiano 2009); however, losses since 2008 have averaged ~19.3 cy/ft/yr. The higher rate is a function of the time interval, which captures the maximum beach losses associated with spreading of the 2007 shoal (and nourishment) sand, but does not yet capture significant gains of the approaching shoal. The proposed borrow source is well removed from the active littoral zone and Dewees Inlet. Therefore, the proposed nourishment will add a new supply of sand to the Isle of Palms system. The proposed nourishment volume is expected to have an estimated ten-year life under normal erosion patterns; however, hotspots created by inlet effects may reduce the life of nourishment in some locations. The proposed project would create a wider beach then the 2008 project with the intent of providing longer-term shore protection.

The Applicant expects changes in the shoals of Dewees Inlet to follow similar patterns as the 2008–2014 period. Presently, the inlet configuration is similar to the 2008 condition with a large shoal recently attached and the inlet channel deflected to the south. Since 2008, monitoring has confirmed a large-scale channel avulsion event, which resulted in reorientation of the Dewees Inlet channel and a release of a large sand mass as a discrete shoal event. The shoal migrated from the outer delta between 2008 and 2015 and is presently the shoal that is attaching to the beach. Two smaller shoal events built from the 2007 shoal attachment event, attaching in 2009 and 2010. The Applicant expects at least one additional shoal-bypass event is likely to occur over the next 8–10 years (Gaudiano & Kana 2001). Sand presently on the shoal platform off the central project area is expected to migrate landward and add to the supply of visible sand on the beach.

Reach 3

The nourishment design along Reach 3 intends to add sufficient volume of sand to restore the primary dune and recreational beach lost since 2010 as well as create additional beach to enhance resiliency to future damage. The full volume (60 cy/ft) would add ~75 ft of new beach width after profile adjustment, which restores the beach to at or above the 2010 condition in most areas. Along the commercial area, sand would be placed to increase dune height and recreational area. This would also provide a feeder beach for spreading sand to feed the areas further south.

The Applicant anticipates these influxes of sand will provide a reasonable dry-beach buffer along the project areas. However, localized erosion hotspots may develop at some point in time within ten years after nourishment. The Applicant plans to conduct detailed annual surveys of the beach, inlet, and shoals so as to develop sediment budgets and identify developing problems before they threaten property and community infrastructure. Results of annual monitoring will be submitted for review to regulatory agencies.

The proposed nourishment project is consistent with the Applicant's long-term beach management plan (Jones 2008).

CSE. 2007. Shoreline assessment and long-range plan for beach restoration along the northeast erosion zone, Isle of Palms, South Carolina. Feasibility Report for Wild Dunes Community Association, Isle of Palms, SC. Coastal Science & Engineering (CSE), Columbia, SC, 76 pp.

Gaudiano, DJ, and TW Kana. 2001. Shoal bypassing in South Carolina tidal inlets: geomorphic variables and empirical predictions for nine mesotidal inlets. Jour Coastal Research, Vol 17, pp 280-291.

Jones, CP. 2008. Isle of Palms long-term beach management. Report prepared for the City of Isle of Palms, SC; Durham, NC, 43 pp + appendices (February).

Kana, TW, and DJ Gaudiano. 2009. Regional beach volume changes at decadal to century time scales – central South Carolina USA. In JM Smith (ed), Proc 31st Intl Conf on Coastal Engineering (Hamburg, Germany: 31 Aug–5 Sep 2008), World Scientific, pp 2340–2351.

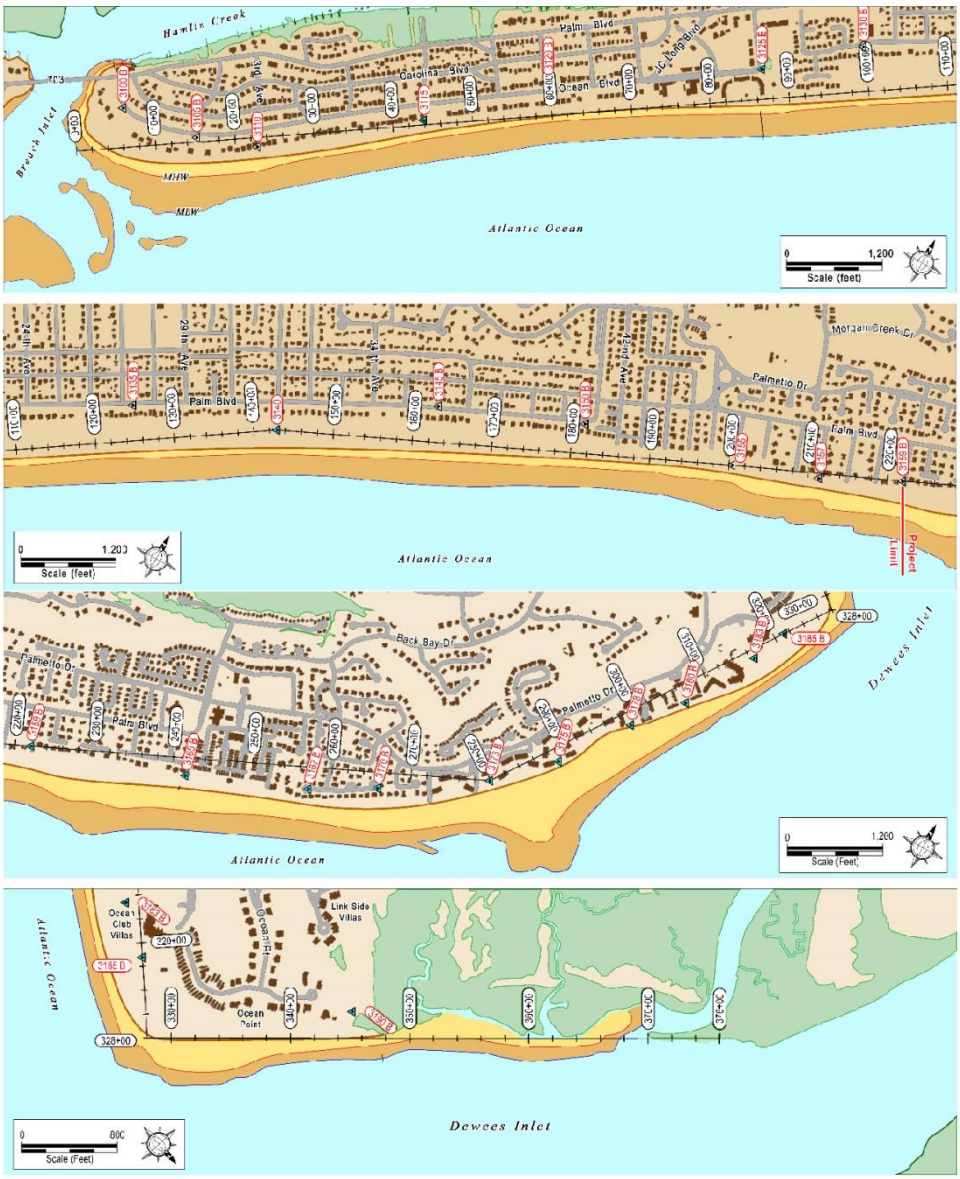
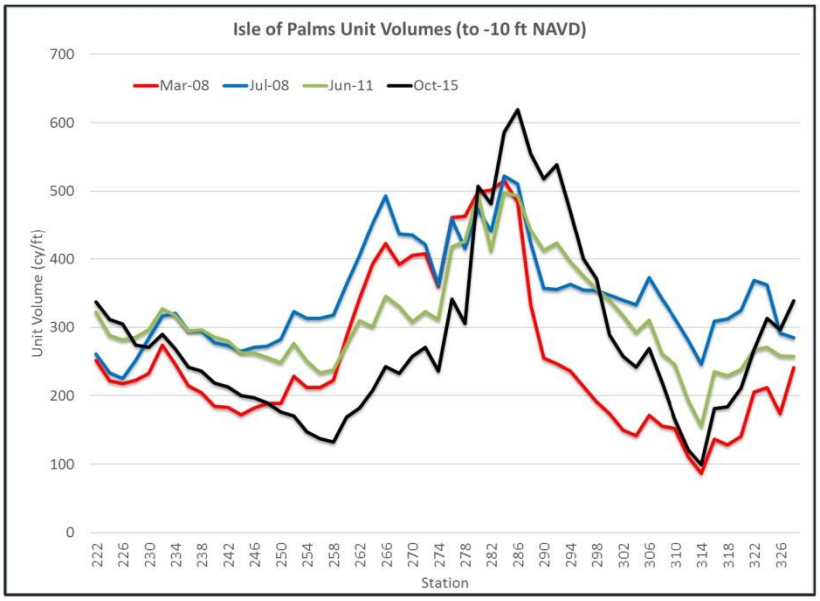


Figure 1. The Applicant established a monitoring baseline to encompass the length of Isle of Palms. The baseline between Stations 222+00 and 376+00 corresponds to the baseline used in the 2008 project. Red labels indicate locations of OCRM survey monuments. City profile sections are oriented perpendicular to the baseline while OCRM profiles are perpendicular to the local beach azimuth. [CSE and OCRM azimuths are only significantly different at Breach Inlet.]



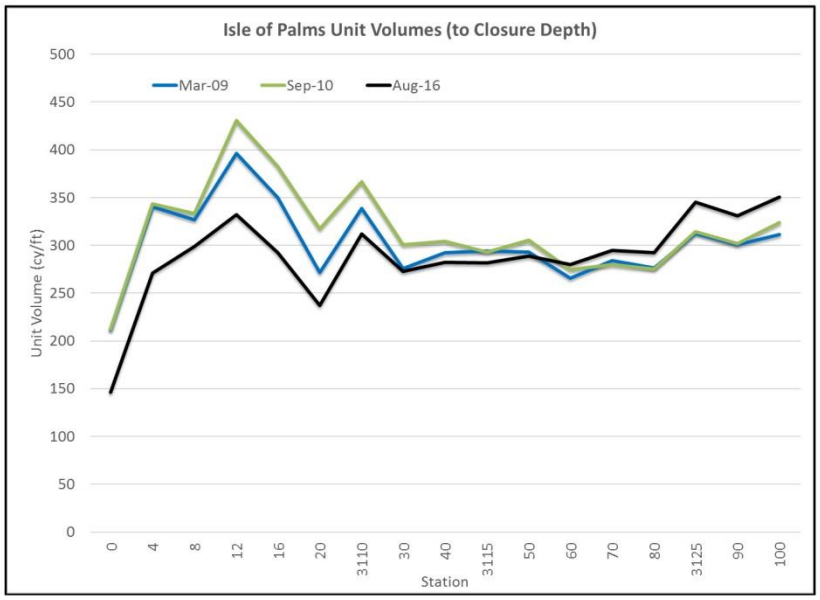


Figure 2. Beach unit volumes along the project areas measured from the structure line to the local closure depth. [Upper] Reaches 2–3: Where the black line is higher than the red line, more sand is present on the beach than existed prior to the 2008 nourishment project. Erosion hotspots are present at Stations 246+00–274+00 and 310+00–318+00. [Lower] Reach 1 showing the 2009, 2010, and 2016 beach volumes. The limits of Reach 1 extend from Station 6+00 to Station 86+00.

39. Describe measures taken to avoid and minimize impacts to waters of the United States

The proposed project is anticipated to be constructed between 1 November and 31 July to minimize potential impacts to sea turtles; however, the final project schedule will be determined in coordination with environmental agencies with appropriate conditions in place for varying windows (ie – turtle monitoring). No construction activities will take place during sea turtle hatching season (1 August to 31 October). Construction will take place over an ~60-day to 120-day period, working 24 hours per day. Turbidity associated with the project will be localized and short-term given the dominance of sand-sized material with ~2 percent mud in the deposits. Turbid plumes are expected to dissipate in minutes to hours within ~500 ft of the discharge point based on prior experience.

The proposed project will result in excavation and mortality of ~150 acres of surficial benthic organisms in the borrow area. Filling operations will bury ~125 acres of shallow beach and inshore habitat (ocean shoreline), resulting in mortality and displacement of existing benthic populations. Nourishment will provide an additional ~60 acres of dry-sand beach (habitat for turtle nesting, shorebird roosting, and recreational area). A wider dry beach will allow natural expansion of the foredune and its associated vegetation. The recreated wet-sand beach will be similar to or greater in area than the previous wet-sand beach buried by the fill. It is expected that these areas will recolonize naturally and rapidly with a similar suite of species (cf – Jutte et al 2002, CZR 2014).

The proposed borrow areas are situated around a submarine ridge where natural bottom depths vary from 15 ft to 30 ft. The excavations will be of the order 7 ft ±1 ft, which is comparable to the natural depth variation in the area. Sediments in the available borings suggest the proposed borrow areas contain actively mobile sediments. Anaerobic conditions were generally not detected within the upper 8 ft of the substrate for the cores in the proposed borrow search areas. Small quantities of interstitial mud were detected in some samples. The Applicant plans to obtain additional borings to further refine the boundaries of the proposed borrow area(s) and optimize sediment quality for the project (within the proposed area footprints shown in Sheets 08 and 10).

The Applicant provided an *"Operations, Monitoring, and Contingency Plan"* for the 2008 nourishment project, which included details on how the application would ensure sediment quality of the beach fill, document removal of sandbags, conduct environmental monitoring during and after the project, and report findings of these efforts to the USACE and others. The Applicant proposes to enact similar steps to ensure the project is completed with minimal environmental impacts and that any deviations from expectations are documented appropriately.

The Applicant (through its Agent) will provide all contractors associated with construction a copy of the permit and associated drawings. A copy of the permit will be kept at the construction site at all times.

CZR. 2014. Nags Head beach 2011 nourishment project. Post-Year 2 and Final Report for Town of Nags Head, North Carolina. CZR Incorporated (Wilmington NC) and CSE (Columbia SC), 65 pp plus appendices.

IOP. 2008. Local comprehensive beach management plan – City of Isle of Palms, South Carolina – 80 pgs.

Jutte, PC, RF Van Dolah, and PT Gayes. 2002. Recovery of benthic communities following offshore dredging, Myrtle Beach, South Carolina. Jour Shore & Beach, Vol 70(3), pp 25-30.

Sea Turtles

The Applicant proposes to construct the project outside of sea turtle hatching season (August-October), and if practicable, outside of sea turtle nesting season (May-August). Should portions of the project overlap with turtle nesting season, standard protection and monitoring actions will be completed to minimize impacts to turtles. Action items include:

- Daily early morning surveys for sea turtles.
- Nest relocation by qualified personnel for nests laid in areas where they may be impacted by construction activities.

- Equipment storage will be off the beach to the maximum extent practicable and as far landward as possible. Temporary fencing or other measures will be utilized to prevent turtles from being trapped by equipment.
- Direct night-time lighting of the beach will be limited to the immediate construction area and shielded according to USFWS recommendations. If any turtles are observed in the construction area, activities will cease until the turtle(s) returns to the water and any nest is marked.
- Tilling of the nourished beach and compaction monitoring for three years after nourishment.
- Escarpment monitoring and leveling for three years after nourishment.

Emergency Erosion Control Device Removal

Much of the need for the 2008 contingency plan arose from the extensive use of sandbags in 2007–2008 and the requirement that those bags be removed and documented as part of the project. The Applicant (City of Isle of Palms) was not the owner or responsible party of the sandbags, but took responsibility for removal of the bags during the project. For the proposed project, individual persons holding permits for erosion control measures will be responsible for removing temporary structures. In areas with sufficient storm protection, emergency measures will be removed prior to sand being placed at that location, and the nourishment fill will reach to the escarpment line or as landward as possible. In areas where removal of the emergency measures would leave properties threatened to damage, sand will be placed seaward of the structures, and the structures will be removed at the time of sand placement or immediately thereafter.

The Applicant will obtain agreements with the emergency-order permit holders prior to construction which will require removal of all emergency measures prior to or during nourishment. The agreement will note that failure to remove emergency measures will subject the permit holder to fines or other penalty from OCRM and/or the USACE. Nourishment sand will not be placed on top of or landward of emergency structures at any time during the nourishment effort.

Removal of emergency measures will be documented photographically as each structure is removed. Records will be checked with existing OCRM tallies for numbers of sandbags and lengths of wave-dissipation systems. The Applicant will forward weekly updates to OCRM staff which will include the location and description of removal efforts and progress of nourishment. Approval of complete removal will be coordinated between OCRM and the emergency permit holders. No dune construction, sand fencing, or vegetation will be completed until OCRM has indicated a property is eligible.

Sediment Quality

The Applicant will define permitted borrow areas so as to reduce the amount of gravel and shell material placed on the beach. Specific monitoring will include:

1) Collection of additional borings in Areas E and F; analysis of sediment quality; and preparation of maps of sediment grain size, percent mud, percent gravel, and percent shell material.
2) Review of borrow area geotechnical data with permitting agency officials and identification of priority subareas for excavation. The Applicant (through its Agent) will determine a dredging strategy to utilize the borrow areas in an efficient manner while maintaining sediment quality throughout the project.
3) Pre-construction, native-beach sand samples will be obtained at 1,000-ft intervals along the project area (between Stations 6+00 and 86+00 and Stations 230+00 and 320+00). At each location, samples will be taken at the toe of the dune, middle of the dry-sand berm, approximate mean sea level, and shallow subtidal zone (wading depth). Samples will be sieved at 0.25-phi intervals and acid-washed to determine shell content.

4) The Applicant (through its Agent) will have qualified personnel under the direction of a registered professional geologist monitoring sediment quality on the beach during construction and correlating it with the borrow area conditions.

5) During construction, samples of the beach fill will be obtained at 200-ft intervals and compared to the native and borrow area samples. Samples along one shore-perpendicular transect will be combined into one physical composite and sent to the laboratory for grain-size analysis. Samples will be analyzed as soon as possible but will not exceed five (5) days after collection. Sediment test results will be submitted weekly to USACE and SCDHEC-OCRM for review.

6) Additional sampling and frequent observation will be completed during the initial 4–6 hours of pumping when the dredge moves to a new borrow site until the on-site technical representative (OTR) and contractor are satisfied with the quality of sand. The contractor will also have observers monitoring sediment quality 24 hours per day and will immediately report any significant changes in the discharge to the OTR so that decisions to move the dredge can be accomplished in a timely manner.

7) Upon completion of construction, the Applicant (through its Agent) will resample the project area and obtain representative samples of the beach fill using the same stations as the pre-project samples. Results will be compared with pre-project beach samples and borrow area sediment test results. Data will be submitted to the USACE and OCRM in a comprehensive final report.

8) Relocation of the dredge if unacceptable sediments are encountered. The contractor in consultation with the owner's on-site technical representative will notify the Applicant, USACE, and OCRM if significant non-compatible material is encountered in the borrow area. The dredge will be relocated to other subareas within the permitted borrow area if the following conditions are encountered:

   a. Evidence of high concentrations of mud persisting for more than 30 minutes in the slurry based on visual observation at the discharge pipe and monitoring of specific gravity of the slurry at the dredge.

   b. Evidence of high concentrations of nonshell gravel such as chunks of limestone, marl, or similar cemented sediments which persist for more than 30 minutes in the slurry based on visual observation at the discharge pipe and monitoring of specific gravity of the slurry at the dredge.

   c. Evidence of high concentrations of coarse shell material exceeding pebble-sized clasts (eg – oyster shells, quahogs, etc) which persist for more than 30 minutes in the slurry based on visual observations at the discharge pipe and monitoring of specific gravity of the slurry at the dredge.

9) Accumulations of mud rollers and coarse gravel material (ie – rock fragments, large shells). Because of the lag time between excavations in the borrow area and pump-out onto the beach, accumulations of mud rollers and coarse gravel material may occur before the dredge can be relocated. If such accumulations exceed the equivalent of one 15-cy dump truck per 100 linear feet of beach, the Applicant will arrange to pick up the coarse material using hand labor or a beach-sweeping device as soon as practicable upon completion of the section or upon completion of the project. To the extent practicable, such accumulations will be raked into stockpiles above the high-tide mark and will be removed prior to completion of the project.

10) Beach compaction tilling –The Applicant will perform tilling of the fill berm upon project completion as specified in the contract documents. Tilling will be accomplished to a depth of ~36 inches and will span the dry berm. The Applicant (through its Agent) will perform post-tilling compaction tests at ~500-ft intervals along the project area and will report the results to USACE and SCDHEC-OCRM following standard testing protocols.

Monitoring Plan

The Applicant will establish and complete the following monitoring plan as part of the proposed project. Some of these action items were mentioned previously, but are included here for completeness.

Beach Surveys – The Applicant will conduct topographic and bathymetric beach surveys before and after the project, and for 3 years post project. Surveys will be conducted at profiles not to exceed 200 ft in spacing in Reaches 2-3 and 500 ft in Reach 1 in the alongshore direction and will encompass the beach between a point landward of the stable dune and extend to depths of -12 ft NAVD, or a distance of 3,000 ft from the shoreline, whichever is closer. Post construction surveys will compare beach volumes and contour positions to before-and-after project conditions to document beach volume changes and identify any erosion hotspots. Annual reports will be submitted to USACE and SCDHEC-OCRM.

Borrow Area Surveys – The Applicant will conduct pre-project, post-project, and out-year bathymetric surveys of the utilized dredge area. Surveys will encompass the boundaries of the dredge area and will include a minimum 400 ft buffer along the outside of each area. Surveys will be completed using track lines at a spacing not to exceed 100 ft. Out-year surveys will be completed in years 1, 3, and 5 following construction. Data will be used to determine infilling rates and topographical changes to the seafloor. Results will be included in annual monitoring reports in conjunction with the beach surveys.

Sediment Monitoring

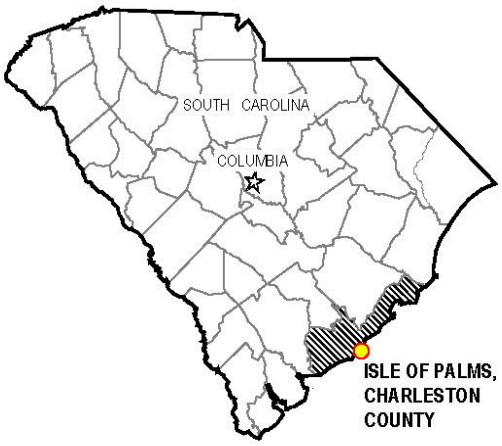
Beach – Pre and post nourishment beach sediment samples will be taken at stations spaced 1,000 ft in the alongshore direction. At each station, samples will be obtained using a push core at the toe of the dune, crest of the berm, mid beach face, and shallow underwater zone. Samples will be dried and tested for grain size distribution and shell content. Results will be included in a comprehensive project report.

Borrow Area – Pre-project, post-project, and out-year surficial sediment samples will be obtained in the dredge areas to evaluate possible changes to the sediment characteristics over time as new sediment infills the borrow area. Ten sediment samples will be collected at random locations within each borrow area using push cores ~10cm in diameter and 10cm deep. Samples will be analyzed for grain size, shell content, and mud content. Results can be used to infer recovery of the borrow area and what type of benthic community is likely present. Summaries of the findings will be submitted in annual reports to USACE and SCDHEC-OCRM.

Lighting – The Applicant will conduct one lighting survey of the beach in the first May following nourishment following guidelines prepared by USFWS. A summary report of the survey, including the methodology, map of lighting sources, and description of each source) will be submitted to USFWS within three months of the survey. Following submission of the survey results, the Applicant will meet with USFWS to discuss the report.

40. Provide a brief description of the proposed mitigation plan to compensate for impacts to aquatic resources or provide justification as to why mitigation should not be required

The restorative nature of the project and the lack of impacts to freshwater or estuarine wetlands suggest that no mitigation for the action be required. The project will restore and preserve dry sand and dune habitat used by shorebirds and endangered species. Impacts of beach nourishment projects are well understood and, when designed properly and the site allows, limited to temporary impacts to the immediate beach and borrow area. Borrow areas have been selected to minimize placement of silt-sized particles on the beach and to closely match the native grain size along the beach. The project is proposed to be constructed during periods of low biological activity to minimize impacts to benthic organisms and sea turtles. The Applicant proposes that no mitigation should be required for the proposed project, as is the typical custom for beach nourishment activities.



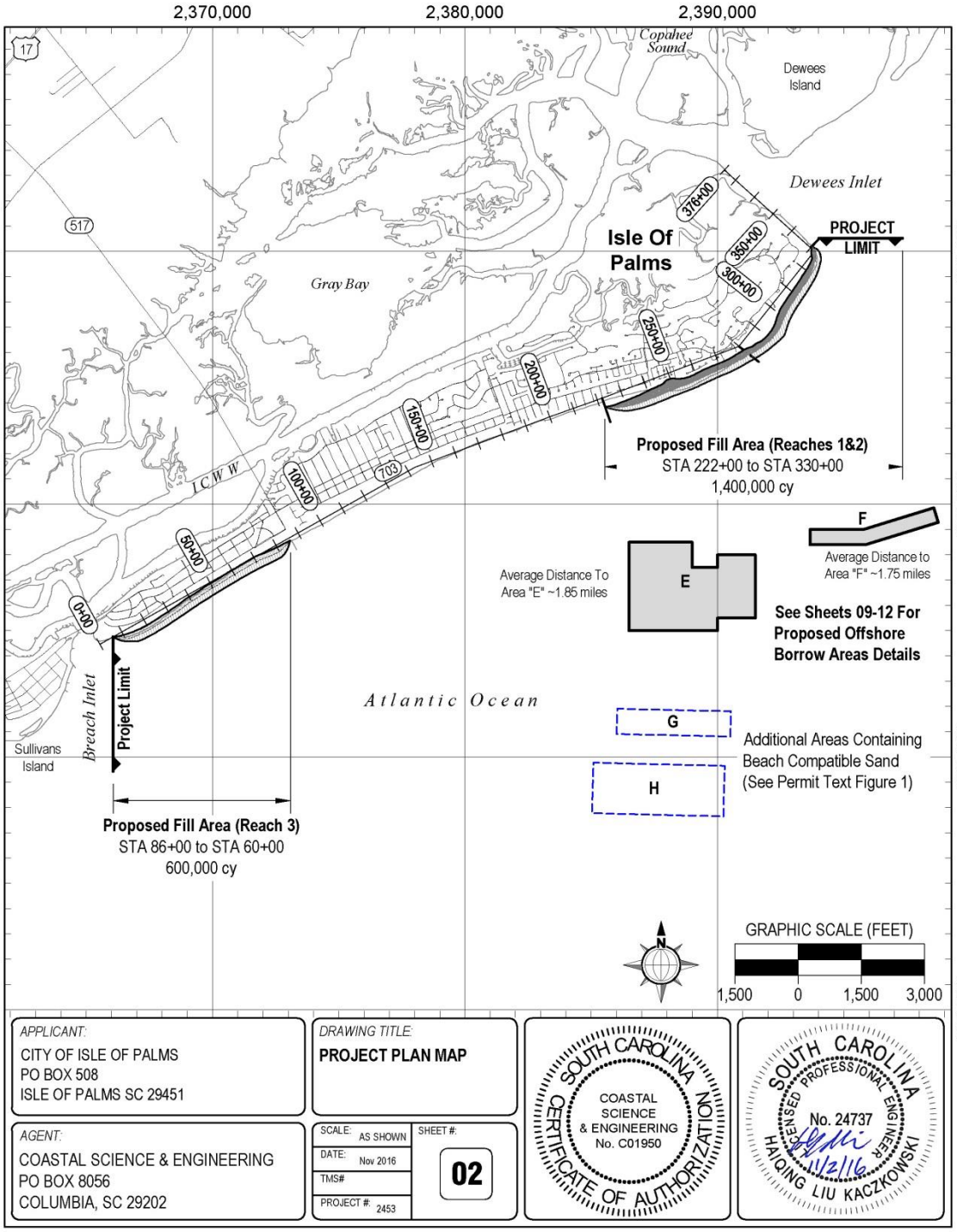
DIRECTIONS:
From Charleston, take US-17 North. Turn right onto SC 517 (Isle Of Palms connector). Turn left onto palm blvd. The project limits extend along the beach at Ocean Point Dr (*Dewees Inlet*) to approximately 53rd Ave and from the Pier at 14th Ave to Breach Inlet.

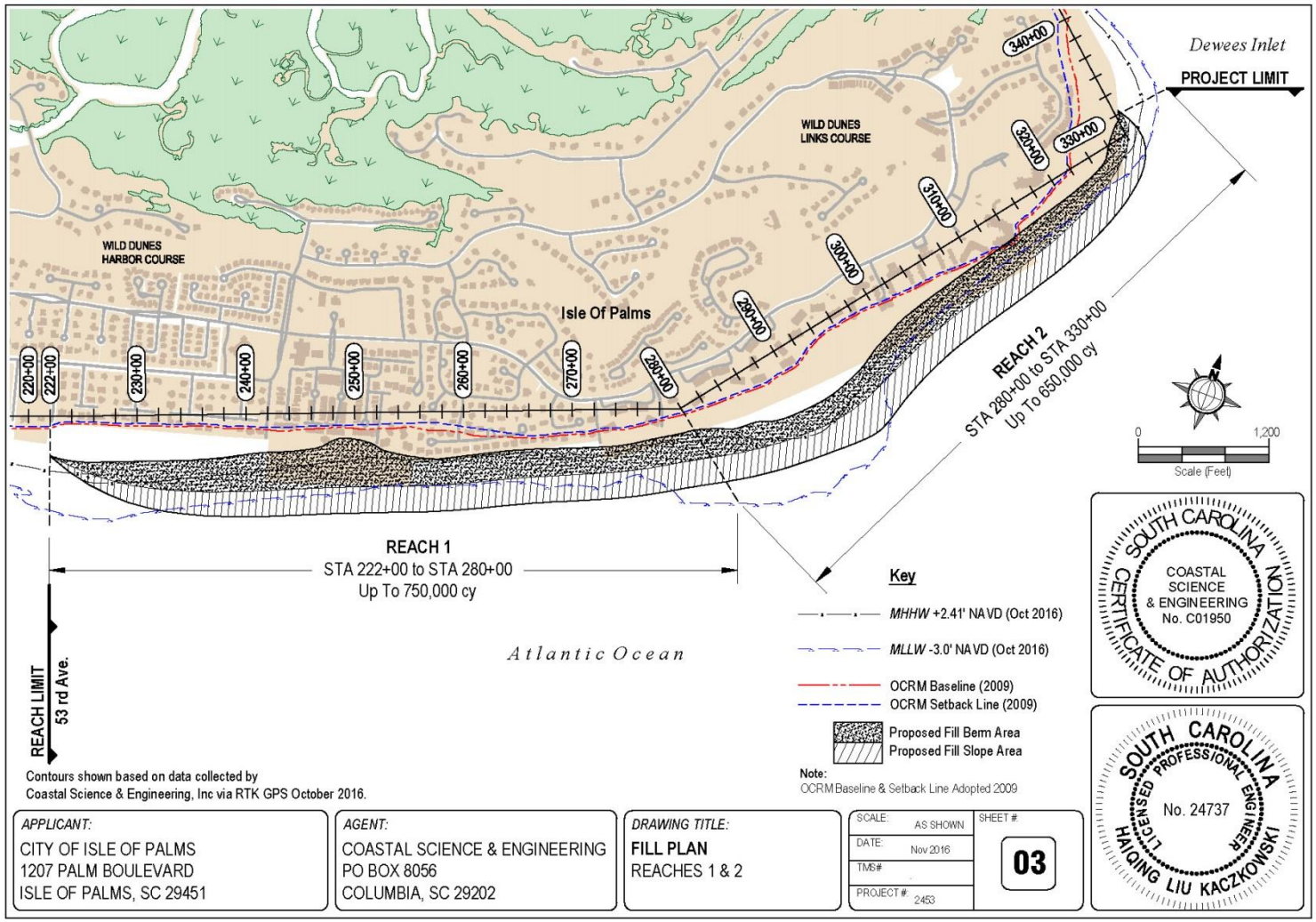
Project Location
Latitude: 32° 48.5' N
Longitude: 79° 43.4' W

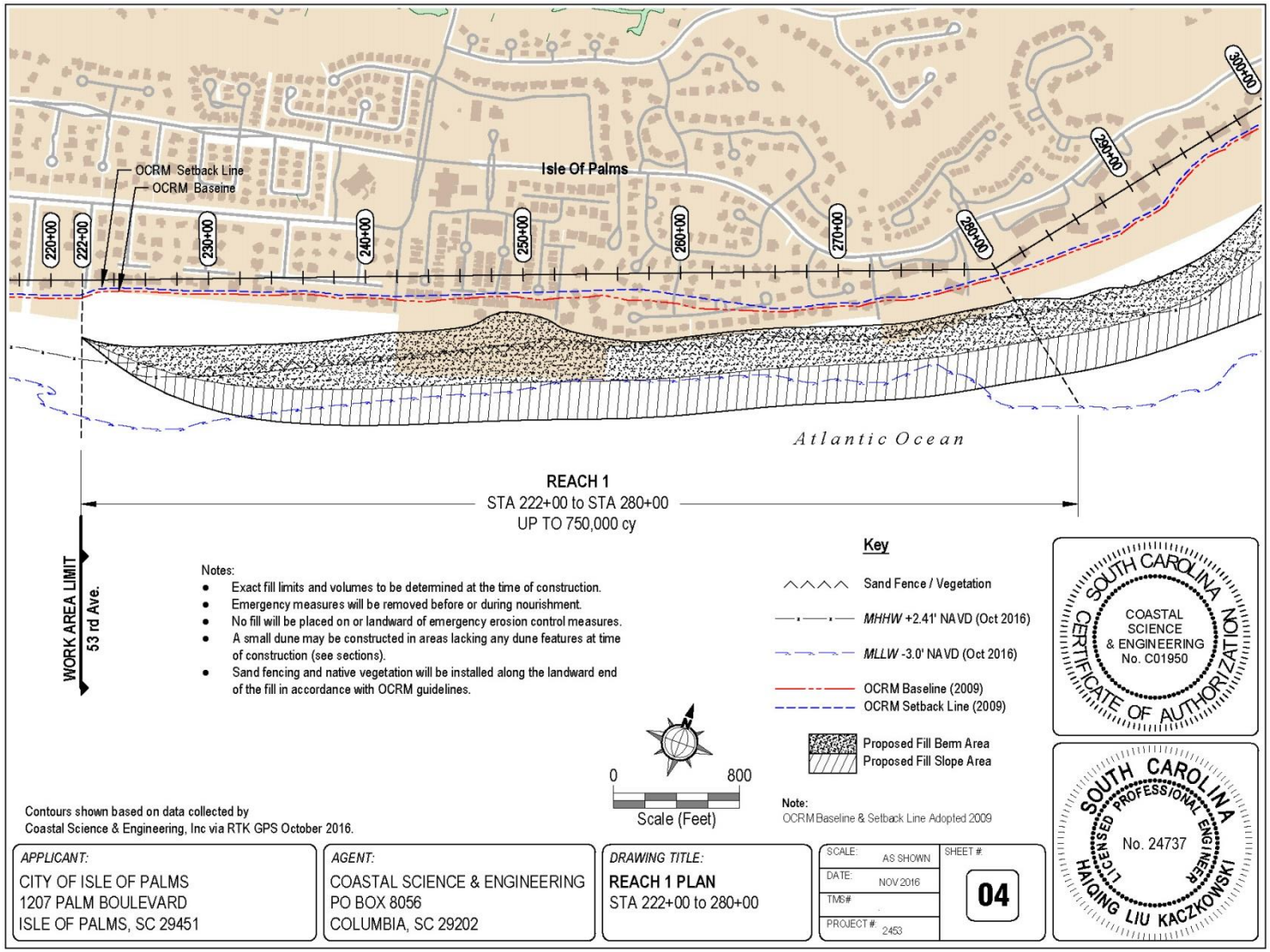
APPLICANT: CITY OF ISLE OF PALMS PO BOX 508 ISLE OF PALMS SC 29451	*DRAWING TITLE:* **VICINITY MAP**
AGENT: **P/N 2010...** COASTAL SCIENCE & ENGINEERING PO BOX 8056 COLUMBIA, SC 29202	SCALE: AS SHOWN DATE: Nov2016 TMS# PROJECT #: 2435 SHEET #: **01**

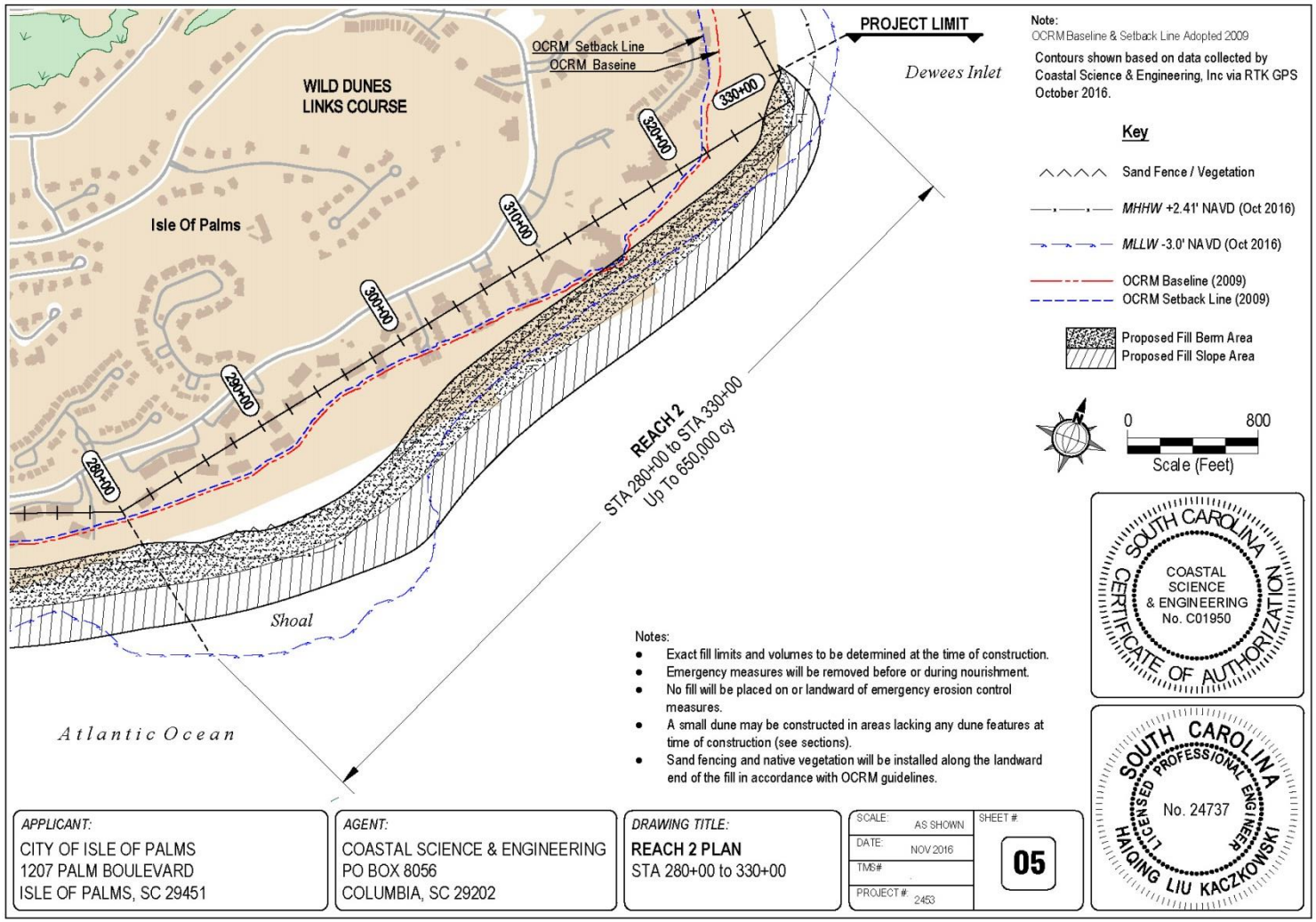
SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION — COASTAL SCIENCE & ENGINEERING No. C01950

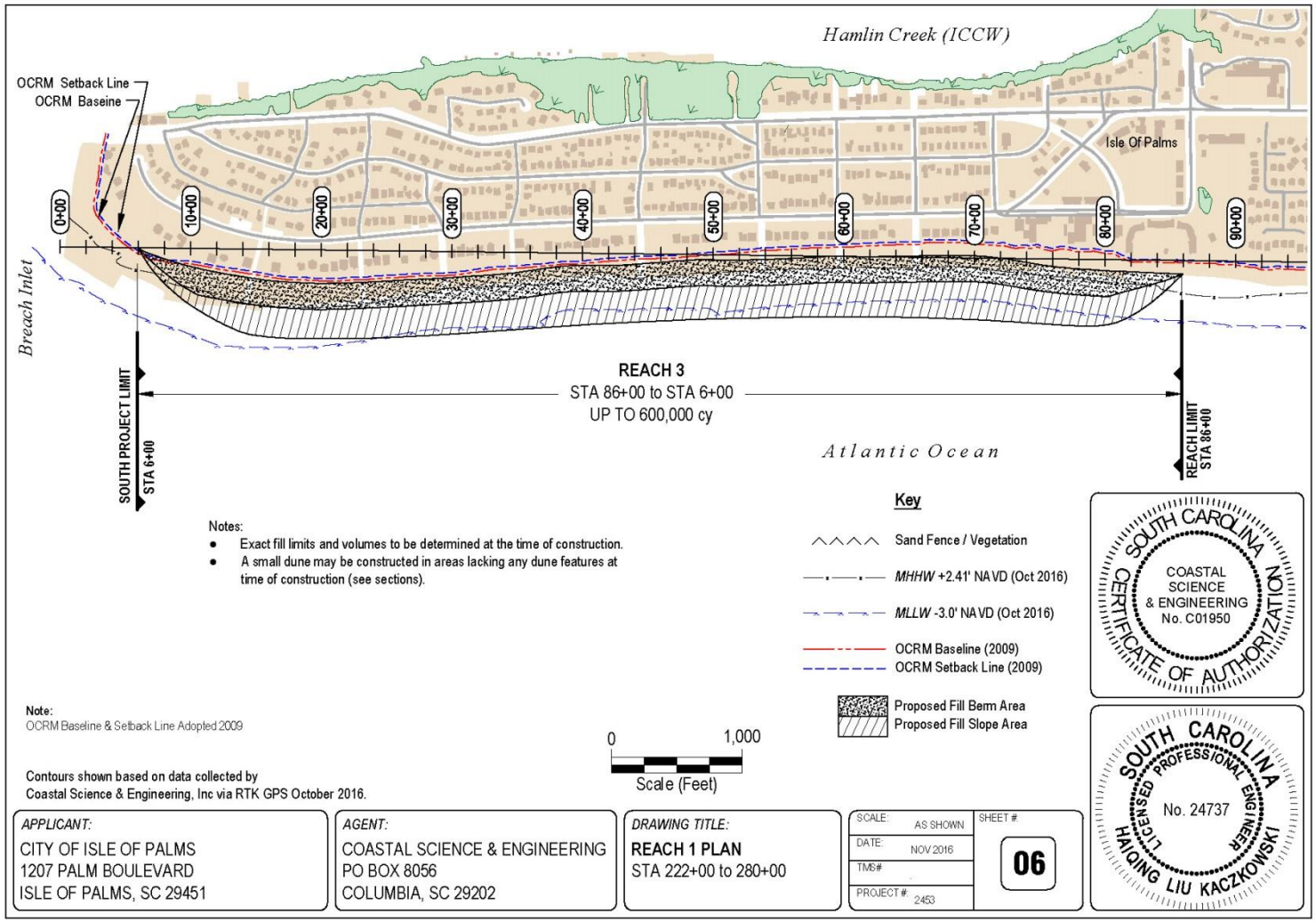
SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER — No. 24737 — HAIQING LIU KACZKOWSKI


2,370,000
2,380,000
2,390,000
360,000
350,000
340,000
330,000
17
517
703
Copahee Sound
Dewees Island
Dewees Inlet
Isle Of Palms
PROJECT LIMIT
Gray Bay
376+00
350+00
300+00
250+00
200+00
150+00
100+00
50+00
0+00
ICWW
Proposed Fill Area (Reaches 1&2)
STA 222+00 to STA 330+00
1,400,000 cy
F
Average Distance to Area "F" ~1.75 miles
Average Distance To Area "E" ~1.85 miles
E
See Sheets 09-12 For Proposed Offshore Borrow Areas Details
Atlantic Ocean
G
H
Additional Areas Containing Beach Compatible Sand (See Permit Text Figure 1)
Breach Inlet
Project Limit
Sullivans Island
Proposed Fill Area (Reach 3)
STA 86+00 to STA 60+00
600,000 cy
N
GRAPHIC SCALE (FEET)
1,500 0 1,500 3,000
APPLICANT:
CITY OF ISLE OF PALMS
PO BOX 508
ISLE OF PALMS SC 29451
DRAWING TITLE:
PROJECT PLAN MAP
AGENT:
COASTAL SCIENCE & ENGINEERING
PO BOX 8056
COLUMBIA, SC 29202
SCALE: AS SHOWN
DATE: Nov 2016
TMS#
PROJECT #: 2453
SHEET #:
02
SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION
COASTAL SCIENCE & ENGINEERING
No. C01950
SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER
No. 24737
HAIQING LIU KACZKOWSKI
11/2/16

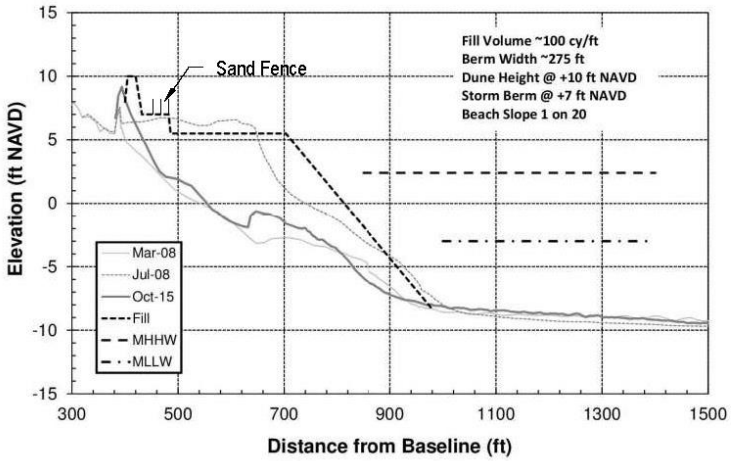

Dewees Inlet
PROJECT LIMIT
WILD DUNES LINKS COURSE
WILD DUNES HARBOR COURSE
Isle Of Palms
340+00
330+00
320+00
310+00
300+00
290+00
280+00
270+00
260+00
250+00
240+00
230+00
222+00
220+00
REACH 2
STA 280+00 to STA 330+00
Up To 650,000 cy
REACH 1
STA 222+00 to STA 280+00
Up To 750,000 cy
Atlantic Ocean
REACH LIMIT
53 rd Ave.
0
1,200
Scale (Feet)
Key
MHHW +2.41' NAVD (Oct 2016)
MLLW -3.0' NAVD (Oct 2016)
OCRM Baseline (2009)
OCRM Setback Line (2009)
Proposed Fill Berm Area
Proposed Fill Slope Area
Note:
OCRM Baseline & Setback Line Adopted 2009
Contours shown based on data collected by
Coastal Science & Engineering, Inc via RTK GPS October 2016.
SOUTH CAROLINA
COASTAL SCIENCE & ENGINEERING
No. C01950
CERTIFICATE OF AUTHORIZATION
SOUTH CAROLINA
LICENSED PROFESSIONAL ENGINEER
No. 24737
HAIQING LIU KACZKOWSKI
APPLICANT:
CITY OF ISLE OF PALMS
1207 PALM BOULEVARD
ISLE OF PALMS, SC 29451
AGENT:
COASTAL SCIENCE & ENGINEERING
PO BOX 8056
COLUMBIA, SC 29202
DRAWING TITLE:
FILL PLAN
REACHES 1 & 2
SCALE: AS SHOWN
DATE: Nov 2016
TMS#
PROJECT # 2453
SHEET #
03


OCRM Setback Line
OCRM Baseline
Isle Of Palms
220+00
222+00
230+00
240+00
250+00
260+00
270+00
280+00
290+00
300+00
Atlantic Ocean
REACH 1
STA 222+00 to STA 280+00
UP TO 750,000 cy
WORK AREA LIMIT
53 rd Ave.
Notes:
Exact fill limits and volumes to be determined at the time of construction.
Emergency measures will be removed before or during nourishment.
No fill will be placed on or landward of emergency erosion control measures.
A small dune may be constructed in areas lacking any dune features at time of construction (see sections).
Sand fencing and native vegetation will be installed along the landward end of the fill in accordance with OCRM guidelines.
Key
Sand Fence / Vegetation
MHHW +2.41' NAVD (Oct 2016)
MLLW -3.0' NAVD (Oct 2016)
OCRM Baseline (2009)
OCRM Setback Line (2009)
Proposed Fill Berm Area
Proposed Fill Slope Area
0
800
Scale (Feet)
Note:
OCRM Baseline & Setback Line Adopted 2009
Contours shown based on data collected by
Coastal Science & Engineering, Inc via RTK GPS October 2016.
SOUTH CAROLINA
COASTAL SCIENCE & ENGINEERING
No. C01950
CERTIFICATE OF AUTHORIZATION
SOUTH CAROLINA
LICENSED PROFESSIONAL ENGINEER
No. 24737
HAIQING LIU KACZKOWSKI
APPLICANT:
CITY OF ISLE OF PALMS
1207 PALM BOULEVARD
ISLE OF PALMS, SC 29451
AGENT:
COASTAL SCIENCE & ENGINEERING
PO BOX 8056
COLUMBIA, SC 29202
DRAWING TITLE:
REACH 1 PLAN
STA 222+00 to 280+00
SCALE: AS SHOWN
DATE: NOV 2016
TMS#
PROJECT # 2453
SHEET #
04

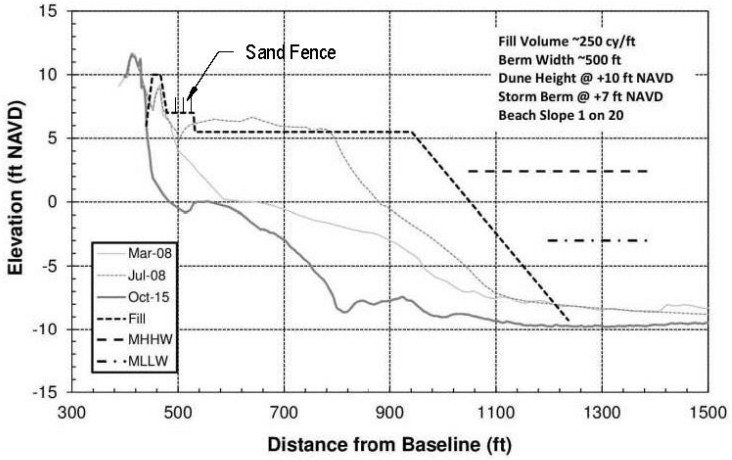

PROJECT LIMIT
OCRM Setback Line
OCRM Baseine
WILD DUNES
LINKS COURSE
Isle Of Palms
Dewees Inlet
330+00
320+00
310+00
300+00
290+00
280+00
REACH 2
STA 280+00 to STA 330+00
Up To 650,000 cy
Shoal
Atlantic Ocean
Note:
OCRM Baseline & Setback Line Adopted 2009
Contours shown based on data collected by Coastal Science & Engineering, Inc via RTK GPS October 2016.
Key
Sand Fence / Vegetation
MHHW +2.41' NAVD (Oct 2016)
MLLW -3.0' NAVD (Oct 2016)
OCRM Baseline (2009)
OCRM Setback Line (2009)
Proposed Fill Berm Area
Proposed Fill Slope Area
N
0
800
Scale (Feet)
Notes:
Exact fill limits and volumes to be determined at the time of construction.
Emergency measures will be removed before or during nourishment.
No fill will be placed on or landward of emergency erosion control measures.
A small dune may be constructed in areas lacking any dune features at time of construction (see sections).
Sand fencing and native vegetation will be installed along the landward end of the fill in accordance with OCRM guidelines.
SOUTH CAROLINA
COASTAL
SCIENCE
& ENGINEERING
No. C01950
CERTIFICATE OF AUTHORIZATION
SOUTH CAROLINA
LICENSED PROFESSIONAL ENGINEER
No. 24737
HAIQING LIU KACZKOWSKI
APPLICANT:
CITY OF ISLE OF PALMS
1207 PALM BOULEVARD
ISLE OF PALMS, SC 29451
AGENT:
COASTAL SCIENCE & ENGINEERING
PO BOX 8056
COLUMBIA, SC 29202
DRAWING TITLE:
REACH 2 PLAN
STA 280+00 to 330+00
SCALE: AS SHOWN
DATE: NOV 2016
TMS#
PROJECT # 2453
SHEET #
05


Hamlin Creek (ICCW)
OCRM Setback Line
OCRM Baseine
Isle Of Palms
0+00
10+00
20+00
30+00
40+00
50+00
60+00
70+00
80+00
90+00
Breach Inlet
SOUTH PROJECT LIMIT
STA 6+00
REACH 3
STA 86+00 to STA 6+00
UP TO 600,000 cy
REACH LIMIT
STA 86+00
Atlantic Ocean
Key
Sand Fence / Vegetation
MHHW +2.41' NAVD (Oct 2016)
MLLW -3.0' NAVD (Oct 2016)
OCRM Baseline (2009)
OCRM Setback Line (2009)
Proposed Fill Berm Area
Proposed Fill Slope Area
Notes:
Exact fill limits and volumes to be determined at the time of construction.
A small dune may be constructed in areas lacking any dune features at time of construction (see sections).
Note:
OCRM Baseline & Setback Line Adopted 2009
Contours shown based on data collected by
Coastal Science & Engineering, Inc via RTK GPS October 2016.
0
1,000
Scale (Feet)
SOUTH CAROLINA
COASTAL SCIENCE & ENGINEERING No. C01950
CERTIFICATE OF AUTHORIZATION
SOUTH CAROLINA
LICENSED PROFESSIONAL ENGINEER
No. 24737
HAIQING LIU KACZKOWSKI
APPLICANT:
CITY OF ISLE OF PALMS
1207 PALM BOULEVARD
ISLE OF PALMS, SC 29451
AGENT:
COASTAL SCIENCE & ENGINEERING
PO BOX 8056
COLUMBIA, SC 29202
DRAWING TITLE:
REACH 1 PLAN
STA 222+00 to 280+00
SCALE: AS SHOWN
DATE: NOV 2016
TMS#
PROJECT # 2453
SHEET #
06

Station: 246+00



Station: 258+00



APPLICANT:
CITY OF ISLE OF PALMS
PO DRAWER 508
ISLE OF PALMS SC 29451

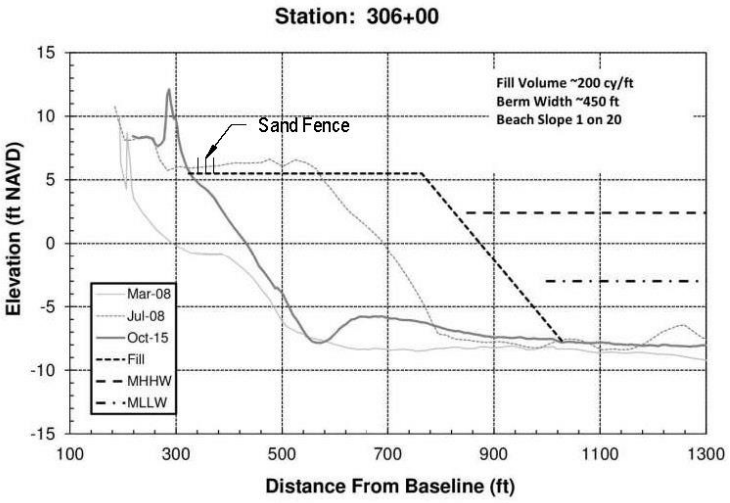
DRAWING TITLE:
FILL SECTIONS
REACH 1

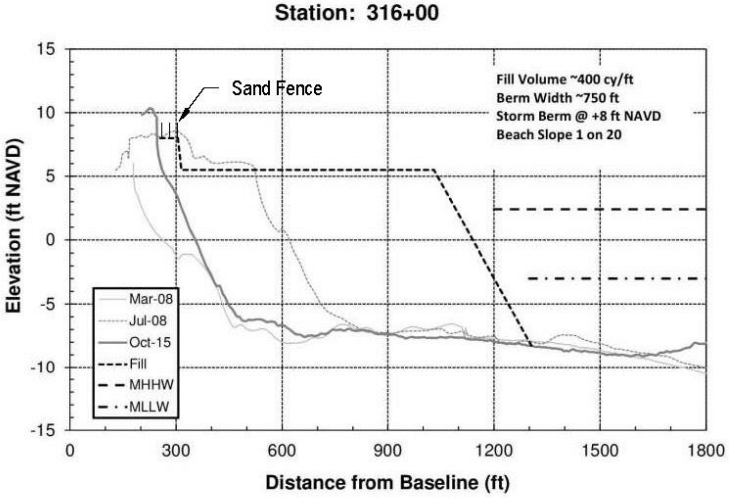
AGENT:
COASTAL SCIENCE & ENGINEERING
PO BOX 8056
COLUMBIA, SC 29202

SCALE: AS SHOWN
DATE: NOV 2016
TMS#
PROJECT # 2453
SHEET #: 07

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION
COASTAL SCIENCE & ENGINEERING
No. C01950

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER
No. 24737
HAIQING LIU KACZKOWSKI





APPLICANT:
CITY OF ISLE OF PALMS
PO DRAWER 508
ISLE OF PALMS SC 29451

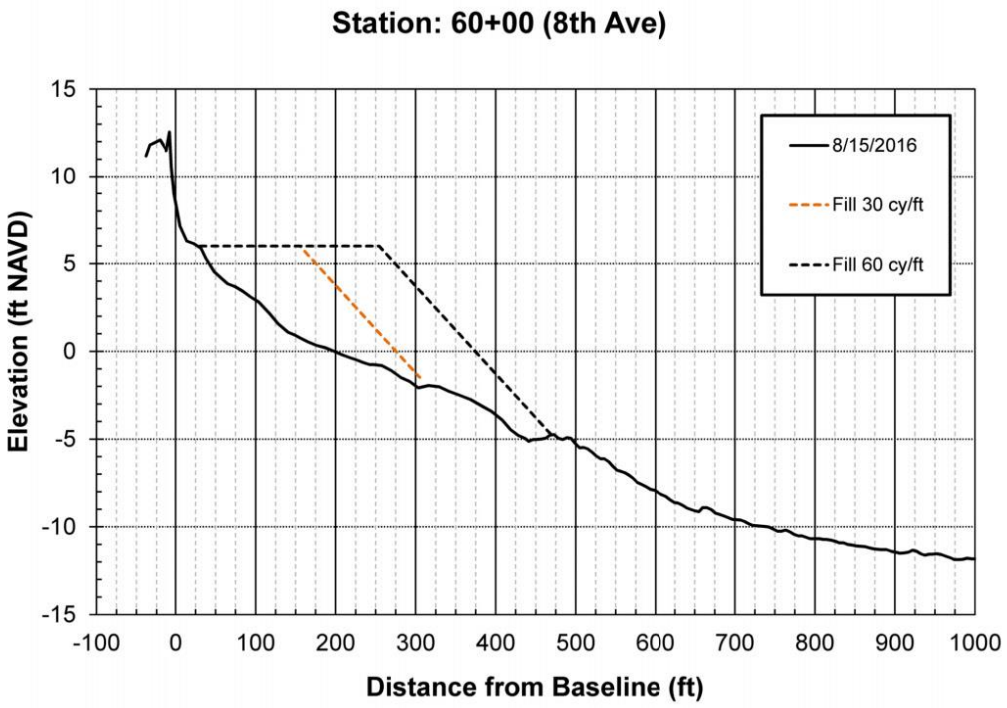
DRAWING TITLE:
FILL SECTIONS
REACH 2

AGENT:
COASTAL SCIENCE & ENGINEERING
PO BOX 8056
COLUMBIA, SC 29202

SCALE: AS SHOWN
DATE: NOV 2016
TMS#
PROJECT # 2453
SHEET #: 08

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION
COASTAL SCIENCE & ENGINEERING
No. C01950

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER
No. 24737
HAIQING LIU KACZKOWSKI



APPLICANT:
CITY OF ISLE OF PALMS
PO DRAWER 508
ISLE OF PALMS SC 29451

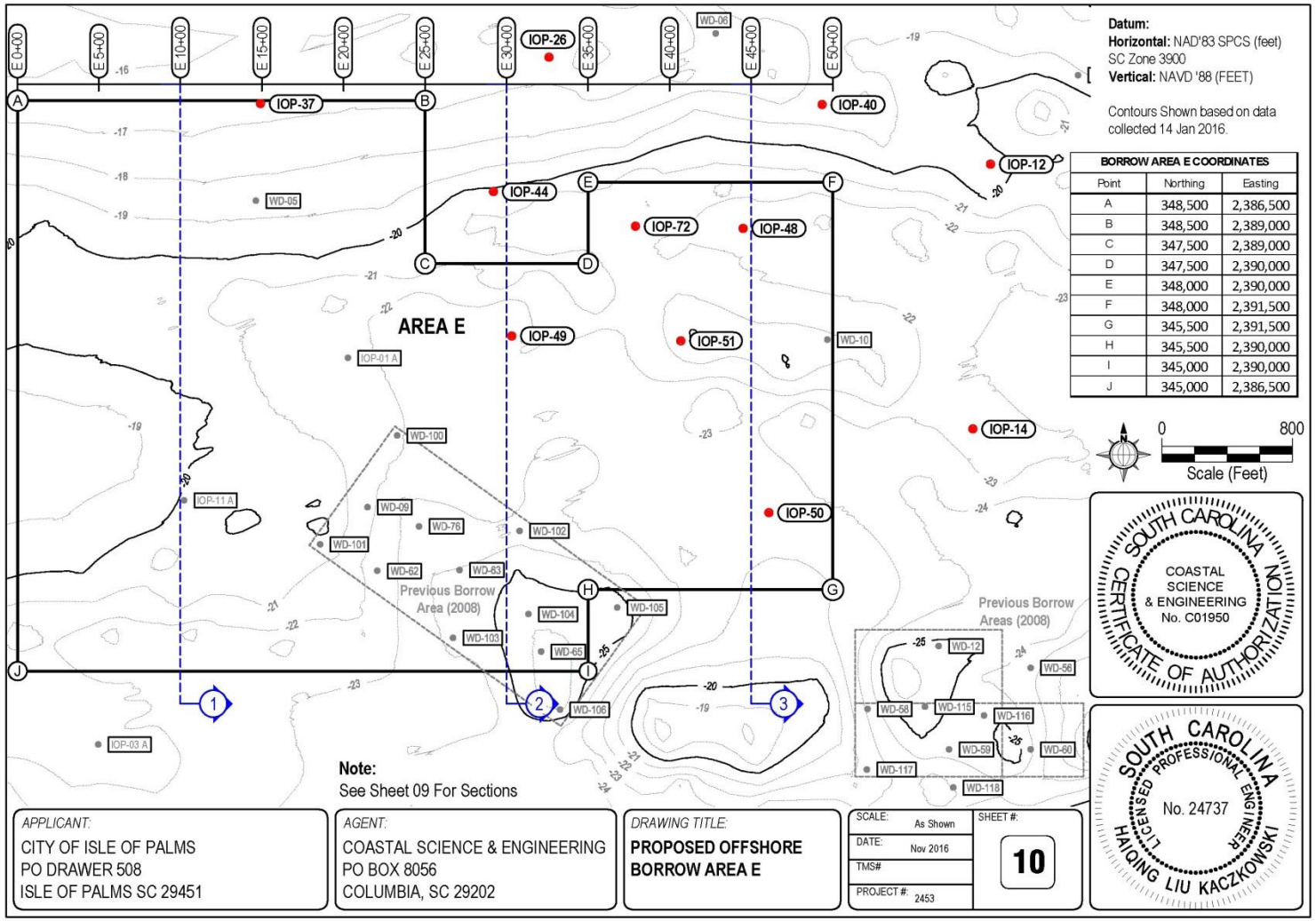
DRAWING TITLE:
FILL SECTION
REACH 3

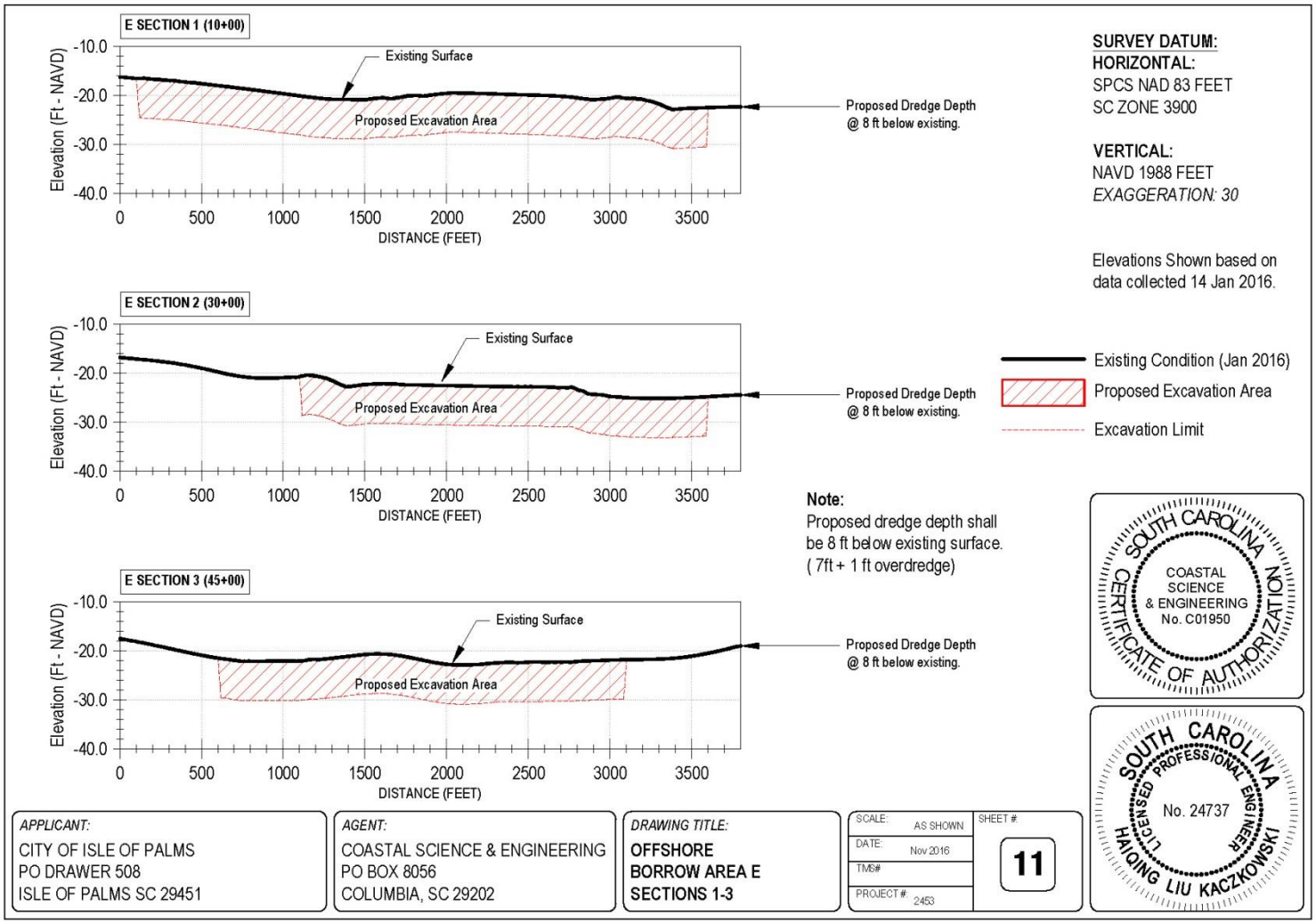
AGENT:
COASTAL SCIENCE & ENGINEERING
PO BOX 8056
COLUMBIA, SC 29202

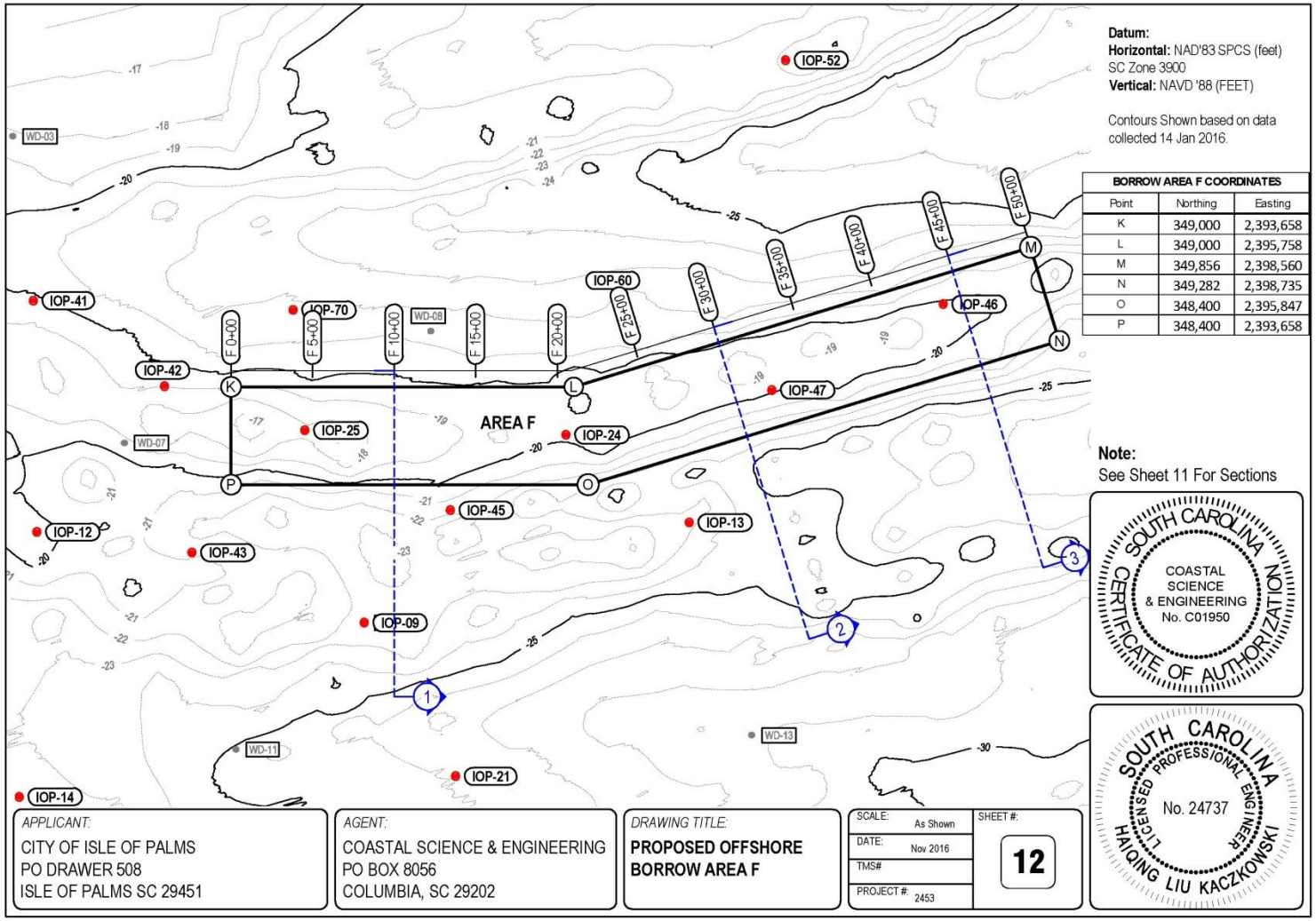
SCALE: AS SHOWN
DATE: NOV 2016
TMS#
PROJECT # 2453
SHEET #: 09

SOUTH CAROLINA
COASTAL SCIENCE & ENGINEERING
No. C01950
CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA
LICENSED PROFESSIONAL ENGINEER
No. 24737
HAIQING LIU KACZKOWSKI


E 0+00
E 5+00
E 10+00
E 15+00
E 20+00
E 25+00
E 30+00
E 35+00
E 40+00
E 45+00
E 50+00
A
B
C
D
E
F
G
H
I
J
1
2
3
IOP-37
IOP-26
IOP-40
IOP-12
IOP-44
IOP-72
IOP-48
IOP-49
IOP-51
IOP-14
IOP-50
AREA E
WD-06
WD-05
WD-10
IOP-01 A
WD-100
IOP-11 A
WD-09
WD-76
WD-102
WD-101
WD-62
WD-63
Previous Borrow Area (2008)
WD-104
WD-105
WD-103
WD-65
WD-106
IOP-03 A
Previous Borrow Areas (2008)
WD-12
WD-56
WD-58
WD-115
WD-116
WD-59
WD-60
WD-117
WD-118
Note:
See Sheet 09 For Sections
Datum:
Horizontal: NAD'83 SPCS (feet)
SC Zone 3900
Vertical: NAVD '88 (FEET)
Contours Shown based on data collected 14 Jan 2016.
BORROW AREA E COORDINATES
Point | Northing | Easting
A | 348,500 | 2,386,500
B | 348,500 | 2,389,000
C | 347,500 | 2,389,000
D | 347,500 | 2,390,000
E | 348,000 | 2,390,000
F | 348,000 | 2,391,500
G | 345,500 | 2,391,500
H | 345,500 | 2,390,000
I | 345,000 | 2,390,000
J | 345,000 | 2,386,500
0
800
Scale (Feet)
SOUTH CAROLINA
COASTAL SCIENCE & ENGINEERING No. C01950
CERTIFICATE OF AUTHORIZATION
SOUTH CAROLINA
LICENSED PROFESSIONAL ENGINEER
No. 24737
HAIQING LIU KACZKOWSKI
APPLICANT:
CITY OF ISLE OF PALMS
PO DRAWER 508
ISLE OF PALMS SC 29451
AGENT:
COASTAL SCIENCE & ENGINEERING
PO BOX 8056
COLUMBIA, SC 29202
DRAWING TITLE:
PROPOSED OFFSHORE BORROW AREA E
SCALE: As Shown
DATE: Nov 2016
TMS#
PROJECT #: 2453
SHEET #:
10


E SECTION 1 (10+00)
Elevation (Ft - NAVD)
-10.0
-20.0
-30.0
-40.0
Existing Surface
Proposed Excavation Area
Proposed Dredge Depth
@ 8 ft below existing.
0
500
1000
1500
2000
2500
3000
3500
DISTANCE (FEET)
E SECTION 2 (30+00)
Elevation (Ft - NAVD)
-10.0
-20.0
-30.0
-40.0
Existing Surface
Proposed Excavation Area
Proposed Dredge Depth
@ 8 ft below existing.
0
500
1000
1500
2000
2500
3000
3500
DISTANCE (FEET)
E SECTION 3 (45+00)
Elevation (Ft - NAVD)
-10.0
-20.0
-30.0
-40.0
Existing Surface
Proposed Excavation Area
Proposed Dredge Depth
@ 8 ft below existing.
0
500
1000
1500
2000
2500
3000
3500
DISTANCE (FEET)
SURVEY DATUM:
HORIZONTAL:
SPCS NAD 83 FEET
SC ZONE 3900
VERTICAL:
NAVD 1988 FEET
EXAGGERATION: 30
Elevations Shown based on
data collected 14 Jan 2016.
Existing Condition (Jan 2016)
Proposed Excavation Area
Excavation Limit
Note:
Proposed dredge depth shall
be 8 ft below existing surface.
(7ft + 1 ft overdredge)
SOUTH CAROLINA
COASTAL
SCIENCE
& ENGINEERING
No. C01950
CERTIFICATE OF AUTHORIZATION
SOUTH CAROLINA
LICENSED PROFESSIONAL ENGINEER
No. 24737
HAIQING LIU KACZKOWSKI
APPLICANT:
CITY OF ISLE OF PALMS
PO DRAWER 508
ISLE OF PALMS SC 29451
AGENT:
COASTAL SCIENCE & ENGINEERING
PO BOX 8056
COLUMBIA, SC 29202
DRAWING TITLE:
OFFSHORE
BORROW AREA E
SECTIONS 1-3
SCALE: AS SHOWN
DATE: Nov 2016
TMS#
PROJECT # 2453
SHEET #
11


IOP-52
WD-03
IOP-41
IOP-70
WD-08
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AREA F
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IOP-24
WD-07
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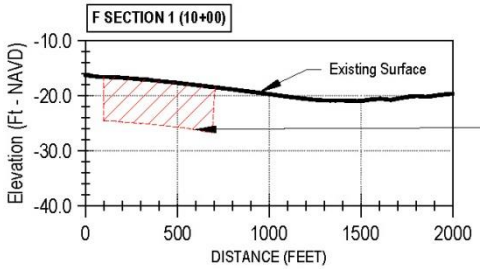
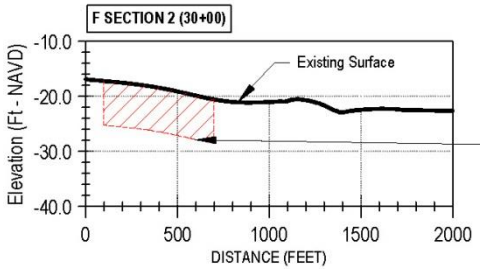
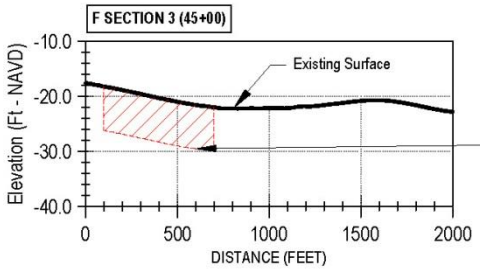
F 40+00
F 45+00
F 50+00
K
L
M
N
O
P
1
2
3
Datum:
Horizontal: NAD'83 SPCS (feet)
SC Zone 3900
Vertical: NAVD '88 (FEET)
Contours Shown based on data collected 14 Jan 2016.
BORROW AREA F COORDINATES
Point | Northing | Easting
K | 349,000 | 2,393,658
L | 349,000 | 2,395,758
M | 349,856 | 2,398,560
N | 349,282 | 2,398,735
O | 348,400 | 2,395,847
P | 348,400 | 2,393,658
Note:
See Sheet 11 For Sections
SOUTH CAROLINA
COASTAL SCIENCE & ENGINEERING
No. C01950
CERTIFICATE OF AUTHORIZATION
SOUTH CAROLINA
LICENSED PROFESSIONAL ENGINEER
No. 24737
HAIQING LIU KACZKOWSKI
APPLICANT:
CITY OF ISLE OF PALMS
PO DRAWER 508
ISLE OF PALMS SC 29451
AGENT:
COASTAL SCIENCE & ENGINEERING
PO BOX 8056
COLUMBIA, SC 29202
DRAWING TITLE:
PROPOSED OFFSHORE
BORROW AREA F
SCALE: As Shown
DATE: Nov 2016
TMS#
PROJECT #: 2453
SHEET #:
12







Existing Condition (Jan 2016)

Proposed Excavation Area

Excavation Limit

Note:
Proposed dredge depth shall be 8 ft below existing surface.
(7ft + 1 ft overdredge)

SURVEY DATUM:
HORIZONTAL:
SPCS NAD 83 FEET
SC ZONE 3900

VERTICAL:
NAVD 1988 FEET
EXAGGERATION: 30

Elevations Shown based on data collected 14 Jan 2016.

SOUTH CAROLINA
COASTAL SCIENCE & ENGINEERING
No. C01950
CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA
LICENSED PROFESSIONAL ENGINEER
No. 24737
HAIQING LIU KACZKOWSKI

APPLICANT: CITY OF ISLE OF PALMS PO DRAWER 508 ISLE OF PALMS SC 29451	*AGENT:* COASTAL SCIENCE & ENGINEERING PO BOX 8056 COLUMBIA, SC 29202	*DRAWING TITLE:* **OFFSHORE BORROW AREA E SECTIONS 1-3**	SCALE: AS SHOWN DATE: Nov 2016 TMS# PROJECT #: 2453	SHEET # **13**

Joint Federal and State Application Form
For Activities Affecting Waters of the United States
Or Critical Areas of the State of South Carolina

This Space for Official Use Only
Application No._____
Date Received_____
Project Manager_____
Watershed #_____

Authorities: 33 USC 401, 33 USC 403, 33 USC 407, 33 USC 408, 33 USC 1341, 33 USC 1344, 33 USC 1413 and Section 48-39-10 et. Seq of the South Carolina Code of Laws. These laws require permits for activities in, or affecting, navigable waters of the United States, the discharge of dredged or fill material into waters of the United States, and the transportation of dredged material for the purpose of dumping it into ocean waters. The Corps of Engineers and the State of South Carolina have established a joint application process for activities requiring both Federal and State review or approval. Under this joint process, you may use this form, together with the required drawings and supporting information, to apply for both the Federal and/or State permit(s).

Drawings and Supplemental Information Requirements: In addition to the information on this form, you must submit a set of drawings and, in some cases, additional information. A completed application form together with all required drawings and supplemental information is required before an application can be considered complete. See the attached instruction sheets for details regarding these requirements. You may attach additional sheets if necessary to provide complete information.

1. Applicant Last Name: Tucker		11. Agent Last Name (agent is not required): Traynum	
2. Applicant First Name: Linda		12. Agent First Name: Steven	
3. Applicant Company Name: City of Isle of Palms		13. Agent Company Name: Coastal Science & Engineering	
4. Applicant Mailing Address: PO Box 508		14. Agent Mailing Address: PO 8056	
5. Applicant City: Isle of Palms		15. Agent City: Columbia	
6. Applicant State: SC	7. Applicant Zip: 29451	16. Agent State: SC	17. Agent Zip: 29202
8. Applicant Area Code and Phone No.: 843-886-6428		18. Agent Area Code and Phone No.: 803-799-8949	
9. Applicant Fax No.: 843-886-8005		19. Agent Fax No.: 803-799-9481	
10. Applicant E-mail: ltucker@iop.net		20. Agent E-mail: straynum@coastalscience.com	
21. Project Name: Isle of Palms Beach Renourishment Project		22. Project Street Address: Palm Blvd, Isle of Palms, SC	
23. Project City: Isle of Palms	24. Project County: Charleston	25. Project Zip Code: 29451	26. Nearest Waterbody: Atlantic Ocean
27. Tax Parcel ID:		28. Property Size (acres): 150 acres	
29. Latitude: 32 48'28"N		30. Longitude: 79 43'53"W	

31. Directions to Project Site (Include Street Numbers, Street Names, and Landmarks and attach additional sheet if necessary):
From Hwy 17, Take 517 towards Isle of Palms. Turn left onto Palm Blvd and continue to the east to 53rd Avenue vehicular beach access.

32. Description of the Overall Project and of Each Activity in or Affecting U.S. Waters or State Critical Areas (attach additional sheets if needed)
See Additional Sheets.

33. Overall Project Purpose and the Basic Purpose of Each Activity In or Affecting U.S. Waters (attach additional sheets if needed):
See Additional Sheets.

34. Type and quantity of Materials to Be Discharged

Dirt or Topsoil:		☐ cubic yards
Clean Sand:	1,940,000	■ cubic yards
Mud:	<60,000	■ cubic yards
Clay:		☐ cubic yards
Gravel, Rock, or Stone:		☐ cubic yards
Concrete:		☐ cubic yards
Other (describe):		☐ cubic yards
TOTAL:	2,000,000	cubic yards

35. Type and Quantity of Impacts to U.S. Waters (including wetlands).

Filling:	95	■ acres ☐ sq.ft.	2,000,000	■	cubic yards
Backfill & Bedding:		☐ acres ☐ sq.ft		☐	cubic yards
Landclearing:		☐ acres ☐ sq.ft		☐	cubic yards
Dredging:	150	■ acres ☐ sq.ft.	2,000,000	■	cubic yards
Flooding:		☐ acres ☐ sq.ft.		☐	cubic yards
Draining/Excavation:		☐ acres ☐ sq.ft.		☐	cubic yards
Shading:		☐ acres ☐ sq.ft.		☐	cubic yards
TOTALS:	175 acres		1,400,000 sq.ft.		cubic yards

36. Individually list wetland impacts including mechanized clearing, fill, excavation, flooding, draining, shading, etc. and attach a site map with location of each impact (attach additional sheets if needed).

Impact No.	Wetland Type	Distance to Receiving Water body (LF)	Purpose of Impact (road crossing, impoundment, flooding, etc)	Impact Size (acres)
1	Subtidal Ocean Bottom	-	Excavation for Borrow Material	150
2	Subtidal Ocean Bottom	-	Beach Nourishment	~45
3	Intertidal Beach	-	Beach Nourishment	~50
			Total Wetland Impacts (acres)	~245

37. Individually list all seasonal and perennial stream impacts and attach a site map with location of each impact (attach additional sheets)

Impact No.	Seasonal or Perennial Flow	Average Stream Width (LF)	Impact Type (road crossing, impoundment, flooding, etc)	Impact Length (LF)
			Total Stream Impacts (Linear Feet)	0

38. Have you commenced work on the project site? ☐ YES ■ NO If yes, describe all work that has occurred and provide dates.

39. Describe measures taken to avoid and minimize impacts to Waters of the United States:

See additional sheets

40. Provide a brief description of the proposed mitigation plan to compensate for impacts to aquatic resources or provide justification as to why mitigation should not be required (Attach a copy of the proposed mitigation plan for review).

See additional sheets

41. See the attached sheet to list the names and addresses of adjacent property owners.

42. List all Corps Permit Authorizations and other Federal , State, or Local Certifications, Approvals, Denials received for work described in this application.

43. Authorization of Agent. I hereby authorize the agent whose name is given on page one of this application to act in my behalf in the processing of this application and to furnish supplemental information in support of this application. [1]

Applicant's Signature — Date: 11/29/2016

44. Certification. Application is hereby made for a permit or permits to authorize the work and uses of the work as described in this application. I certify that the information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent for the applicant. [1]

Applicant's Signature — Date: 11/29/2016 — Agent's Signature — Date

[1]**The application must be signed by the person who desires to undertake the proposed activity or it may be signed by a duly authorized agent if the authorization statement in blocks 11 and 43 have been completed and signed. 18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.**

F. Approved Local Comprehensive Beach Management Plan

1. Analysis of beach erosion control alternatives
2. Upland ownership of property, indicating federal, state, local, or private ownership
3. Public Access Points (previously provided under **B. Project Narrative and Maps** section)
4. Public Parking Areas (previously provided under **B. Project Narrative and Maps** section)
5. Private Parking Areas (previously provided under **B. Project Narrative and Maps** section)
6. Baseline and setback line(s) (previously provided under **B. Project Narrative and Maps** section)

The City's Local Comprehensive Beach Management Plan was first approved by SCDHEC OCRM in 2007. It is posted on the City's website at www.iop.net . The update to the plan, containing changes recommended by OCRM, has been completed and the final document is expected to be approved by the Isle of Palms City Council on February 28, 2017. The plan received no public comments through the comment period of September 27, 2016. OCRM staff had comments to which the City is responded and made changes to accommodate their recommendations the plan.

Copy of the Updated City of Isle of Palms Local Comprehensive Beach Management Plan addressing items 1-6 provided.

April 5, 2016
photos

Local Comprehensive Beach Management Plan

City of Isle of Palms

January 26, 2017

Submitted by:
Christopher P. Jones, P.E.
Durham, NC

TABLE OF CONTENTS

1. Introduction

1.1 Purpose

This document is an update of the 2008 Local Comprehensive Beach Management Plan (LCBMP) of the City of Isle of Palms (IOP). The update is being carried out for two reasons: 1) to compile updated beach management information and 2) to remain eligible for State beach management funding.

The City's LCBMP represents considerable effort, inventory, and deliberation on the part of the City, and establishes a strategy for the management of the Isle of Palms beach for the sustainable enjoyment by residents and visitors. This LCBMP is intended for incorporation into the State Beachfront Management Plan in accordance with the provisions of the State Beachfront Management Act.

1.2 History of Plan Approvals and Revisions

The City initiated drafting its Local Comprehensive Beach Management Plan in 1992. A Plan was submitted to the South Carolina Coastal Council (SCCC) and the City received SCCC comments in March 1994. Subsequent efforts by the City to address the comments were not entirely successful, and the City set aside its work on the LCBMP, concentrating on other matters.

In July 2006, the City reactivated its efforts to create and adopt a LCBMP. The City Council adopted the LCBMP in March 2007 and the Plan was submitted to DHEC OCRM in April 2007. DHEC OCRM provided comments to the City in November 2007, revisions were made to the Plan and the City adopted the revised Plan on February 22, 2008. DHEC OCRM approved the LCBMP on April 7, 2008.

1.3 Overview of Municipality/History of Beach Management Approaches

The City of Isle of Palms was formed on January 12, 1953 (Isle of Palms Planning Commission, 2015). The City has a Council form of government, with a Mayor and eight Council Members. A City Administrator is appointed by and reports to the Council; the Administrator carries out tasks assigned by Council and oversees daily operations of City departments.

The City Council is responsible for adopting ordinances that, when implemented, form the basis for beach management on IOP (See Section 4.2). The City Council is also responsible for the expenditure of City funds toward beach management efforts.

The City's vision for beach management was articulated by the City's Long-Term Beach Management Citizens Advisory Group (Jones, 2008):

- a dry sand beach at all stages of the tide, capable of providing recreational opportunities for residents and visitors, protecting upland development and sustaining our natural resources

- elimination of the chronic and periodic erosion problems that threaten buildings and loggerhead nesting habitat along the shoreline
- minimizing the need for emergency protection of upland structures and development
- avoiding future shoreline development practices which perpetuate or exacerbate problems of the past, where some buildings were sited close to a dynamic inlet shoreline
- cooperation between all City residents to ensure that this vision is implemented and that generations to come can enjoy the beach on Isle of Palms

The City has pursued this vision through a number of actions:

- instituting regulations and policies for planning, zoning, development, environmental protection, and public safety
- developing and maintaining an excellent public beach access system
- prohibiting hard erosion control structures on the beach
- monitoring beach and dune conditions
- acting as permit applicant and providing funds for beach nourishment and shoal management projects

1.4 Current Beach Management Issues

There are three main beach management issues facing IOP at present:

1. Beach and dune erosion, particularly in the unstabilized inlet erosion zone near Dewees Inlet at the eastern end of the island (although there has been some recent erosion in the unstabilized inlet erosion zone near Breach Inlet at the west end of the island).
2. Balancing public beach parking demand with available safe parking capacity on the island.
3. Drainage of low-lying areas, an issue highlighted by tidal and rainfall flooding during October 2015 (Joaquin)

2. Inventory of Existing Conditions

2.1 General Characteristics of the Beach

Isle of Palms is a seven-mile-long barrier island located eight miles east of Charleston on the South Carolina coast (Figure 1). This long and relatively narrow island varies in width from 0.35 mile at the west end to 1.6 miles at the east end, and its slightly curving shoreline has an orientation of southwest to northeast. For descriptive purposes, the end of the island nearest Charleston is referred to as the “west” end, while the opposite end of the island is referred to as the “east” end. The total area of the island is four and one-half square miles.

The island is bounded on the north by Hamlin Creek and the Intracoastal Waterway, on the east by Dewees Inlet and Dewees Island, on the south by the Atlantic Ocean, and on the west by Breach Inlet and Sullivan's Island.

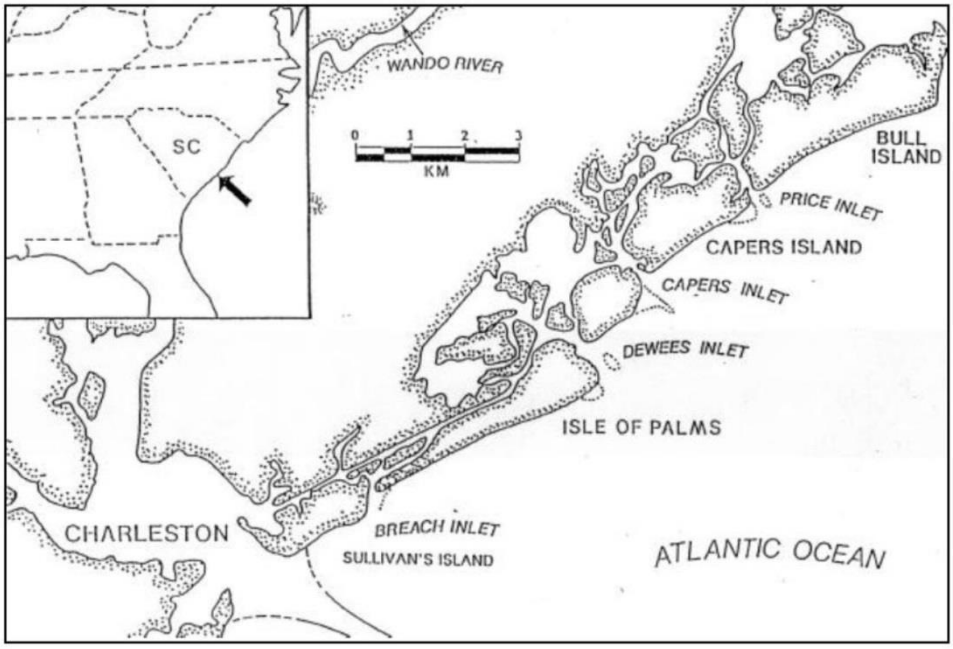


Figure 1. Isle of Palms Location Map.

Isle of Palms has a characteristic "drumstick" shape (Figure 2), with a wider upcoast (east) end due to the influence of Dewees Inlet and to the inlet shoal migration and attachment west of the inlet (Coastal Science & Engineering – CSE, 2015a). Because of this inlet shoal bypass process, however, the shoreline along the east end of Isle of Palms is highly dynamic, with localized advance or retreat by hundreds of feet in short periods of time (Figure 3). Eventually, much of the bypassed sediment travels along Isle of Palms, leading to a persistent, long-term trend of accretion at the west end of the island (Jones, 1986). The west end of the island is also dynamic (but not nearly as dynamic as the east end) as a result of sediment being bypassed from Isle of Palms across Breach Inlet to Sullivan's Island.

Figure 2. Isle of Palms exhibits a "drumstick" shape due to inlet shoal bypassing at Dewees Inlet at the east end of the island, and westerly sediment transport toward Breach Inlet (bottom). Figure from CSE (2015a).

Between 1941 and 1997, inlet shoals bypassed Dewees Inlet and attached to the beach at the east end of Isle of Palms every four to ten years, with an average interval between attachments of ~ 6 years (Guadiano and Kana, 2001). That shoal attachment frequency has continued through 2016. CSE (2015a) estimates that inlet shoal attachments add approximately 100,000 cy/yr of sediment to the island.

Figure 3. February 2007 view northeast toward Dewees Inlet (CSE, 2015a). Migrating inlet shoal leads to a wide beach immediately landward of the migrating shoal, and focused erosion adjacent to the location of shoal attachment.

Beaches are composed of fine-to-medium sand with a small percentage of shell. As a result, beach slopes on Isle of Palms are relatively flat, and the typical beach width (distance between the dune toe and the water line) tends to be ~20-50 feet at high tide and ~200 feet or more at low tide. However, in areas immediately landward of and adjacent to attaching inlet shoals, beach widths vary considerably – high tide beach width can be hundreds of feet in areas immediately landward of attaching inlet shoals, but can disappear entirely in areas adjacent to attaching shoals. Once a shoal attaches the added sediment spreads along the beach and beach widths return to a more normal condition.

Dune fields along the island are well-developed along the western and central portions of the island, ranging from approximately 50 ft to 250 ft wide. Along the eastern end of the island, dune width depends on the recent history of shoal attachments, and ranges from 0 ft to ~ 200 ft. Crest elevations of well-developed dunes reach ~ 12-15 ft NAVD (North American Vertical Datum), while crests of newer dunes may be just a few feet above the beach elevation. The 6 ft NAVD contour tends to define the typical boundary between the dune toe and the back of the beach berm.

Ground elevations on the island range from as high as 17 ft above at some points along a ridge on the ocean side of the island, down to sea level at the margins of the island. However, the topography of most of the island is relatively flat with an average ground elevation of approximately 6-8 ft NAVD.

2.2 General Land Use Patterns

Land use on Isle of Palms is depicted on the City's Current and Future Land Use Map (Figure 4). Land Use on the island is a mix of residential (low, medium, high density), commercial, park/recreation and conservation. The following alongshore lengths of land use occur on Isle of Palms:

- Low-density residential exists along approximately 4.4 miles (63%) of the ocean shoreline: 1.4 miles between Breach Inlet and 10th Ave., 2.7 miles between 21st Ave and 57th Ave, and 0.3 mile along Beachwood East and Dunecrest Lane.
- Medium-density residential exists along approximately 0.1 mile east of IOP County Park.
- High-density residential exists along approximately 1.1 miles (16%) of the ocean shoreline, all in the Wild Dunes Planned Development District: 0.25 miles in the vicinity of Grand Pavilion and Seagrove, and approximately 0.8 mile between the Property Owners Beach House and Ocean Club.
- Commercial exists along approximately 0.3 miles (4%) of the ocean shoreline, between 10th Ave. and 14th Ave.
- Park and recreation exist along approximately 0.6 mile (9%) of the ocean shoreline: ~400 ft at Isle of Palms County Park, and approximately 0.5 mile at the Wild Dunes Links Course.
- Conservation exists along the Dewees Inlet shoreline north of the Links Course.

Approximately 330 oceanfront parcels have been platted for residential or commercial use along the ~ 7-mile ocean shoreline. Approximately 90% of these parcels are single family residential.

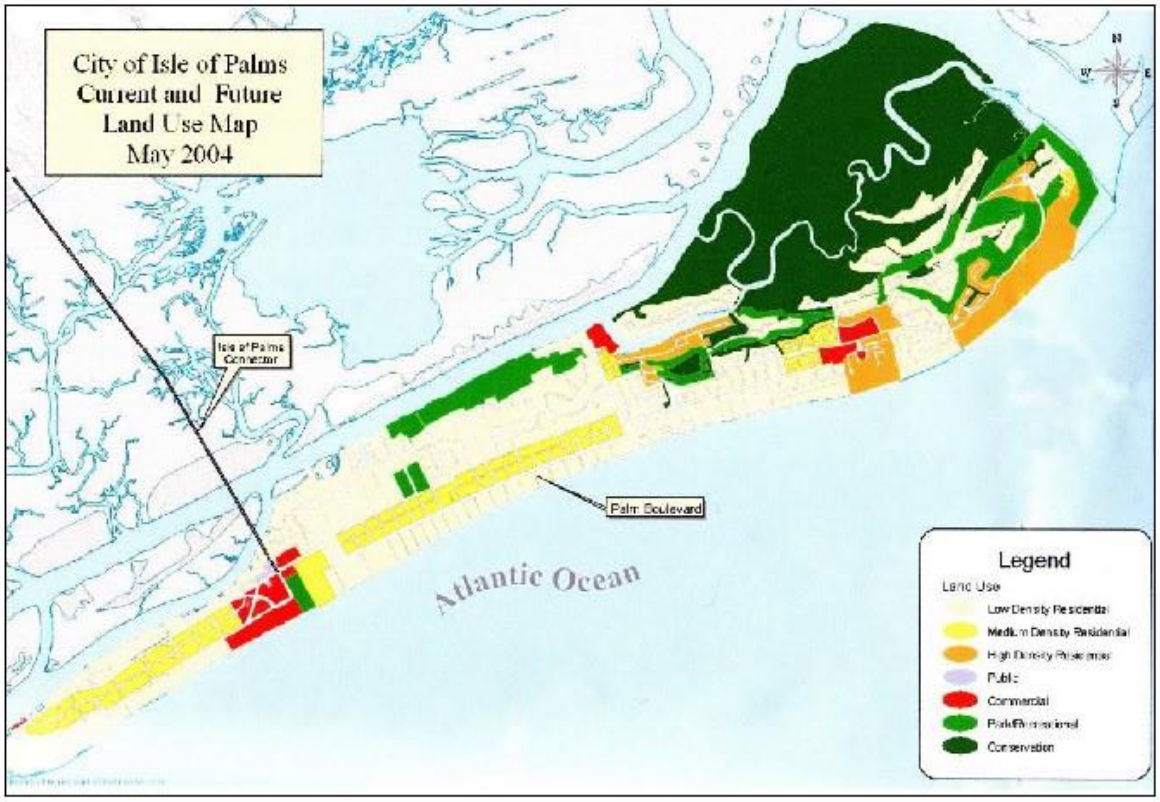


Figure 4. City of Isle of Palms Current and Future Land Use Map.

Unlike many coastal communities, the majority of the oceanfront development on Isle of Palms is set back a reasonable distance from the shoreline, and the area at greatest risk to erosion is along the northeastern third of the island (generally, from 55th Avenue to Dewees Inlet) where inlet shoal attachments occur on a regular basis. Unfortunately, the northeastern end of the island is also the area where the oceanfront development density is greatest, and the buildings are the largest.

In recognition of erosion hazards influenced by land use patterns at the east end of the island, the City has a beach nourishment and focused erosion shoal management strategy, which addresses long-term erosion, storm impacts and episodic erosion due to shoal attachments. The City and the Wild Dunes community cooperate and coordinate on the issue, and Wild Dunes helps fund erosion strategies along the northeast portion of the shoreline.

According to the Comprehensive Plan (Isle of Palms Planning Commission, 2015):

- The 2010 resident population of Isle of Palms was 4,133. The resident population is fairly stable.
- During the summer beach season, the island's population rises to 12,000 people and may increase to as many as 20,000 people during peak weekends such as Memorial Day, Fourth of July and Labor Day.
- There were 4,274 housing units on the island in 2010. Approximately 35% were owner-occupied, approximately 8% were occupied by (long-term) renters, and approximately 57% were seasonal rentals or vacant. Approximately 48% of all housing units are in Wild Dunes.

2.2.1 Beach Use

There are a variety of beach uses on Isle of Palms, including: walking, jogging, shelling, wading, skim boarding, sunbathing, volleyball, bicycling, swimming, fishing, paddle boarding, surfing, kite boarding, kayaking, boating and others.

There are generally no restrictions on which of these permissible uses can be carried out along the beach, except:

- Motorized vehicles, including golf carts, are not permitted on the beach (except for emergency vehicles, trash pick-up, etc.)
- A "swimming zone" has been designated from the Isle of Palms Pier east for 450 ft (incorporating the County Park shoreline), where activities other than swimming, wading and related activities are prohibited.
- Swimming and wading are prohibited along the Breach Inlet shoreline.
- Operation of boats, motorboats and jet skis is prohibited within 100 yard of Police jurisdiction, except in emergencies.
- Parasailing is prohibited within Police jurisdiction.

- Tents, canopies, beach chairs, kites, coolers, beach umbrellas and similar property are allowed on the beach after sunset only so long as such property is being attended to by the user.
- No personal property shall be located within 25 feet of any emergency beach access or any turtle nest.
- Any personal property, except "Hobie Cat" style sailboats which are operable and kept in good working condition or poles supporting volleyball nets adjacent to commercially zoned property, left on the beach after sunset shall be deemed abandoned and subject to disposal by the City.
- Overnight sleeping on the beach is prohibited.
- Glass bottles, fireworks, bonfires and alcoholic beverages are prohibited on the beach.
- Dogs may be on the beach and off leash, from 5:00 AM until 9:00 AM April 1st through September 14th, and 4:00 PM until 10:00 AM September 15th through March 31st. Dog owners must have leash in hand and have their dog under voice command. At all other times, dogs must be on leash and under complete control, even in the water.

2.2.2 Benefits and Value of the Beach

Like most beach communities, Isle of Palms owes its existence mainly to the beach. Golf and boating are also important contributors to the Island's prosperity, but the beach is the main draw. Property values, real estate activity, tourist visitation, commercial activity and City revenues depend directly or indirectly on the presence of a healthy beach. Data from a decade ago showed tourists spent an estimated $130 million annually on Isle of Palms (based on City information and Oh, 2006). This figure has likely increased significantly.

City data from FY 2013 to FY 2015 show the following revenues which are tied to the fact that Isle of Palms is a beachfront community:

- Municipal/County/State Accommodations Tax revenues to the City have averaged approximately $2.8 million annually
- City Hospitality Tax has brought in approximately $0.6 million annually.
- City Residential License fees have brought in approximately $0.5 million annually.
- The City's recently instituted Beach Preservation Fee raised approximately $1 million in its first year.

City data show that approximately half of the revenues described above are associated with rental/vacation properties and tourist activity at Wild Dunes.

2.3 Beachfront Developments and Zoning

City regulations pertaining to Land Use, Zoning and Building are contained in Title 5 (Planning and Development) of the Code of Ordinances,

https://www.municode.com/library/sc/isle_of_palms/codes/code_of_ordinances?nodeId=14483. The newest, adopted ordinances not yet incorporated into the Code are posted on the City web site http://www.iop.net/ordinances.

Zoning was established on October 25, 1956, approximately 3 years after incorporation by the City. The entire zoning code has been repealed and readopted, or amended substantially, in 1975, 1981, 1989 and 1992-1993 (Isle of Palms Planning Commission, 2015). Other amendments to zoning regulations have been ongoing since that time. The latest Zoning Map was adopted in February 2016 (Figure 5). The Planning and Zoning Commission was created on December 10, 1986. The City also adopted an ordinance in 1981 creating a Board of Adjustment, which has since been renamed the Board of Zoning Appeals.

In 1975 City Council approved a Planned Residential Development (PRD) zoning district for the eastern, then undeveloped, end of the island. Today this area includes the gated resort community of Wild Dunes and several adjacent residential areas. The PRD was the first zoning agreement of its type in the State of South Carolina. Under the PRD zoning, the eastern end of the island was developed to include a wide variety of housing types: low to high density single-family detached units, townhouses, and low-rise and high-rise condominium multi-family units. Within the gated section of Wild Dunes many of the approximately 2,067 residential units are used as seasonal rental properties. Wild Dunes also includes offices and conference facilities and other resort amenities. The PRD also includes a few properties on 43rd through 45th Avenues outside the Wild Dunes gates.

In the PRD zoning district, the use, subdivision, and development of property is governed through deed restrictions enforced by the Wild Dunes Community Association. The City has implemented zoning control in Wild Dunes only on a few matters not specifically described in the PRD documents (e.g., tree cutting, conservation overlay, marsh setback). Development within Wild Dunes is also subject to OCRM requirements.

In 2000 the name of the zoning district for planned developments changed from Planned Residential District (PRD) to Planned Development District (PDD). The new designation more accurately describes the land use activities.

Figure 5 shows that the approximate 7-mile length of ocean and inlet shoreline can be broken down as follows:

- Single family residential: 4.2 miles in SR-1, SR-2, SR-3 districts (between Breach Inlet and 10th Ave., and between Isle of Palms County Park and 57th Ave.)
- General Commercial: 0.4 mile in GC-2 and GC-2 district (between 10th Ave. and 14th Ave., and Isle of Palms County Park)
- Wild Dunes PDD: 3.4 miles, with a mixture of low- and high-density residential and the Links Course

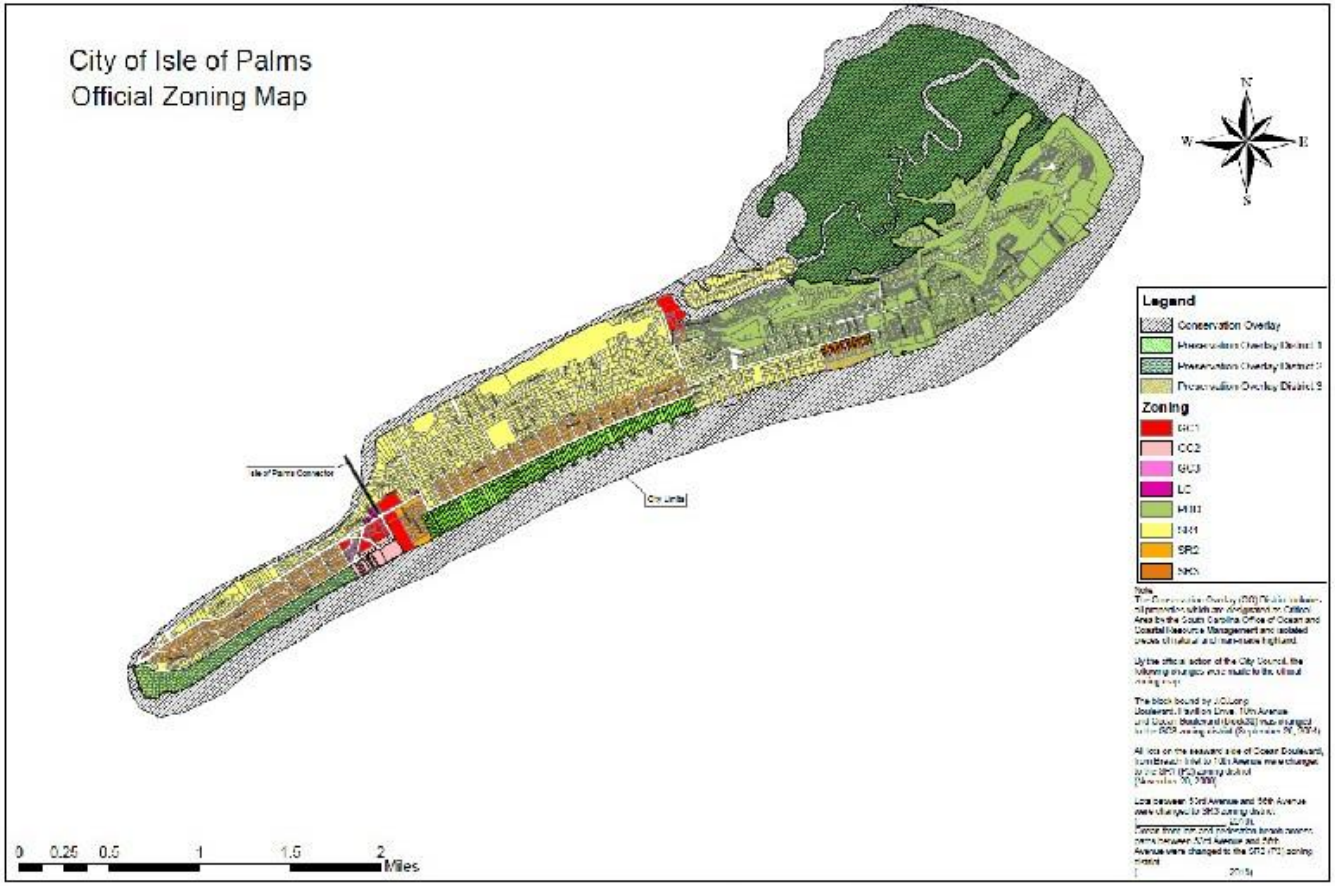


Figure 5. February 2016 Isle of Palms Zoning Map.

Since 1989, a Conservation District Overlay Zone has been established along the entire ocean, inlet and marsh shorelines. Permitted activities are limited to recreation, public utility lines, beach nourishment and special activities and franchises approved by the City.

Preservation Overlay Zones have been established landward of the Conservation District along 3.3 miles of ocean shoreline. The zones were established to preserve natural barriers against forces from the ocean, to preserve adequate light, air and open space, and to preserve scenic, historic and ecologically sensitive areas.

- In 1990 the City established a Preservation Overlay Zone (P-1) between 21st Ave. and 41st Ave.
    - The seaward limit of construction (structures and their stairs) is 130 ft seaward of the Palm Blvd. right of way (on-site waste disposal systems may extend beyond 130 ft).
    - Other activities permitted seaward of the construction limit include one dune walkover per lot, as permitted by the City Code and DHEC OCRM regulations; one open air gazebo per lot, as permitted by the City Code and DHEC OCRM regulations, not to exceed 100 square feet in floor area or 16 feet in height.
- In 2006, a second Preservation Overlay Zone (P-2) was established between Breach Inlet and 10th Ave.
    - The seaward limit of construction is given by the "Maximum Building Line" shown on the January 8, 1988 final plat by E.M. Seabrook, and generally lies 150 ft to 250 ft seaward of Ocean Blvd., putting the limit landward of the DHEC OCRM Setback line in all but a few instances.
    - Other activities permitted seaward of the construction limit include one dune walkover per lot, as permitted by the City Code and DHEC OCRM regulations; one swimming pool per lot, as permitted by the City Code and DHEC OCRM regulations.
- In 2016, a third Preservation Overlay Zone (P-3) was established between 53rd Ave. and 56th Ave when the area was rezoned from PDD to SR-3.
    - The seaward limit of construction is 110 ft from 54th, 55th and 56th Ave. rights of way (see City Ordinance 2015-15). The construction limit is landward of the DHEC OCRM Setback Line along 54th Ave., but seaward along 55th and 56th Ave.
    - Other activities permitted seaward of the construction limit include one dune walkover per lot, as permitted by the City Code and DHEC OCRM regulations; one swimming pool per lot, as permitted by the City Code and DHEC OCRM regulations.

2.3.1 Beachfront Structural Inventory

Section 7 (Appendix) of this LCBMP provides maps and inventories of beach accesses and structures extending seaward of the DHEC OCRM 40-yr Setback Line. The information contained therein is summarized below.

A review of 2015 aerial photography and limited 2016 field inspections showed the following structures[1] extend seaward of the 2009 DHEC OCRM 40-year setback line (the vast majority of these encroachments are at the east end of the island, between 55th Ave and Dewees Inlet):

- ~71 detached single family buildings
- ~16 multifamily buildings that include a total of 222 residential units
- ~20 wooden decks attached to buildings
- ~12 swimming pools and/or pool decks
- 3 other structures (gazebo, pool equipment building)
- 1 private pier
- 2 golf course holes
- rock revetments (exposed and buried)

Of these, the following[2] extend seaward of the 2009 DHEC OCRM baseline:

- ~55 detached single family buildings
- ~14 multifamily buildings that include a total of 222 residential units
- ~7 wooden decks attached to buildings
- ~7 swimming pools and/or pool decks
- 3 other structures (gazebo, pool equipment building)
- 1 private pier
- 2 golf course holes
- rock revetments (exposed and buried)

Construction of additional buildings along the Isle of Palms shoreline is unlikely, given the fact that the ocean shoreline of Isle of Palms is essentially built-out. However, an increasingly common occurrence on Isle of Palms is the teardown of existing homes and construction of new homes on those properties. New homes tend to be larger than the pre-existing homes, but must comply with all City and State requirements and regulations. It is highly unlikely that additional buildings will be constructed seaward of the DHEC OCRM setback line.

[1] Note: some counts are approximate. Accurate determinations at some locations will require field surveys.
[2] Note: some counts are approximate. Accurate determinations at some locations will require field surveys.

2.4. Natural Resource and Ecological Habitats

Isle of Palms, like most South Carolina barrier islands, is characterized by a beach and dune ridge system, with an extensive tidal marsh along the northern side of the island. The island is surrounded by navigable waters. Prior to development, the island was covered by maritime forest.

Three terrestrial habitats are found around the Isle of Palms' beachfront, namely the beach community, maritime shrub thickets, and maritime forest.

- The beach community generally includes the open beach and dune habitats, as well as the foreshore zone that is frequently inundated by the tides.
- Maritime shrub thicket communities commonly grow in older dunes, behind the primary dunes, and include salt tolerant shrubs such as wax myrtle, yaupon holly, and red cedar.
- Maritime forests are upland communities typified by live oak, cabbage palmetto, and loblolly pine, and remnant patches of this habitat are scattered throughout the island. Each ecological community provides benefits to plants and animals that use the habitat to forage, as shelter, for nesting, or for a combination of these uses.

The importance of barrier islands like Isle of Palms as habitat for plants and animals is significant. Many animals are dependent on smaller prey available on open beach habitats as part of complex food webs. Some animals also require the sands of primary dunes on barrier islands for nesting sites and are unable to successfully reproduce without access to this habitat. In the water, nearshore subtidal bars and sand flats can support large numbers and species of marine invertebrates and fish that cannot thrive in the open ocean. Long-term or permanent alteration to these habitats can affect the type, health, and vitality of the flora and fauna.

Natural habitats and resources are also recognized for the social and economic benefits that they provide. Protection of natural resources is identified in the City's Comprehensive Plan as essential to maintaining the high quality of life on the Isle of Palms. Residents indicate that the attributes of coastal ecosystems, including marshes, mature trees, marine waters, and sandy beaches influenced their decision to purchase property on Isle of Palms. In addition, the accessible ocean beach is a predominant factor in the local tourism and vacation rental economy. Eco-tourism has also increased in recent years as an economic market around Charleston and on Isle of Palms.

2.4.1 Threatened and Endangered Species

South Carolina Department of Natural Resources (SCDNR) does not maintain island-specific listings of rare, threatened or endangered species for Isle of Palms. A list does exist for Charleston County (http://www.dnr.sc.gov/species/pdf/Charleston2014.pdf), but not for the island. The Charleston County List is shown in Table 1.

Table 1. SCDNR List of Rate, Threatened and Endangers Species and Communities Known to Occur in Charleston County (6/11/2014).

Scientific Name	Common Name	USESA Designation	State Protection	Global Rank	State Rank
Vertebrate Animals					
Accipiter cooperii	Cooper's Hawk			G5	S3?
Acipenser brevirostrum	Shortnose Sturgeon	LE: Endangered	SE: Endangered	G3	S3
Acris crepitans	Northern Cricket Frog			G5	S5
Aimophila aestivalis	Bachman's Sparrow			G3	S3
Ambystoma cingulatum	Flatwoods Salamander	LT: Threatened	SE: Endangered	G2	S1
Ambystoma tigrinum tigrinum	Eastern Tiger Salamander			G5	S2S3
Caretta caretta	Loggerhead	LT: Threatened	ST: Threatened	G3	S3
Charadrius wilsonia	Wilson's Plover		ST: Threatened	G5	S3?
Clemmys guttata	Spotted Turtle		ST: Threatened	G5	S5
Condylura cristata	Star-nosed Mole			G5	S3?
Corynorhinus rafinesquii	Rafinesque's Big-eared Bat		SE: Endangered	G3G4	S2?
Crotalus horridus	Timber Rattlesnake			G4	SNR
Dendroica virens	Black-throated Green Warbler			G5	S1
Elanoides forficatus	American Swallow-tailed Kite	SC: Sp. of Concern	SE: Endangered	G5	S2
Haliaeetus leucocephalus	Bald Eagle		ST: Threatened	G5	S2
Heterodon simus	Southern Hognose Snake			G2	SNR
Ictinia mississippiensis	Mississippi Kite			G5	S1
Lasiurus cinereus	Hoary Bat			G5	SNR
Limnothlypis swainsonii	Swainson's Warbler			G4	S4
Melanerpes erythrocephalus	Red-headed Woodpecker			G5	SNR
Microtus pennsylvanicus	Meadow Vole			G5	SNR
Micrurus fulvius	Eastern Coral Snake			G5	S2
Mycteria americana	Wood Stork	LE: Endangered	SE: Endangered	G4	S1S2
Myotis austroriparius	Southeastern Bat			G3G4	S1
Neotoma floridana	Eastern Woodrat			G5	S3S4
Neotoma floridana floridana	Eastern Woodrat			G5T5	S3S4
Ophisaurus compressus	Island Glass Lizard			G3G4	S1S2
Pelecanus occidentalis	Brown Pelican			G4	S1S2
Phoca vitulina	Harbor Seal			G5	SNA
Picoides borealis	Red-cockaded Woodpecker	LE: Endangered	SE: Endangered	G3	S2
Plegadis falcinellus	Glossy Ibis			G5	SHB,SNRN
Pseudobranchus striatus	Dwarf Siren		ST: Threatened	G5	S2

Table 1 (continued).

Scientific Name	Common Name	USESA Designation	State Protection	Global Rank	State Rank
Rana capito	Gopher Frog		SE: Endangered	G3	S1
Sciurus niger	Eastern Fox Squirrel			G5	S4
Seminatrix pygaea	Black Swamp Snake			G5	SNR
Sterna antillarum	Least Tern		ST: Threatened	G4	S3
Tyto alba	Barn owl			G5	S4
Ursus americanus	Black Bear			G5	S3?
Vermivora bachmanii	Bachman's Warbler	LE: Endangered	SE: Endangered	GH	SX
Animal Assemblage					
Waterbird Colony				GNR	SNR
Vascular Plants					
Agalinis linifolia	Flax Leaf False-foxglove			G4?	SNR
Agrimonia incisa	Incised Groovebur			G3	S2
Amaranthus pumilus	Seabeach Amaranth	LT: Threatened		G2	S1
Amphicarpum muehlenbergianum	Blue Maiden-cane			G4	S2S3
Anthaenantia rufa	Purple Silkyscale			G5	S2
Asclepias pedicellata	Savannah Milkweed			G4	S2
Botrychium lunarioides	Winter Grape-fern			G4?	S1
Calopogon barbatus	Bearded Grass-pink			G4?	S2
Carex flaccida	Bandana of the everglades			G4?	S?
Carex decomposita	Cypress knee Sedge			G3G4	S?
Carex elliottii	Elliott's Sedge			G4?	S1
Chasmanthium nitidum	Shiny Spikegrass			G3G4	S1
Coreopsis gladiata	Southeastern Tickseed			G4G5	SNR
Coreopsis integrifolia	Ciliate-leaf Tickseed			G1G2	S1
Cornus racemosa	Stiff Dogwood			G5?	S1?
Cyperus tetragonus	Piedmont Flatsedge			G1?	S2
Dionaea muscipula	Venus' Fly-trap			G3	S3
Eleocharis tricostata	Three-angle Spikerush			G4	S2?
Eleocharis vivipara	Viviparous Spike-rush			G5	S1
Eryngium aquaticum var. ravenelii	Ravenel's Eryngo			G4T2T3	S1
Eupatorium anomalum	Florida Thorough-wort			G2G3	S1?
Eupatorium fistulosum	Hollow Joe-pye Weed			G5?	SNR
Forestiera godfreyi	Godfrey's Privet			G2	S1
Galactia elliottii	Elliott's Milkpea			G5	S1
Helenium pinnatifidum	Southeastern Sneezeweed			G4	S2
Hypericum nitidum	Carolina St. John's-wort			G4	S1

Table 1 (continued).

Scientific Name	Common Name	USFSA Designation	State Protection	Global Rank	State Rank
Ipomoea macrorhiza	Large-stem Morning-glory			G3G5	S1
Ipomoea stolonifera	Beach Morning-glory			G5?	SNR
Iris hexagona	Walter's Iris			G4G5	S1
Lepuropetalon spathulatum	Southern Lepuropetalon			G4G5	S2
Lilaeopsis carolinensis	Carolina Lilaeopsis			G3G5	S2
Listera australis	Southern Twayblade			G4	S2
Litsea aestivalis	Pondspice			G3?	S3
Lobelia boykinii	Boykin's Lobelia			G2G3	S3
Ludwigia lanceolata	Lance-leaf Seedbox			G3	S1
Lysimachia hybrida	Lance-leaf Loosestrife			G5	S1
Monotropsis odorata	Sweet Pinesap			G3	S2
Muhlenbergia filipes	Dentgrass			G3?Q	S3S4
Orobanche uniflora	One-flowered Broomrape			G5	S2
Oxypolis canbyi	Canby's Dropwort	LE: Endangered		G2	S2
Paspalum bifidum	Bead grass			G5	S2
Peltandra sagittifolia	Spoon flower			G3G4	S2
Physostegia leptophylla	Slender-leaved Dragon-head			G4?	SNR
Pieris phillyreifolia	Climbing Fetter-bush			G3	S1
Plantago sparsiflora	Pineland Plantain			G3	S2
Platanthera integra	Yellow Fringeless Orchid			G3G4	S1
Psilotum nudum	Whisk Fern			G5	S1
Pteroglossaspis ecristata	Crestless Plume Orchid			G2G3	S2
Quercus austrina	Bluff Oak			G4?	S1
Rhexia aristosa	Awned Meadowbeauty			G3G4	S3
Rhynchospora breviseta	Short-bristle Baldrush			G3G4	S1
Rhynchospora careyana	Horned Beakrush			G4?Q	S3
Rhynchospora globularis var. *pinetorum*	Beakrush			G5T3?	S1
Rhynchospora harperi	Harper Beakrush			G4?	S1
Rhynchospora inundata	Drowned Horned-rush			G4?	S2?
Rhynchospora tracyi	Tracy Beakrush			G4	S3
Sageretia minutiflora	Tiny-leaved Buckthorn			G4	S3
Sarracenia rubra	Sweet Pitcher-plant			G4	S3S4
Schwalbea americana	Chaffseed	LE: Endangered		G2G3	S2
Scleria baldwinii	Baldwin Nutrush			G4	S2
Spiranthes laciniata	Lace-lip Ladies'-tresses			G4G5	S1S2

Table 1 (continued).

Scientific Name	Common Name	USESA Designation	State Protection	Global Rank	State Rank
Tridens carolinianus	Carolina Fluff Grass			G3G4	S1
Tridens chapmanii	Chapman's Redtop			G3	S1
Triphora trianthophora	Nodding Pogonia			G3G4	S2
Xyris brevifolia	Short-leaved Yellow-eyed Grass			G4G5	S1
Xyris difformis var. *floridana*	Florida Yellow-eyed Grass			G5T4T5	S2
Xyris elliottii	Elliott Yellow-eyed Grass			G4	S2
Xyris stricta	Pineland Yellow-eyed Grass			G4	S1
Communities.					
Atlantic coastal plain depression meadow	Depression Meadow			G5	SNR
Bald cypress - tupelo gum swamp				G5	S4
Bald cypress - water tupelo swamp	Bald Cypress - Tupelo Gum Swamp			G5	SNR
Bottomland hardwoods.				G5	S4
Depression meadow				G3	S2
Estuarine intertidal mud flat	Intertidal Mud/Sand Flat			G5	SNR
High pocosin	Pocosin			G3G4	SNR
Interior freshwater marsh				G3	SNR
Juniperus virginiana var. *silicicola* - *zanthoxylum clava-herculis* - *quercus virginiana* - [*sabal palmetto*] / *sageretia minutiflora* (*sideroxylon lycioides*) woodland	South Atlantic Coastal Shell Midden Woodland			G2?	SNR
Longleaf pine flatwoods.				GNR	SNR
Maritime forest				G2	S2
Maritime shrub thicket				G4	S2S3
Mesic mixed hardwood forest				G5	S4
Middens				GNR	S3
Non-alluvial swamp forest				G5	S4S5
Pine - scrub oak sandhill				G4	S4
Pine flatwoods				G5	S3S4
Pocosin				G3G4	S3S4
Pond cypress pond				G4	S4
Pond cypress savanna				G3	S2

Table 1 (continued).

Scientific Name	Common Name	USCSA Designation	State Protection	Global Rank	State Rank
Salt marsh				G5	S5
Salt shrub thicket (allard)	Salt Shrub Thicket			G5	SNR
South atlantic inland maritime forest	Maritime Forest			G2	SNR
Spruce pine - mixed hardwood forest				G3	S2
Spruce pine / mixed hardwood				GNR	SNR
Swamp tupelo pond				G3	S3
Tidal freshwater marsh				G3	S3
Geological					
Carolina bay				GNR	SNR

Limited island-specific information exists in the 2015 Isle of Palms Comprehensive Plan:

- Seven species of birds are listed on the federal endangered or threatened list which may be found in the area. The endangered species are the bald eagle, Bachman's warbler, wood stork and red-cockaded woodpecker. Threatened birds are the piping plover, peregrine falcon and red knot.
- No federally listed endangered or threatened plants are known to be located on the island. The primary tree species on the island are palmetto, live oak, loblolly pine, wax myrtle, and crepe myrtle. In 1989 the City adopted its first tree ordinance to prevent parcels from being completely cleared during development. In 2002, the ordinance was amended to include further protection for all live oak trees and other trees in excess of eight inches in diameter.
- The loggerhead sea turtle, a threatened species, visits the island to lay eggs along the beach. South Carolina beaches have the largest number of nest sites in the "population" tracked between North Carolina and Northern Florida.

2.4.2 Turtle Nesting

Since 2000 the annual number of loggerhead sea turtle nests along Isle of Palms has fluctuated between approximately 10 and 60. It is thought that individual turtles may return to historical/ regional nesting sites every two to five years, accounting for the wide fluctuation in the number of nests from year to year. Enforcement of the island's lighting ordinance, which prohibits lighting directed at the beach, as well as other City ordinances (e.g., requiring the removal of overnight beach furniture, filling in holes in the sand, properly disposing of all trash and garbage, and the banning of single-use plastic bags at retail checkout) are thought to reduce interference and entanglement of sea turtles and to contribute to survival of this threatened species.

Green, Leatherback and Kemp's ridley turtles can nest on South Carolina beaches, but nesting on Isle of Palms is rare. The last Green turtle nest on Isle of Palms was in 1998; there has been one Kemp's ridley nest since 1980. According to the SCDNR Marine Turtle Conservation Program, the Hawksbill turtle does not nest in South Carolina.

The City of Isle of Palms participates in the Island Turtle Team, a group of volunteers that monitors the critical habitat and nesting of loggerhead turtles on Isle of Palms and Sullivan's Island, and posts current nesting information on their web site http://www.iop.net/turtle-team. Team members identify nest locations, mark and safeguard the nests, and relocate nests where required. Isle of Palms is also frequently used for a release point for sea turtles rehabilitated by the SC Aquarium Sea Turtle Hospital.

Turtle nesting statistics for 2009 through 2016 are shown in Table 2 http://www.seaturtle.org/nestdb/index.shtml?year=2016&view_beach=49.

Table 2: 2009 - 2016 Marine Sea Turtle Nesting Data for Isle of Palms. Source: Island Turtle Team, SCDNR Marine Sea Turtle Conservation Program and Seaturtle.org.

	2009	2010	2011	2012	2013	2014	2015	2016
Number of Nests	19	23	42	62	34	11	31	27
False Crawls	12	18	17	24	26	6	15	25
Nests Relocated	13	16	24	46	26	8	22	23
Nest Success*	19	19	31	58	32	11	31	26
Eggs	2,396	2,380	4,226	6,426	3,866	1,397	3,640	3,151
Hatched Eggs	2,094	1,923	2,628	5,088	3,130	1,199	3,225	2,524
Emerged Hatchlings	1,898	1,761	2,424	4,830	2,723	1,101	3,095	2,293
Emergence Success**	79%	76%	57%	74%	71%	80%	85%	73%

* number of nests with at least 10% hatch success

** (number of hatchlings that emerge from nests/number of eggs laid) x 100

The eastern section of the island -- which is most subject to erosion -- typically accounts for approximately 1/4th of marine turtle nesting on the island (2006 personal communication, SCDNR Marine Turtle Conservation Program).

2.5 Existing Public Access and Map

Public beach access along Isle of Palms is excellent. There are 56 public access points along approximately 4.5 miles of shoreline between Breach Inlet and 57th Ave (average spacing between public access points is approximately 400 ft). The three easternmost of the 56 access points (between 54th Ave. and 57th Ave.) are actually owned and maintained by the Wild Dunes Community Association, but have no use restrictions and are available to the general public as well.

East of 57th Ave., beach access is available via 14 community access points for residents and guests of Wild Dunes (average spacing between community access points is approximately 875 ft, or 1/6 mi).

Public beach access and parking information is posted on the City's web site http://www.iop.net/beach-access-parking, and is tabulated in this LCBMP (this section and Appendix). Public beach access locations also are shown on the SC Beach Guide http://gis.dhec.sc.gov/beachaccess/ and Figure 6, taken from the SC Beach Guide.

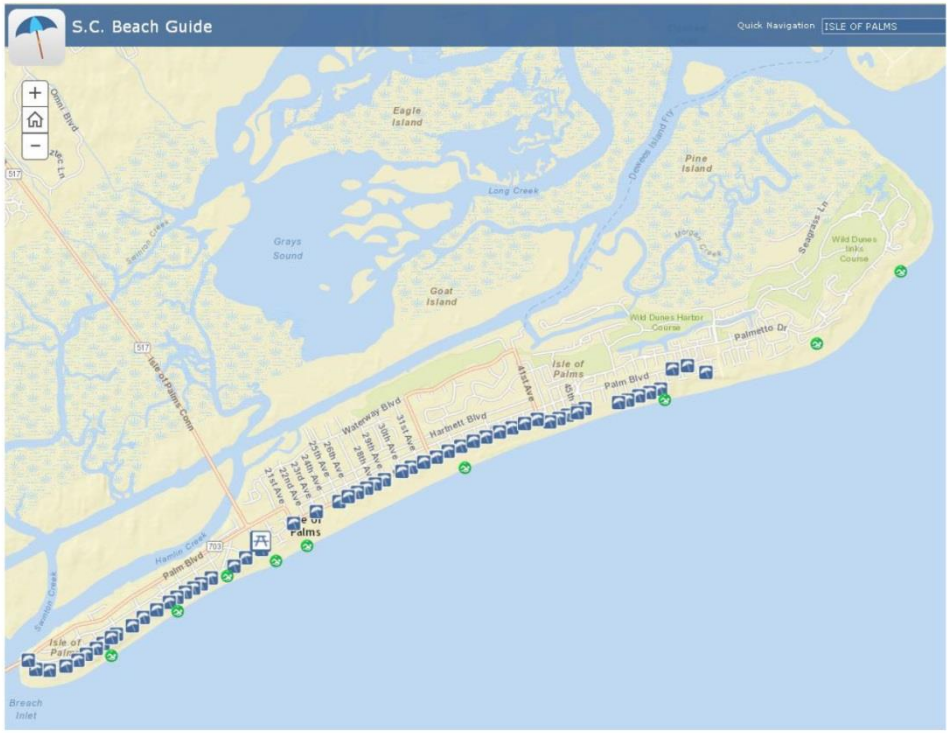


Figure 6. Public beach access points (umbrella and picnic table symbols). From SC Beach Guide http://gis.dhec.sc.gov/beachaccess/

Isle of Palms public access points are identified by numbered signs (landward and seaward ends) and marked with 'Beach Access' signs. The access points also have beach regulation signs, and trash and recycling receptacles, and many have dog waste collection and disposal containers. The City maintains the access paths and signs, and replaces lost or damaged signs.

Public access paths are shown on plats of the island, and the City will not permit any development or encroachments on the paths, since this would reduce or eliminate public beach access. The City routinely inspects public access paths and notifies adjacent property owners if their vegetation or property uses encroach into the public access paths, and the City requires those owners to correct the situation.

Public restrooms are available at the public beach access between 1116 and 1122 Ocean Boulevard, and at the Isle of Palms County Park.

Beach access for emergency vehicles is available at 5th Ave., 14th Ave., 25th Ave., 42nd Ave., 53rd Ave. and at the Property Owners Beach House (Wild Dunes).

Public parking is available within 500 ft of the landward terminations of beach access paths between Breach Inlet and 57th Avenue (some distances to beach parking exceed 500 ft due to the distance between the rear of the dune and Palm Blvd. between 41st Ave. and 57th Ave. (DHEC OCRM staff indicated in April 2015 that this was acceptable). Parking spaces are in the form of either paved parking spaces or lots, unpaved spaces (gravel or grass surface lots), and parking along public road rights-of-way ("on-street" parking) on the Isle of Palms.

Four public parking lots are available to beachgoers:

- 10-space paved lot (free) near Breach Inlet
- two gravel parking lots (pay) on Pavilion Blvd. with a total of +/- 422 spaces
- paved/grass parking lot (pay) with +/- 441 spaces at Isle of Palms County Park

In addition, approximately 141 spaces (pay) are situated in the commercial district along Ocean Blvd. between 10th Ave. and 14th Ave. The pay parking areas are shown in Figure 7.

Figure 7. Pay parking areas between 10th Ave. and Isle of Palms County Park
http://www.iop.net/beach-access-parking

In 2015 the City completed deliberation and multi-year analysis of parking supply and demand on the island, incorporating input from residents, businesses, SCDOT and other stakeholders. The result is implementation of a Managed Beach Parking Plan (Parking Concept C) for the 2016

summer beach season (the City is currently reviewing the Managed Parking Plan for possible changes for the 2017 season). The Plan establishes resident parking districts and beach (public) parking districts to improve public safety and to better control on-street (rights-of-way) parking on the Isle of Palms. The beach parking districts (see Figure 8) are listed in Ordinance 2015-13 http://www.iop.net/Data/Sites/1/media/ordinances/ordinance_2015.13_sign_plan.pdf, adopted by the City Council on November 17, 2015 and include:

- 3rd Ave. between Ocean Blvd. and Charleston Blvd.
- 4th Ave. between Ocean Blvd. and Charleston Blvd.
- 5th Ave. between Ocean Blvd. and Carolina Blvd.
- 6th Ave. between Ocean Blvd. and Carolina Blvd.
- 7th Ave. between Ocean Blvd. and Carolina Blvd.
- East side of 8th Ave. between Ocean Blvd. and Carolina Blvd.
- East side of 9th Ave. between Ocean Blvd. and Carolina Blvd.
- Palm Blvd., between 21st Ave. and 57th Ave.

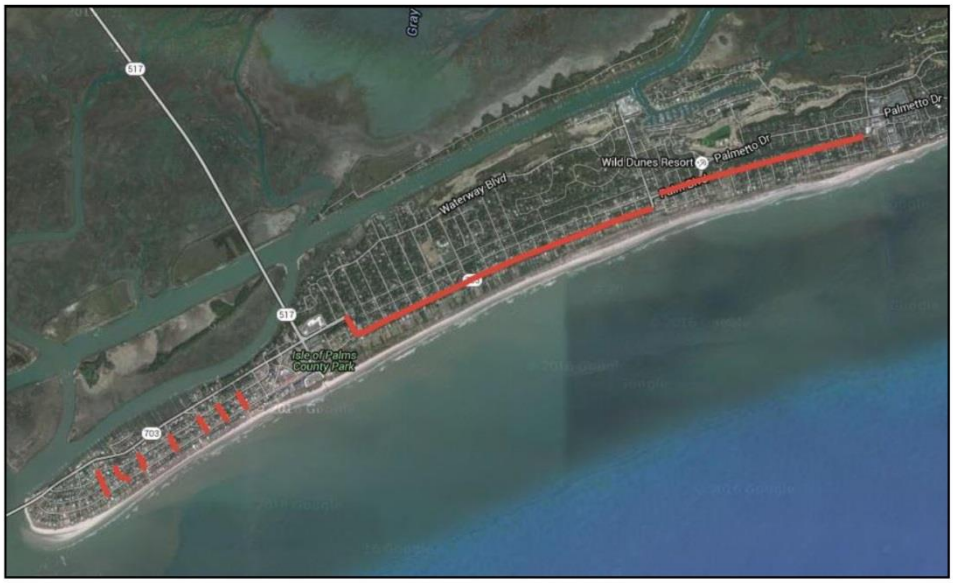


Figure 8. Beach parking districts (public parking along road rights-of-way) established by the 2015 Managed Parking Plan http://www.iop.net/beach-access-parking

The City installed over 400 signs along the roads of Isle of Palms during winter 2015-2016 to help residents and the public identify those areas where on-street (rights-of-way) parking is permitted (or not) per the Managed Beach Parking Plan.

Site inspections during preparation of the LCBMP show a total of approximately +/-1,566 public parking spaces are available for beach access purposes, broken down as follows:

- 10 spaces (including 1 handicap space) at Breach Inlet lot
- +/-61 spaces on road rights-of-way between 3rd Ave. and 9th Ave, including 2 paved handicap spaces off Ocean Blvd. at 9th Ave.
- +/-141 spaces along Ocean Blvd. between 10th Ave. and 14th Ave.
- +/-102 spaces, including 5 paved handicap spaces, in the City lot west of Pavilion Blvd.
- +/- 320 spaces in the City lot east of Pavilion Blvd.
- +/- 441 spaces, including 9 paved handicap spaces, in the Isle of Palms County park lots
- +/- 357 spaces on Palm Blvd. right-of-way between 21st Ave. and 41st Ave, including 2 paved handicap spaces off Palm Blvd. at 21st Ave.
- +/- 134 spaces on Palm Blvd. right-of-way between 41st Ave. and 57th Ave,

The above figures do not include designated golf cart parking spaces along the beach access paths at 25th Ave. (15 spaces), 28th Ave. (10 spaces) and 31st Ave. (10 spaces). Also not counted in the above figures -- the Property Owners Beach House in Wild Dunes provides +/- 50 paved vehicle parking spaces for Wild Dunes residents and guests, and provides space for approximately 30 golf carts along the community beach access path.

The City inspects road rights-of-way upon which public beach access parking is allowed, and prohibits any new encroachments. Some long-established encroachments persist due to complex legal issues, but those encroachments have been accounted for in the parking counts in this Plan.

In order to qualify for "full and complete public beach access" per State criteria, public parking and other facilities meeting the classification shown in Table 3 must be distributed along the shoreline (SC DHEC, 2012). According to LCBMP site inspections and Table 3:

- Isle of Palms County Park is classified as a *Regional Public Access Park*, and provides full and complete public access for 2 miles of shoreline, from 5th Ave to +/- 31st Ave.
- The Breach Inlet parking lot and parking along 3rd Ave. are each classified as a *Local Public Access Park*, and provide full and complete public access between Breach Inlet and 5th Ave (+/- 0.75 mile).
- Parking along Palm Blvd between 31st Ave. and 57th Ave, results in a continuous *Local Public Access Park* classification, and provides more than enough parking to yield full and complete public access for 2.0 miles, from +/- 31st Ave. to ¼ mile east of Access 57 (between 56th Ave. and 57th Ave.)

The number and distribution of public access points, facilities and parking exist to classify 4.8 miles of the Isle of Palms beach – from Breach Inlet to the Wild Dunes Grand Pavilion (¼ mile east of public beach access 57) -- as having full and complete access per the State guidelines (SC DHEC, 2012). See Figure 9.

Table 3. State Public Beach Access Facility Classification (SC DHEC, 2012).

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 and greater

Figure 9. Full and Complete Public Beach Access (Breach Inlet to ¼ mile east of Access 57).

Calculations show that Isle of Palms could require as few as 7 access points (one *Regional Public Access Park* and six *Local Public Access Parks*) and approximately 210 public parking spaces to yield full and complete public access along the same 4.8 mile shoreline. Isle of Palms has 8 times as many public access points and approximately 7.5 times the minimum required number of public parking spaces to provide full and complete public access.

3. Beachfront Drainage Plan

Controlling stormwater and other discharges along the beachfront areas of the Isle of Palms is a priority. Uncontrolled, direct discharge to the beach cannot only lead to erosion of dune and beach areas, but can also affect water quality. Fortunately, Isle of Palms has no pipe outfalls or swashes discharging onto the beach, and periodic water quality monitoring along the Atlantic shoreline has shown no bacteria levels exceeding state standards and no requirement to post beach swimming advisories for at least the past ten years. Stormwater issues on the island typically are related to shallow flooding of upland areas due to heavy rainfall. Stormwater issues seaward of the State's 40-year setback line are minor.

In 1990, the USDA- Soil Conservation Service completed a stormwater management study for the City of Isle of Palms, covering all drainage structures, systems and watersheds between Breach Inlet and 56th Avenue.

Following an episode of serious island-wide flooding in October 1994, the Isle of Palms City Council hired consulting engineers to review the study data prepared by the USDA-SCS and to recommend engineered drainage improvements that would alleviate flooding conditions while

still meeting stormwater management objectives of the Beach Management Act. As a result of the engineering study, $7 million in new drainage infrastructure was proposed. A bond referendum was conducted by City Council in November 1995, but the proposed bond issue was defeated by a wide margin. Since that time, stormwater improvements have been addressed on a project-by-project basis, with priority informed by the prior studies and recommendations.

Recent City and community actions related to stormwater are summarized below:

- During 2001 Wild Dunes undertook a major drainage project to accommodate the run-off of an upcoming project. The City was able to work in conjunction with Wild Dunes and agreed to pay to upgrade the size of the drainage pipe to accommodate additional drainage from an abutting neighborhood.
- The City drafted a Storm Water Management Plan (October 28, 2005) to bring it into compliance with the National Pollution Discharge Elimination System (NPDES) permit requirements and into compliance with the State of South Carolina Stormwater Management and Sediment Reduction Act (SC Code Sec. 48-14-10) -- to facilitate the long range planning associated with the protection, maintenance, and enhancement of the environment of the City of Isle of Palms. The City's Stormwater Plan was subsequently approved, and in August 2007, the City adopted (see Ordinances 2007-14, 2007-15, 2007-16 and 2007-17) stormwater and sediment control regulations, and established a stormwater utility.
- In the fall of 2011, the City collaborated with Wild Dunes and completed a $1.1M drainage project that alleviated many of the drainage problems between 53rd Ave. and 57th Ave. The second phase of the project will address drainage issues between 45th Ave. and 52nd. Ave., and has been designed (estimated cost $1.3 to $1.4 million). Partial funding (~$800,000) is in hand and the remaining funds should be in place in the next 1-2 years, at which time the project will be constructed.
- In addition to the routine maintenance of existing drainage facilities, which is done with the assistance of the Charleston County Public Works Department and the SC Department of Transportation (SCDOT), the City has been employing an innovative rehabilitation technique that utilizes a water jet and sewer vacuum truck to re-grade and re-sculpt ditches while simultaneously removing spoil material and vegetation. This process has been successful in shaping ditches that were previously difficult to access with heavy equipment. The City plans to continue funding for future maintenance using this same technique.
- As required by the Priority Investment Act of 2007, an analysis was conducted of the likely federal, state and local funds available for public infrastructure and facilities on the Isle of Palms (Isle of Palms Planning Commission, 2015). Some of the possible projects are roadway and drainage improvements, and they might be eligible for funding by the Charleston County Transportation Development or by other funding sources. Installation of public sewers in areas served by septic systems and having marginal soils is considered a priority (specifically, septic tank systems in the areas near

the beach between 42nd and 53rd Ave., adjacent to the Recreation Center from 26th to 29th Ave. and in low areas of the Forest Trail subdivision which are affected by flooding and seasonal high water and would benefit from public sewer service).

- The City cooperates with SCDHEC to monitor beach water quality at eight locations: 4th Avenue, 7th Avenue, 12th Avenue, 21st Avenue, 34th Avenue, 53rd Avenue, Dunecrest Lane and Port O'Call. If needed, the City has a standard protocol for warning swimmers if bacteria levels in swimming waters are elevated. DHEC will notify the City if water quality sampling results indicate unsafe conditions, at which time the City and/or DHEC will post signs in any affected areas (media reports do not always reach visitors and residents, and are not relied upon). All posting of signs is coordinated between the City and DHEC.

4. Beach Management and Authorities

Beach management on Isle of Palms is exercised primarily through the entities listed below. More detail is provided for some of these entities in the sections that follow.

Federal:

USACE (permitting under Section 10 of the Rivers and Harbors Act; Section 404 of the Clean Water Act; post-disaster emergency assistance to the State)

USFWS and NMFS (principally via coordination with USACE on matters related to threatened and endangers species)

NOAA (principally via coordination with USACE and state agencies on coastal zone management and consistency issues; provides coastal zone management funding and training)

FEMA (oversees the National Flood Insurance Program; provides pre- and post-disaster hazard mitigation grant funds; provides disaster assistance to individuals and communities; provides training to fire, emergency management and other local government staff)

USEPA (principally on matters related to NPDES stormwater permitting, air quality, hazardous waste, etc.)

USCG (provides maritime safety and security; oil spill response),

State of South Carolina

SCDHEC (implementation of the Beachfront Management Act; water quality)

SCDNR (principally on matters related to rare/threatened/endangered species; flood mitigation)

SCDOT (transportation and parking)

SCEMD (emergency management coordination and assistance)

Charleston County (hazard mitigation and emergency management; planning and funding assistance with transportation and infrastructure)

City of Isle of Palms (land use and development regulations; public health and safety; environmental protection; public works)

4.1 State Authorities

4.1.1 Overview of State Policies (Beachfront Management Act)

The following overview was obtained from http://www.scdhec.gov/beach/BeachfrontManagement/.

In 1988, the South Carolina "Beachfront Management Act" (Coastal Tidelands and Wetlands Act, as amended, §48-39-250 et seq.) established a comprehensive statewide beachfront management program. The Act included several key legislative findings, including (summarized):

- the importance of the beach and dune system in protecting life and property from storms, providing significant economic revenue through tourism, providing habitat for important plants and animals, and providing a healthy environment for recreation and improved quality of life of all citizens;
- unwise development has been sited too close to and has jeopardized the stability of the beach/dune system;
- the use of armoring in the form of hard erosion control devices such as seawalls, bulkheads, and rip-rap to protect erosion-threatened structures has not proven effective, have given a false sense of security, and in many instances, have increased the vulnerability of beachfront property to damage from wind and waves while contributing to the deterioration and loss of the dry sand beach;
- inlet and harbor management practices, including the construction of jetties which have not been designed to accommodate the longshore transport of sand, may deprive downdrift beach/dune systems of their natural sand supply;
- it is in the state's best interest to protect and promote increased public access to beaches for visitors and South Carolina residents alike.
- a coordinated state policy for post-storm management of the beach and dunes did not exist and that a comprehensive beach management plan was needed to prevent unwise development and minimize adverse impacts.

Section 48-39-260 of the Beachfront Management Act then established eight state policies to guide the management of ocean beaches:

1. Protect, preserve, restore, and enhance the beach/dune system;
2. Create a comprehensive, long-range beach management plan and require local beach management plans for the protection, preservation, restoration, and enhancement of the beach/dune system, each promoting wise use of the state's beachfront to include a gradual retreat from the system over a forty-year period;

3. Severely restrict the use of hard erosion control devices and encourage the replacement of hard erosion control devices with soft technologies which will provide for the protection of the shoreline without long-term adverse effects;
4. Encourage the use of erosion-inhibiting techniques which do not adversely impact the long-term well-being of the beach/dune system;
5. Promote carefully planned nourishment as a means of beach preservation and restoration where economically feasible;
6. Preserve existing public access and promote the enhancement of public access for all citizens, including the handicapped, and encourage the purchase of lands adjacent to the Atlantic Ocean to enhance public access;
7. Involve local governments in long-range comprehensive planning and management of the beach/dune system in which they have a vested interest; and
8. Establish procedures and guidelines for the emergency management of the beach/dune system following a significant storm event.

DHEC OCRM is responsible for implementing these policies through a comprehensive management program that includes research and policy development, state and local planning, regulation and enforcement, restoration, and extension and education activities.

4.1.2 Beachfront Setback Area

The State of South Carolina established a forty-year policy of retreat as part of the Beachfront Management Act in 1988. That Act stated that the policy of retreat would include measures that:

(a) stabilize the present beachfront shoreline position and sand volumes, through the use of renourishment in combination with groins, where such measures can be used without long term adverse effects on neighboring properties and the public beach,

(b) discourage (or limit) new construction in the beach/dune Critical Area

(c) prevent the seaward expansion of existing beachfront development

(d) limit the size of structures within the beach/dune Critical Area

(e) encourage the opportunistic, voluntary relocation of vulnerable structures and infrastructure;

(f) prevent the loss of dry sand beaches, and the state's intertidal beaches, by restricting shore-parallel erosion control devices and,

(g) encourage local governments, through zoning, to maximize space between existing oceanfront structures and the shoreline

DHEC OCRM, as the steward of the State's coastal resources, is responsible for implementing this policy. The policy is implemented by DHEC OCRM using jurisdictional lines along the ocean

shoreline. DHEC OCRM has established two jurisdictional lines along the open coast beaches of South Carolina:

- The "Baseline", which is established along the dune crest in "standard erosion zone" areas away from significant influence by unstabilized tidal inlets, and along the most landward shoreline (+/- vegetation line) in areas subject to significant influence by unstabilized tidal inlets. Although not applicable to the Isle of Palms, there is a third procedure used by OCRM to establish the baseline along shorelines near tidal inlets stabilized by jetties, terminal groins or other structures (the baseline is set in a manner similar to that in standard erosion zones). The Baseline is used as the reference feature from which the 40-year Setback Line is measured. Section 48-39-280 states that the baseline must not move seaward from its position on December 31, 2017.

  Section 48-39-280 states, "(1) The baseline for each standard erosion zone is established at the location of the crest of the primary oceanfront sand dune in that zone. In standard erosion zones in which the shoreline has been altered naturally or artificially by the construction of erosion control devices, groins, or other manmade alterations, the baseline must be established by the department using the best scientific and historical data, as where the crest of the primary oceanfront sand dunes for that zone would be located if the shoreline had not been altered. (2) The baseline for inlet erosion zones that are not stabilized by jetties, terminal groins, or other structures must be determined by the department as the most landward point of erosion at any time during the past forty years, unless the best available scientific and historical data of the inlet and adjacent beaches indicate that the shoreline is unlikely to return to its former position. In collecting and utilizing the best scientific and historical data available for the implementation of the retreat policy, the department, as part of the State Comprehensive Beach Management Plan provided for in this chapter, among other factors, 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. (3) The baseline within inlet erosion zones that are stabilized by jetties, terminal groins, or other structures must be determined in the same manner as provided for in item (1). However, the actual location of the crest of the primary oceanfront sand dunes of that erosion zone is the baseline of that zone, not the location if the inlet had remained unstabilized."

- The 40-year Setback Line, which establishes the landward limit of DHEC OCRM jurisdiction under the Beachfront Management Act, is drawn landward of the Baseline a distance equal to 40 times the average annual erosion rate or not less than twenty feet from the baseline for each erosion zone based on the best historical and scientific data adopted for the department as part of the State Comprehensive Beach Management Plan.

The DHEC OCRM Baseline and 40-year Setback Line were last updated for Isle of Palms in 2009. The 2009 lines are posted on the DHEC OCRM website http://www.scdhec.gov/beach/BeachfrontJurisdiction/, and are shown in Figures 10a through 10d, and the overlay maps in the LCBMP Appendix.

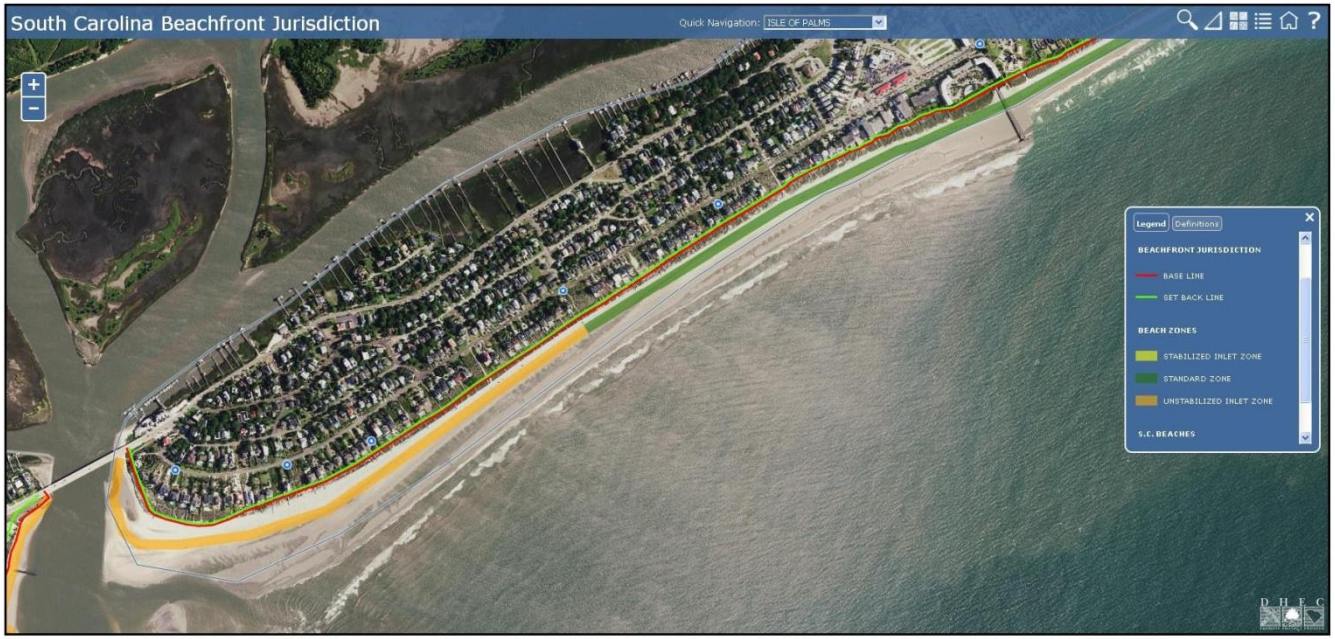


Figure 10a. 2009 Beachfront Jurisdictional Lines for Isle of Palms, Breach Inlet to Isle of 14th Ave. Red line = Baseline; green line = 40-year setback line; orange shading = unstabilized inlet erosion zone; green shading = standard erosion zone; blue dots = DHEC OCRM survey monuments and erosion rate locations.

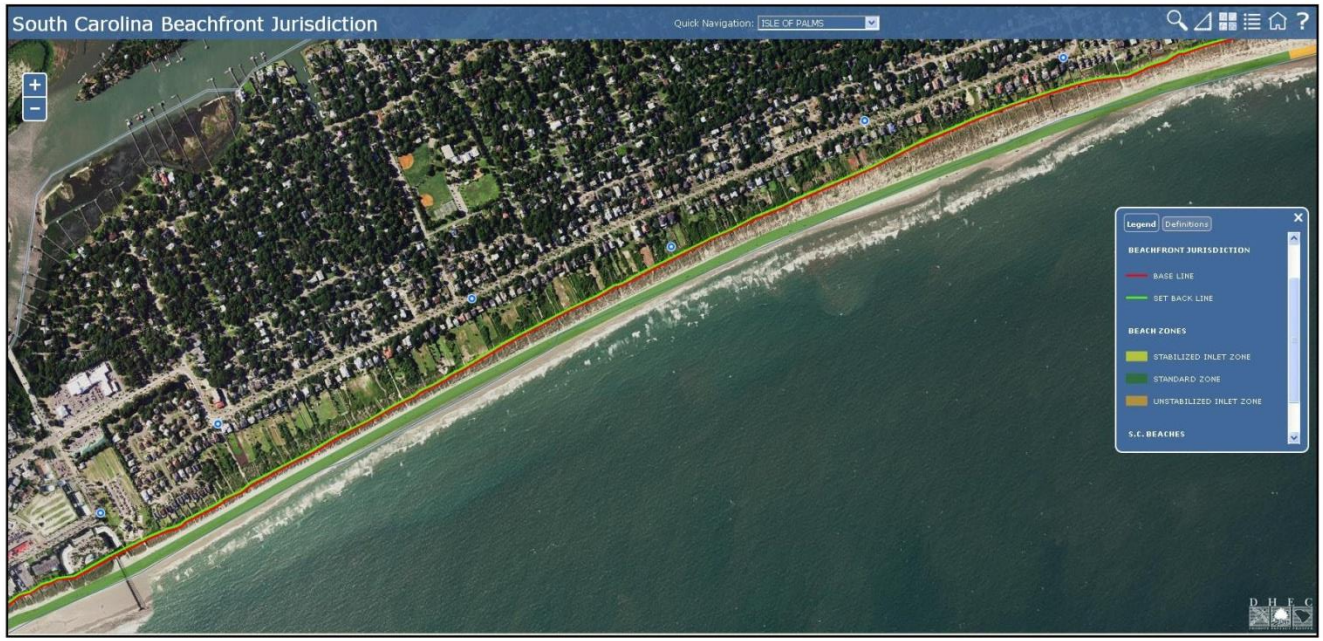


Figure 10b. 2009 Beachfront Jurisdictional Lines for Isle of Palms,14th Ave. to 41st Ave. Red line = Baseline; green line = 40-year setback line; orange shading = unstabilized inlet erosion zone; green shading = standard erosion zone; blue dots = DHEC OCRM survey monuments and erosion rate locations.

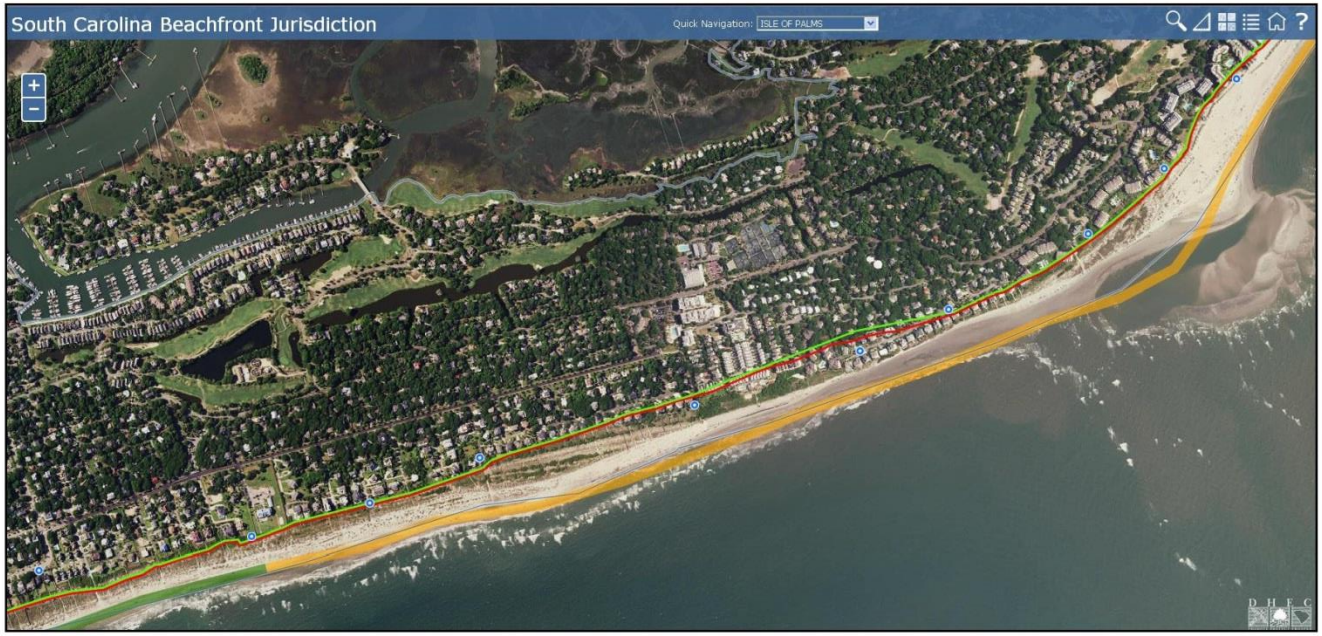


Figure 10c. 2009 Beachfront Jurisdictional Lines for Isle of Palms, 41st Ave. to Summer Dunes Lane. Red line = Baseline; green line = 40-year setback line; orange shading = unstabilized inlet erosion zone; green shading = standard erosion zone; blue dots = DHEC OCRM survey monuments and erosion rate locations.

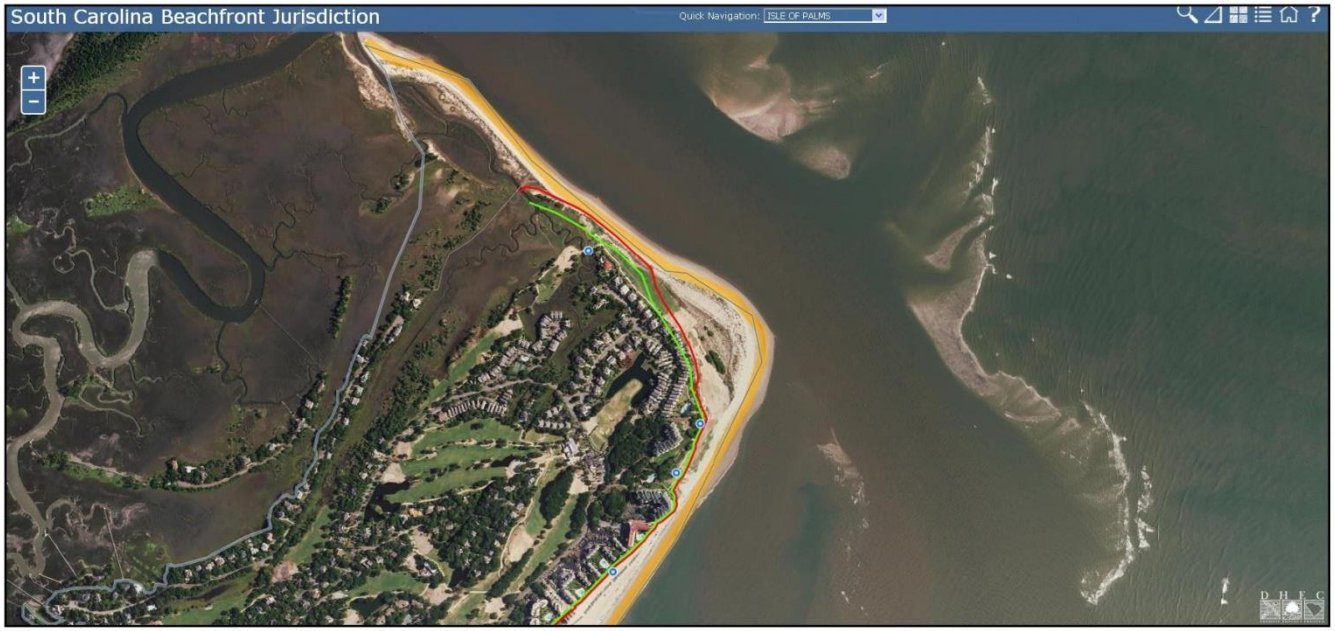


Figure 10d. 2009 Beachfront Jurisdictional Lines for Isle of Palms, Summer Dunes Lane to Dewees Inlet. Red line = Baseline; green line = 40-year setback line; orange shading = unstabilized inlet erosion zone; green shading = standard erosion zone; blue dots = DHEC OCRM survey monuments and erosion rate locations.

4.2 Local Government and Authorities

The City of Isle of Palms uses various plans to guide development and other activities on the island. It carries out those plans and exercises beachfront management authority through powers provided in various sections of its Code of Ordinances https://www2.municode.com/library/sc/isle_of_palms/codes/code_of_ordinances. Plans and pertinent sections of the City Code are discussed in sections 4.2.1 through 4.2.6 of this LCBMP.

4.2.1 Municipality's Comprehensive Plan

The Comprehensive Plan is intended to document the history of development on the Isle of Palms, to identify the community's problems and needs, and to articulate a vision for its future. The Plan is also intended to help guide future decision making in matters affecting the physical, social, and economic growth, development and redevelopment of the community. 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/or needs arise. The latest adopted Comprehensive Plan is dated May 26, 2015 http://www.iop.net/comprehensive-plan.

The Comprehensive Plan is guided by the following Vision Statement:

> *"Isle of Palms has developed into a premier barrier island residential community with a variety of housing styles, commercial uses and recreational facilities. Despite the natural cycle of beach erosion that is inherent on barrier islands and the extensive development of the island, the natural resources that make Isle of Palms such a wonderful place to live and visit remain intact and in good condition. Measures that will enhance the existing character of the island as a quality place to live, and protect the environment both on and around the island, must be taken to guide development and preserve the quality of life for generations to come."*

Issues most closely related to the beach and beach management are contained in the following elements of the Comprehensive Plan: Economic, Natural Resources, Community Facilities, Land Use, Transportation and Priority Investment.

Section 1.4 of this LCBMP identified three current beach management issues. These are listed below, accompanied by related extracts from the Comprehensive Plan and the status of City implementation for each.

- **Beach and dune erosion, particularly in the unstabilized inlet erosion zone at the eastern end of the island.** *(see Section 5.2.1 of this LCBMP)*

  Economic Element

  Goal 2.1 Balance the needs of residents and tourists with those of the environment.

  Strategy 2.1.1: Establish policies and procedures to ensure that beaches, marshlands and marinas are protected and preserved. *(Ongoing; Building Department and City Council)*

Strategy 2.1.3: Maintain and enhance an effective monitoring system to ensure beaches, marshlands and marinas are properly maintained. *(Ongoing; General Government and City Council)*

Natural Resources Element

Goal 3.3: Protect marshes, dunes and beaches.

Strategy 3.3.1: Create a public awareness/education program aimed at protecting the sensitive ecosystem of a barrier island, to include protection of dunes and marshes and their vegetation, as well as the importance of removing animal waste and trash from the beaches. *(2008; General Government and Building Department)*

Strategy 3.3.2: Support efforts to minimize the impact of erosion on the ends of the island including beach nourishment projects. *(Ongoing; General Government)*

Goal 3.5: Protect the island's wildlife and vegetation.

Strategy 3.5.1: Pursue enforcement of ordinance(s) aimed at protecting loggerhead turtle nesting activities and sites. *(Ongoing; Building Department and Police Department)*

Strategy 3.5.2: Support other regulations that protect wildlife and vegetation. *(Ongoing; General Government and Police Department)*

- **Balancing public beach parking demand with available safe parking capacity on the island.** *(see Section 2.5 of this LCBMP)*

  Transportation Element

  Goal 8.1: Improve traffic flow and reduce congestion on the roadways of the island.

  Strategy 8.1.4: Develop a management plan to lessen the effects beach traffic has on the island's roadways. *(2009; Building Department)*

  Goal 8.2: Discourage non-resident parking and traffic in residential neighborhoods.

  Strategy 8.2.1: Encourage appropriate measures including signs, traffic restrictions and parking restrictions. *(Ongoing; Managed Parking Plan being implemented; Police Department and City Council)*

- **Drainage of low-lying areas, an issue highlighted by tidal and rainfall flooding during October 2015 (Joaquin).** *(see Section 3 of this LCBMP)*

  Community Facilities Element

  Goal 5.6: The City should take initiatives to address drainage and storm water runoff on the island.

  Strategy 5.6.1: Continue to work closely with County and State agencies to properly maintain existing storm water and drainage systems. Clearly delineate the City's areas of responsibility and take appropriate action where feasible. *(Ongoing; General Government and City Council)*

Strategy 5.6.2: Consider funding for a comprehensive drainage study that would isolate the highest priority areas and provide engineering options and costs. *(Ongoing; General Government, Public Works and City Council)*

Strategy 5.6.3: Consider funding options, including special assessments, to address drainage problems. *(Ongoing; General Government and City Council)*

Strategy 5.6.4: The City should continue to work to remain in compliance with the National Pollution Discharge Elimination System Phase II as a small MS4 community. *(Ongoing; Building Department, General Government and City Council)*

Land Use Element

Goal 7.4: Ensure the adequacy of the infrastructure to support continued development and expanded uses.

Strategy 7.4.1: Continue to improve and expand the drainage system to alleviate the problems in those areas that drain poorly. *(Ongoing; Building Department and Public Works Department)*

Natural Resources Element

Goal 3.2: Improve the water quality of the ocean, waterway and creeks surrounding the island.

Strategy 3.2.4: Monitor DHEC/OCRM testing of ocean waters impacting the island. *(Ongoing; General Government and Building Department)*

Strategy 3.2.5: Create a public awareness/education program to address the impact of individual actions on the water ecology of the island. *(Ongoing; General Government, Building Department and Charleston County NPDES public education program)*

Priority Investments Element

Goal 9.1: Improve drainage in those areas that drain poorly.

Strategy 9.1.1: Identify problem areas and appropriate funding sources.

4.2.2 Municipality's Hazard Mitigation Plan

The City does not have a stand-alone Hazard Mitigation Plan, instead, elements of what would be a stand-alone plan are contained in the Charleston Regional Hazard Mitigation Plan, see http://www.charlestoncounty.org/departments/building-inspection-services/files/2015-2016-Hazard-Mitigation-Plan.pdf. The City has been and continues to be an active participant in the Regional Plan development and update process, and chose this approach to facilitate coordination and consistency with Charleston County and other jurisdictions. All IOP-specific hazard mitigation information is contained in the County plan. The City will actively pursue funding (in advance or reimbursement) for hazard mitigation activities described in the Plan, in its efforts to reduce future damage and loss along the City shoreline.

4.2.3 Municipality's Disaster Preparedness and Evacuation Plan

The City's Disaster Preparedness Plan is posted on the City's Emergency Preparedness web page http://www.iop.net/emergency-preparedness. The plan and the website provide important information to residents, day-workers and tourists.

The City hosts a Disaster Expo every year, usually in May. Local, state, federal, private and other organizations provide information to attendees.

The Governor and the Mayor have the authority to order evacuations of the island. Evacuation routes from the island have been designated by Charleston County and the State, and are posted on the City web site.

The City has instituted a hurricane re-entry sticker program to facilitate re-entry of residents after an evacuation.

Wild Dunes Community Association (2012) also has a Hurricane Emergency Preparedness Plan which is consistent with the City's.

4.2.4 Beachfront Development Regulations

Section 5-4-15(A) of the Code of Ordinances ensures that development and redevelopment seaward of the 40-year Setback Line will satisfy DHEC OCRM requirements. The section states, "No land or building situated in whole or in part in a critical area as defined in S.C. Code 1976, § 48-39-10, as amended, shall be used, occupied, constructed, altered or moved without compliance with the State of South Carolina Beachfront Management Act (S.C. Code 1976, § 48-39-10 et seq., as amended)."

Sections 5-4-151 through 5-4-170 (Flood Damage Prevention) govern additions, improvements and reconstruction of damaged buildings within the Special Flood Hazard Area (100-yr floodplain shown on Flood Insurance Rate Maps). On Isle of Palms, this area includes almost all of the island. These sections of the Code require new buildings to comply with flood-resistant design, construction and use standards, and require *substantially damaged* and *substantially improved* buildings to meet the requirements for new construction. City requirements are more restrictive than DHEC OCRM requirements regarding reconstruction/improvement in-place, but OCRM requirements govern retreat.

- The City Code defines s*ubstantial damage* to mean damage of any origin sustained by a structure whereby the cost of restoring the structure to its pre-damaged condition equals or exceeds fifty percent *(50%) of the fair market value* of the structure before the damage occurred. Note that this trigger for complying with current code requirements is more restrictive than DHEC OCRM classification of habitable structures that are destroyed beyond repair in R.30-1.C(17) and R.30-13.E (trigger is *66-2/3 % of replacement value*).
- The City Code defines *substantial improvement* to mean any combination of repairs, reconstruction, alteration, additions or improvements to a structure occurring within a

continuous period of five (5) years, measured from the date of the start of construction of improvement in which the cumulative cost equals or exceeds fifty percent (50%) of the fair market value of the structure before the start of construction. Note that this trigger for complying with current code requirements is more restrictive than DHEC OCRM treatment of: 1) additions to habitable structures in R.30-13.C (DHEC OCRM places no limit on the value of additions that trigger new construction requirements) and 2) repair and renovation of habitable structures that are not destroyed beyond repair in R.30-13.D (some habitable structures not captured by DHEC OCRM will be captured by the City Code).

Sections 5-4-45 through 5-4-48 of the Code of Ordinances generally permit nonconforming structures in the City to be used and rebuilt as long as the extent of the nonconformity is not increased, subject to certain limitations. The DHEC OCRM allowance in R.30-15.F (Activities Allowed Seaward of the Baseline, Special Permits) provides additional requirements related to non-conforming structures.

Several other portions of the City Code of Ordinances listed Section 4.2 of this LCBMP pertain directly to beachfront development and redevelopment regulations. These sections will be addressed in sections that follow.

4.2.5 Regulations on Beach and Shoreline Protection

Notwithstanding Section 5-4-15(A), it should be noted that while City zoning and land use regulations might permit construction or reconstruction of buildings larger than 5,000 sq ft in size (enclosed space), potential conflicts between DHEC OCRM and City regulations should not be a concern for most of the island. Outside the Wild Dunes PDD, City regulations specify a maximum single family residential building size (livable space) of 7,000 sq ft, or 40% of the lot area, whichever is less. While the maximum size permitted by the City can sometimes exceed the DHEC OCRM limit of 5,000 sq ft of heated space, other factors often limit single family residential building size below 7,000 sq ft (e.g., lot size, deed restrictions and covenants, City construction limits and setbacks).

A comparison of the City seaward construction limit for buildings and the 2009 DHEC OCRM Setback Line shows:

1. The seaward construction limit for buildings on lots in City Preservation Overlay Zone P-2 along 1.4 miles of shoreline between Breach Inlet and 10th Ave. (see Figure 5 and Section 2.3 of this LCBMP) generally lies approximately 20 ft to 150 ft landward of the DHEC OCRM Setback Line, except near the Breach Inlet bridge.
2. The seaward building construction limit in the commercial district (10th Ave. to 14th Ave) is 200 ft seaward of the Ocean Blvd. right of way -- see Section 5-4-36(3)(a). This setback is approximately 20 ft to 70 ft landward of the DHEC OCRM Setback Line.
3. The seaward building construction limit in the Sand Dune Lane area (east of County Park, west of 21st Ave.) is established by the neighborhood Architectural Review Committee, and has resulted in a more restrictive setback than the City would require through zoning. Buildings here are approximately 100 ft landward of the DHEC OCRM Setback Line.

4. The seaward building construction limit in City Preservation Overlay Zone P-1 along 1.6 miles of shoreline between 21st Ave, and 41st Ave. is approximately 100 ft to 450 ft landward of the DHEC OCRM Setback Line.
5. The seaward building construction limit along 0.7 miles of shoreline between 41st Ave. and 53rd Ave. is dictated by deed restrictions. The effective seaward limit of building construction is approximately 30 ft to 140 ft landward of the DHEC OCRM Setback Line.
6. The seaward building construction limit in City Preservation Overlay Zone P-3 along 0.3 miles of shoreline between 53rd Ave. and 56th Ave. is 110 ft from the rights-of-way for 54th, 55th and 56th Ave. The building construction limit is from approximately 50 ft landward of the DHEC OCRM Setback Line at 53rd Ave. to approximately *60 ft seaward* of the DHEC OCRM Setback Line near 57th Ave.
7. Within the Wild Dunes PDD, building construction limits are dictated by the development agreement. The seaward sides of buildings presently lie from approximately 25 ft landward of the DHEC OCRM Setback Line to approximately *275 ft seaward* of the DHEC OCRM Setback Line (Beachwood East).

The most likely location where buildings greater than 5,000 sq ft are, or could be, affected by the DHEC OCRM building size limitation is in the unstabilized inlet erosion zone east of 47th Ave., particularly where homes and condominium buildings already encroach significantly seaward of the Setback Line (between 56th Ave. and Port O'Call).

A review of the development agreement for Wild Dunes was not performed, nor was a review of individual documents for property regimes, and it is possible that these could contain minimum building size or other requirements that would conflict with DHEC OCRM building limitations -- but the City has no authority to initiate modifications to the development agreement or regime documents; therefore, these are not considered in this LCBMP.

4.2.6 Other Regulations on Beach Management

The following other City regulations pertain to beachfront management. Some of these were mentioned in Sections 2.2.1 and 4.2 of this LCBMP.

Title 3, Chapter 4 (Single-use plastic bags)

- Bans single-use plastic bags for checkout of retail goods.

Section 5-4-15 (Beach regulations)

- Prohibits development and activities that do not comply with the Beachfront Management Act.
- Prohibits construction of hard erosion control devices. Restricts sand bag installations.
- Requires only beach compatible sand be used for beach nourishment.
- Prohibits dune alteration except for dune walkovers that meet DHEC OCRM requirements.
- Requires sand fencing to meet DHEC OCRM requirements.
- Prohibits obstruction of public beach access.

Section 5-4-17 (Sea turtle outdoor lighting regulations)

- Prohibits illumination of the beach by lights from new and existing development between May 1 and October 31 each year.
- Establishes lighting fixture specifications and requirements.

Sections 6-2-15 (Dogs running at large), 6-2-23 (Dogs not to disturb protected species and habitats) and 7-3-15 (Restrictions on dogs on the beach)

- Prohibits off-leash dogs on the beach, except for between the hours of 4:00 p.m. to 10:00 a.m. from September 15 through March 31, and between the hours of 5:00 a.m. to 9:00 a.m. from April 1 through September 14. Requires owners of dogs off-leash to be in close proximity to the dog, have a leash in hand, and have the dog under control.
- Makes it unlawful for any person to allow their dog to disturb nesting sea turtles, turtle nests or turtle hatchings.
- Makes it unlawful for any person to allow their dog to enter into critical habitat areas which have been posted to prohibit such entry by the City or the State Wildlife and Marine Resources Department.

Title 7, Chapter 2 (Drinking on streets, beaches, etc., prohibited)

- Prohibits possession of containers of alcoholic beverages on the beach.

Title 7, Chapter 3 (Beach and Marine Recreation Regulations)

- Prohibits operation of motor vehicles on the beach, except for those determined by the City to be for emergency or public health and safety purposes.
- Prohibits use of surfboards or similar within 200 ft of the fishing pier or within 100 ft of any bather; requires surfers to use a surfboard leash within 200 ft of any bather or other surfers.
- Prohibits operation of motorboats and jet skis within 100 yards of the City police jurisdiction of the ocean.
- Prohibits beaching or launching of any motorboat or jet ski on the public beach, except in case of emergency.
- Prohibits parasailing within police jurisdiction.
- Prohibits littering or dumping of garbage or refuse or waste on the beach.
- Prohibits bringing glass bottles or receptacles onto the beach.
- Requires users to attend to any tents, canopies, beach chairs, kites, coolers, beach umbrellas and similar property on the beach after sunset.
- Prohibits locating any personal property within 25 ft of any emergency beach access or any turtle nest.

- Prohibits leaving personal property on the beach after sunset, except "Hobie Cat" style sailboats which are operable and kept in good working condition or poles supporting volleyball nets adjacent to commercially zoned property
- Prohibits overnight sleeping on the beach.
- Prohibits fires and fireworks on the beach, except for City-sponsored events.
- Prohibits physically harming, harassing, or otherwise disturbing any sea turtle (including eggs and hatchlings) or any sea bird (including eggs and young). Requires beached or stranded sea turtles, whales, or dolphins to be reported immediately to the City Police Department.
- Prohibits alteration, destruction or removal of any portion of a sand dune, except by obtaining valid permits for construction or development from all required governmental authorities.
- Prohibits any person from cutting, collecting, breaking, or otherwise destroying sea oat plants or other native dune grasses, or any part thereof, on public property or on private property without the owner's consent. *Same prohibition in Section 9-1-12.*
- Establishes a swimming zone east of the fishing pier and seaward of Isle of Palms County Park. Only swimming and wading and related activities are permitted in this zone when County lifeguards are on duty

Sec. 9-3-3 (Swimming and wading at Breach Inlet)

- Prohibits swimming and wading in the waters at Breach Inlet.

5. Erosion Control Management

5.1 Shoreline Change Analysis

There are two types of shoreline zones on the Isle of Palms: unstabilized inlet zones at each end, and a standard zone in the center. The zone extents are shown in Figure 10, and they are described below.

Breach Inlet unstabilized inlet zone: extends approximately 0.9 miles, from the Breach Inlet bridge to DHEC OCRM survey monument 3115B (6th Ave).

Standard zone: extends approximately 3.0 miles, between DHEC OCRM survey monuments 3115B (6th Ave.) and 3155 (47st Ave).

Dewees Inlet unstabilized inlet zone: extends approximately 3.1 miles, between DHEC OCRM survey monument 3155 and the end of Morgan Creek Spit (Dewees Inlet shoreline).

5.1.1 Beach Profiles

Beach profiles are used to monitor beach width, beach volume and beach/dune conditions over time. Beach profiles have been surveyed along portions of the Isle of Palms since the early 1980s. However, comprehensive beach profile measurements by DHEC OCRM contractors

began about 1987 and occurred on an annual (or more frequent) basis until about 2008; since that time, State monitoring on Isle of Palms occurred in 2013, 2015 and 2016. State beach profile measurements are taken from 24 survey monuments established by the State (Figure 11), starting with station 3100 near the Breach Inlet bridge, and extending to station 3190 on Dewees Inlet shoreline.

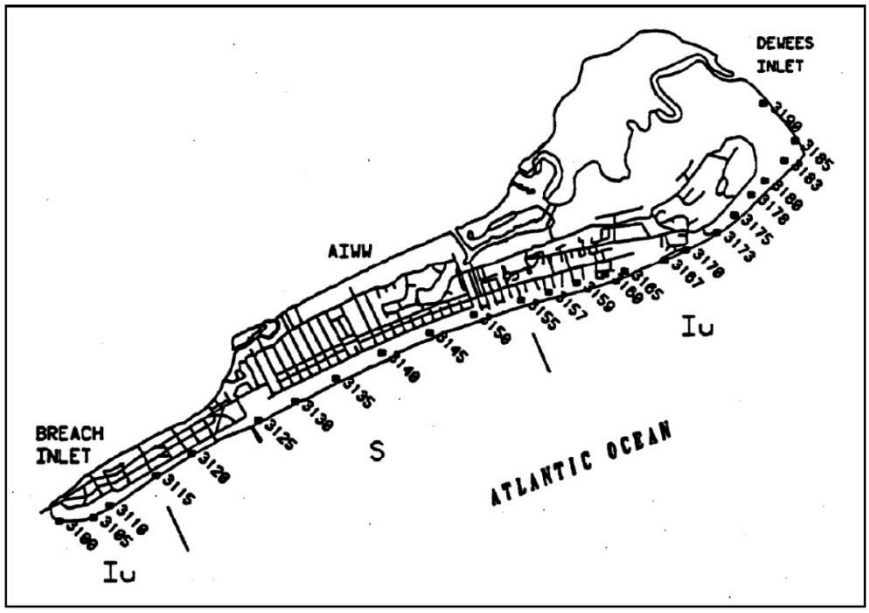


Figure 11. DHEC OCRM shoreline erosion zones (Iu = unstabilized inlet zone; S = standard zone) and beach profile survey monument designations (3100 to 3190) and locations (SCCC, 1992).

Older State beach profile data is stored in the Profile Management and Analysis System (PMAS), hosted here http://www.coastalgis.com/pmas/login/bmprofileselect.php?range=5995to0. Figure 12, 13 and 14 show examples of beach profiles over time for stations 3100B (Breach Inlet unstabilized inlet erosion zone, near Breach Inlet bridge), 3135B (standard erosion zone, at 27th Ave.) and 3175 (in Dewees Inlet unstabilized inlet erosion zone, at Mariner's Walk). The three figures are plotted at the same scale so they can be compared easily. It is apparent that the beach profile width and shape in the unstabilized inlet erosion zones – particularly the zone near Dewees Inlet -- fluctuate considerably over time, while the width and shape in the standard erosion zone is fairly constant. The fluctuations at station 3175 are attributable to the Dewees Inlet shoal attachment process. The fluctuations at station 3100B are attributable to less drastic changes at Breach Inlet. State beach profile data since 2012 are contained in the DHEC OCRM Berm Explorer web site https://gis.dhec.sc.gov/bermexplorer/ (see Figure 15).

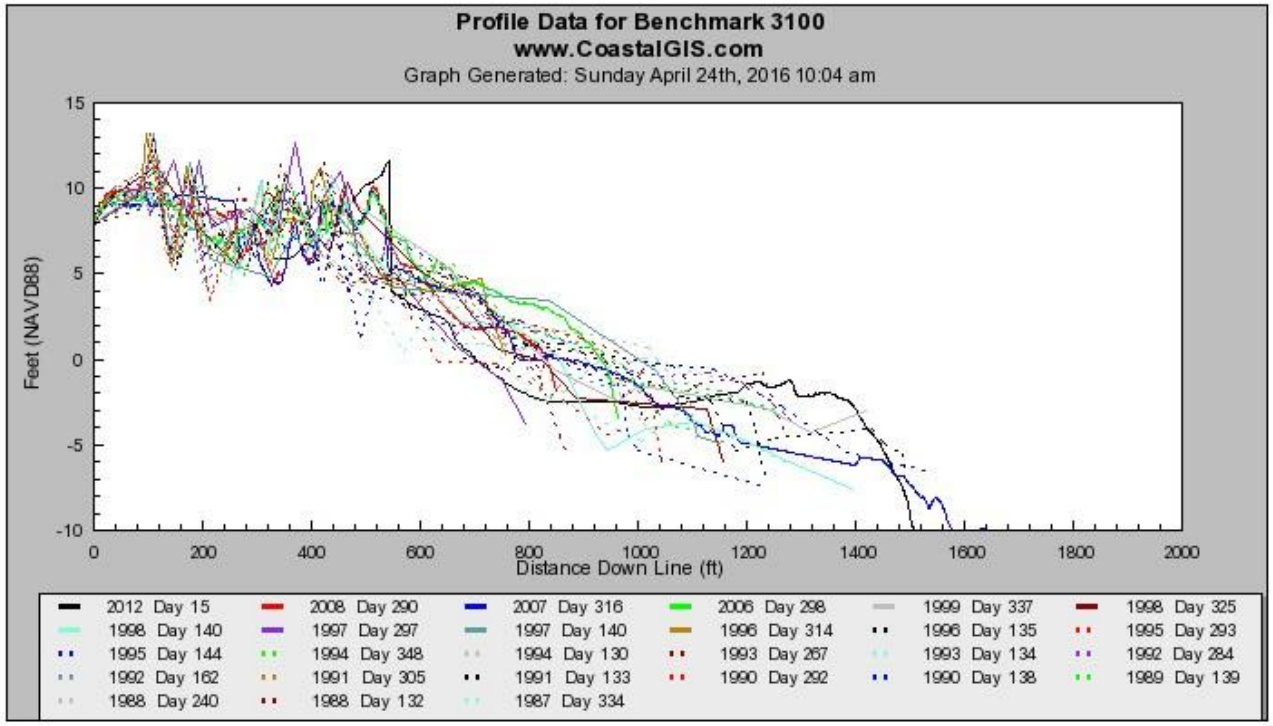


Figure 12. 1989 to 2012 PMAS beach profiles for Station 3100B (Breach Inlet bridge). Plotted at same scale as Figures 13 and 14.

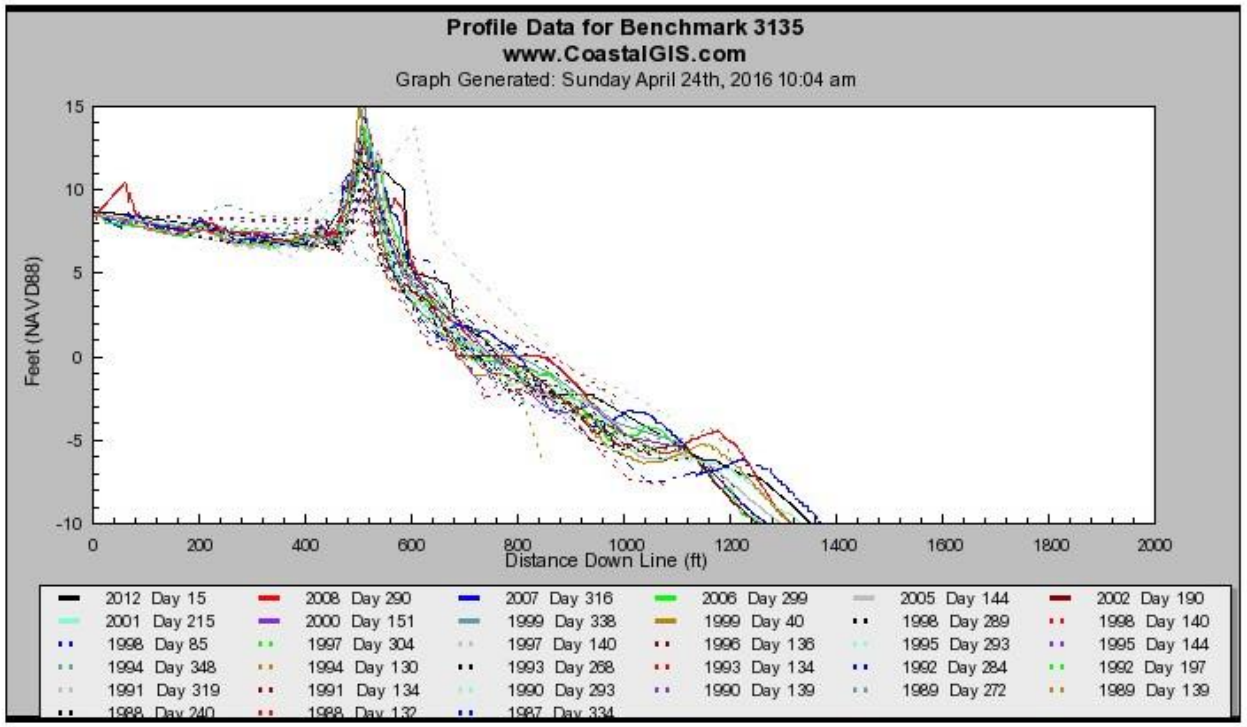


Figure 13. 1989 to 2012 PMAS beach profiles for Station 3135B (27th Ave.). Plotted at same scale as Figures 12 and 14.

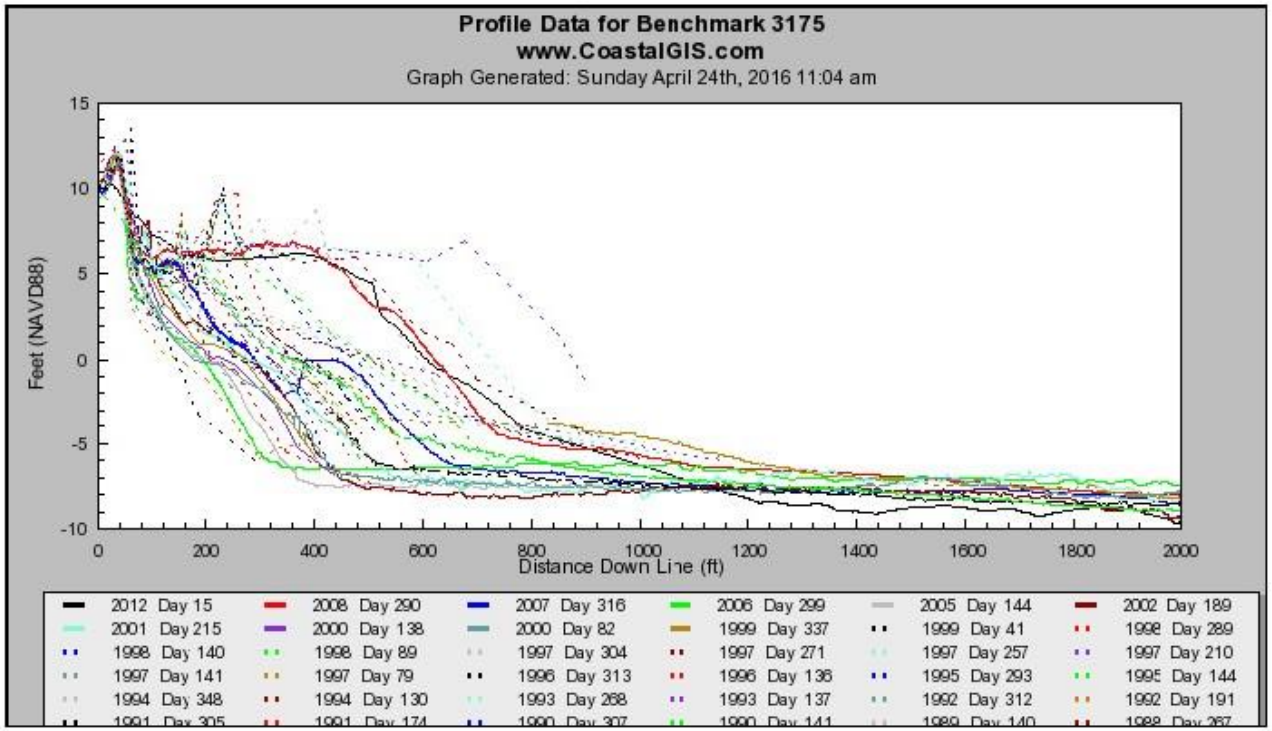


Figure 14. 1989 to 2012 PMAS beach profiles for Station 3175 (Mariner's Walk). Plotted at same scale as Figures 12 and 13.

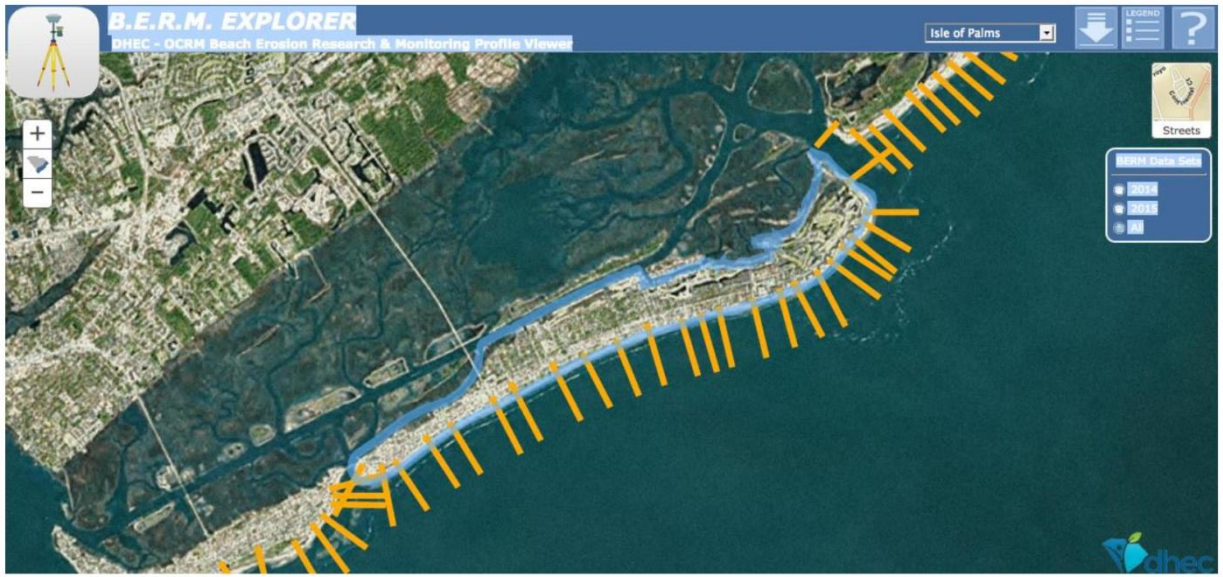


Figure 15. DHEC OCRM Berm Explorer beach profile site https://gis.dhec.sc.gov/bermexplorer/ showing profile locations for Isle of Palms.

Since 2008, the City has supplemented the State beach profile program with its own beach monitoring program, using more frequent and more closely spaced beach profiles (118 profile locations, including 24 DHEC OCRM stations). Collectively, the State and City-sponsored profile data provide a good picture of temporal and spatial changes along the shoreline. Reports written as part of the City-sponsored beach monitoring program (e.g., CSE, 2015a, CSE, 2016a) provide the most detailed beach profile change and volumetric calculations. See http://www.iop.net/beach-restoration for City beach monitoring reports.

The City beach monitoring program divides the shoreline into 7 reaches (see Figure 16). Reach 1 is the same as the DHEC OCRM unstabilized inlet zone at Breach Inlet. The DHEC OCRM standard zone includes monitoring reaches 2 and 3, and most of reach 4. The DHEC OCRM unstabilized inlet zone at Dewees Inlet includes part of monitoring reach 4, and all of reaches 5, 6 and 7.

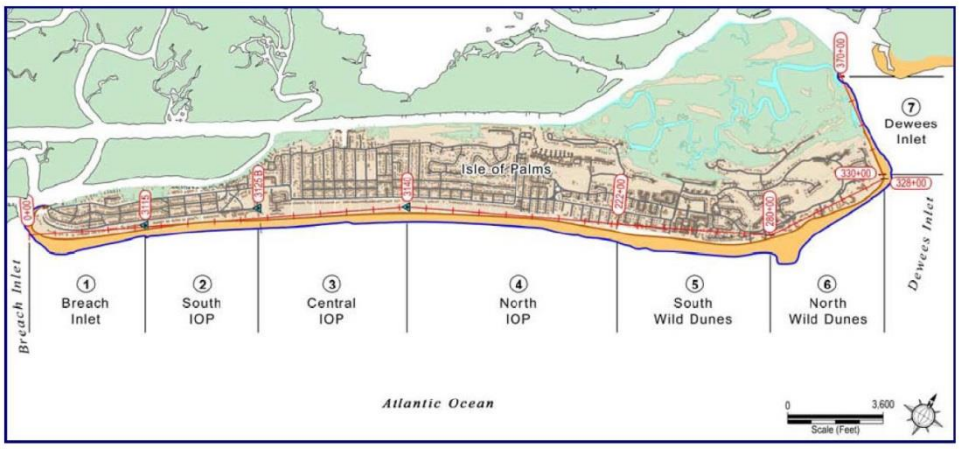


Figure 16. City beach monitoring reaches (CSE, 2015a).

5.1.2 Long-Term Erosion Rates and Shoreline Change

Prior studies have shown how shorelines have changed over a period of decades on Isle of Palms. For example, Figure 17 shows shoreline changes at the west end of the island between 1875 and 1983 (Jones, 1986). The long-term trend there has been accretion, with minor episodes of erosion. Figure 18 shows shoreline (vegetation line) movements along Beachwood East between 1949 and 1997 (data were developed as part of SCCC baseline establishment). As with many locations in the Dewees Inlet unstabilized inlet zone, the shoreline fluctuations here have been dramatic, often accreting or eroding hundreds of feet in just a few years.

DHEC OCRM has calculated long-term, average-annual rates of shoreline change at each of their survey monuments using historical shorelines and beach profile data. The rates are used to

determine the location of the 40-year Setback Line landward of the DHEC OCRM Baseline (setback distance = 40 time the long-term rate, but not less than 20 ft for areas that are stable or accretional over long periods of time). New erosion rates are adopted by DHEC OCRM when the Baseline and 40-year Setback Line are redrawn (approximately once every 8-10 years). Table 3 shows the erosion rates adopted with the 2009 Setback Line.

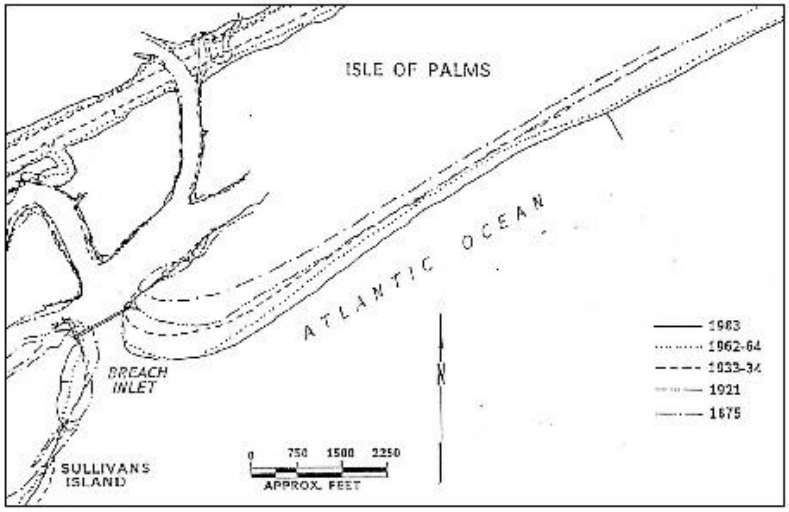


Figure 17. 1875 -1983 shoreline changes at the west end of Isle of Palms (Jones, 1986)

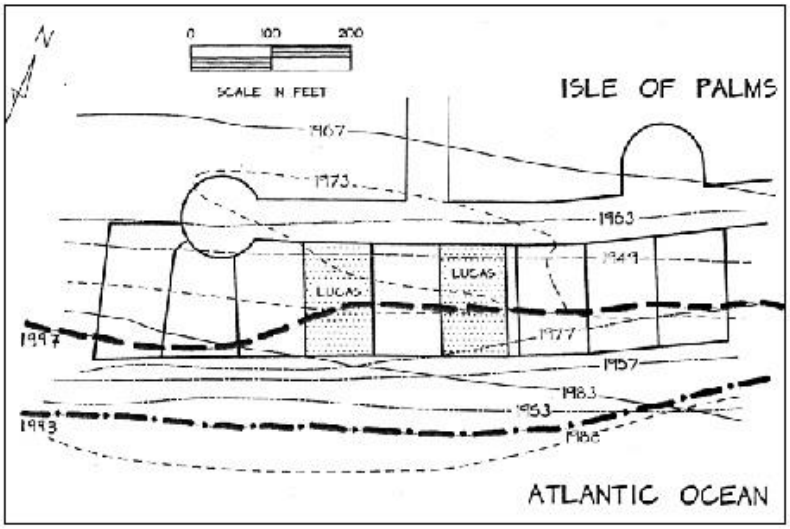


Figure 18. 1949-1997 movement of vegetation line in vicinity of Beachwood East.

Table 3. DHEC OCRM 2009 adopted erosion rates (ft/yr).

Monument	Long-term erosion rate (ft/yr)	Location
3100 B	0	Breach Inlet
3105 B	0	2nd Ave.
3110	0	3rd Ave.
3115 B	0	6th Ave.
3120 B	0	8th Ave.
3125 B	0	14th Ave.
3130 B	0	21st Ave.
3135 B	0	27th Ave.
3140	0	31st Ave.
3145 B	0	36th Ave.
3150 B	0	41st Ave.
3155	0	47th Ave.
3157	0	50th Ave.
3159 B	0	53rd Ave.
3165 B	-0.30	57th Ave.
3167 B	-1.80	Beachwood East (west end)
3170 B	0	Beachwood East (east end)
3173 B	0	Wild Dunes Property Owners Beach House
3175 B	0	Mariner's Walk
3178 B	0	Summer House
3180 B	0	Port O' Call
3183 B	0	Ocean Club
3185 B	0	18th fairway, Links Course
3190 B	-3.18	17th tee, Links Course

Notes:

1. "B" monuments are replacement monuments.
2. Erosion rates vary between monuments. See Surveyor's Package (DHEC OCRM, 2016)
3. Previously published erosion rates for 3165B, 3167B & 3190B were corrected by OCRM on May 9, 2016.

It should be noted that even though DHEC OCRM has classified the east end of Isle of Palms as an unstablized inlet zone, and even though portions of this zone have been subject to significant erosion over short periods of time (shoal attachments), DHEC OCRM has determined much of this zone to be *long-term* accretional. In areas like this the setback distance between the Baseline and Setback Line is the minimum established by the Beachfront Management Act (20 ft), but the Baseline is drawn on the most landward shoreline in the 40 years preceding Baseline and Setback Line establishment. Figure 19 (a close-up of Figure 10c) shows such a location where the State has determined the long-term trend to be accretional, but has established the Baseline landward of present development.

Figure 19. Example of long-term accretion and 20ft minimum setback distance, with DHEC OCRM Baseline and Setback Line landward of existing development.

5.2 Beach Alteration Inventory

There is one groin on Isle of Palms, on the Dewees Inlet shoreline near the Links Course 17th tee (Figure 20). The groin was constructed in the 1980s using large bags filled with grout. The groin is partially effective in maintaining the beach updrift (Links Course, 17th fairway) but has not significantly reduced the movement of sediment northward along the inlet shoreline. The Morgan Creek Spit continues to grow downdrift of the groin.

Figure 20. April 14, 2011 photos of groin at Wild Dunes Links Course, 17th tee.

There are thought to be five stone revetments east of 47th Ave – all but one buried by sand in April 2016. The approximate revetment locations and details (if known or estimated) are shown in the map overlays in the Appendix, and are described below:

- Rock revetment (see Figure 21). Length, approximately 700 ft, from approximately 600 ft west of DHEC OCRM station 3167 (Seagrove Villas) to approximately 100 ft east of DHEC OCRM station 3167 (west end of Beachwood East). Location, approximately 250 ft seaward of DHEC OCRM Setback Line. Condition, April 2016, exposed granite stone, ranging in size from approximately 6-in to 3-ft; woven filter fabric visible; other construction details unknown.
- Possible rock revetment. Length, approximately 600 ft, from approximately 170 ft west of 47th Ave. to approximately 100 ft east of 48th Ave. Location, approximately 40 ft seaward of DHEC OCRM Setback Line. Condition, April 2016, buried and not visible.
- Possible rock revetment. Length, approximately 1,300 ft, from 49th Ave. to 53rd Ave. Location, approximately 30 ft seaward of DHEC OCRM Setback Line. Condition, April 2016, buried and not visible.

- Possible rock revetment. Length, approximately 100 ft, near DHEC OCRM station 3165 east of 57th Ave. Location, approximately 100 ft seaward of DHEC OCRM Setback Line. Condition, April 2016, buried and not visible.
- Rock revetment. Length, approximately 1,100 ft (Beach Club II and Mariner's Walk). Location, approximately 60 ft seaward to 10 ft landward of DHEC OCRM Setback Line. Condition, April 2016, buried and not visible.

Figure 21. April 5, 2016 photo of exposed rock revetment near Seagrove/Beachwood East.

Kana, et al (1985) reported that approximately 3,300 ft of rock revetment was constructed in 1983, somewhere in the vicinity of Seagrove, Beach Club and Mariner's Walk. This length has not been confirmed as part of this LCBMP.

There are no known seawalls or bulkheads along the oceanfront, but there is one known timber retaining/landscaping wall near the east end of Beachwood East (approximately 80 ft long, plus return walls; other construction details are unknown) – see Figure 22.

As of January 19, 2017, there were three Wave Dissipation Systems (WDS) along the Isle of Palms oceanfront, all installed under pilot study authorization granted by the SC Legislature:

- Ocean Club. Length, approximately 350 ft.
- Seascape Villas. Length, approximately 200 ft (this is a replacement for a prior installation removed prior to a 2014 shoal management project).
- Beachwood East. Length, approximately 850 ft – see Figure 22.

DHEC OCRM ordered removal of the WDS by July 28, 2016, but the installations are still in place pending results of a legal challenge. The Citadel and a DHEC OCRM consultant evaluated the installations. DHEC OCRM staff recommended removal, and the issue is out for public comments as of January 19, 2017. The final resolution will occur after public comments are reviewed and the DHEC Board takes action. Documents and details may be found at http://www.scdhec.gov/homeandenvironment/water/wds/ .

Figure 22. April 5, 2016 photo of Wave Dissipation System installation at Beachwood East (same area as shown in Figure 17). WDS ties into rock revetment at west end, see Figure 21. A timber retaining/landscaping wall is also shown.

5.2.1 Beach Renourishment

There have been two large renourishment projects and numerous small projects, along the Wild Dunes shoreline. The small projects were truck-haul projects by property owners for emergency protection (1982 – 2008, details unknown).

There have also been two shoal management projects (2012, 2014-15) to redistribute sediment along the Wild Dunes shoreline in response to erosion from inlet shoal attachment.

The two large renourishment projects were both conducted using dredges:

- Nov. 1983 – Mar. 1984. 350,000 cy, pumped from new marina construction at the north side of the island onto the beach.

- May – June 2008. 934,000 cy (pay volume = 847,400 cy), pumped from 2.5 miles offshore onto three sections of beach totaling 10,200 ft in length (Figure 23) at a cost of $8.4 million (note: some references have reported a cost of $10 million, but this includes some of the subsequent shoal management work).

Figure 23. Locations of 2008 beach renourishment sites and offshore sediment borrow area (CSE, 2015a).

The 2008 project has been well-documented by a series of monitoring reports on the City web site http://www.iop.net/beach-restoration#2008. The latest report available (CSE, 2016a) shows that as of October 2015, 7+ years after construction:

- The project area east of 53rd Ave. contains 396,500 cy more sand than prior to the 2008 project.
- Fill retention in the project area has not been uniform, due principally to post-project inlet shoal attachments: fill reach C (monitoring reach 7) has gained sediment since the project; fill reach B (monitoring reach 6) has retained most of its fill placement, but losses at the eastern end (Ocean Club) have effectively resulted in loss of the entire fill placement there; as a whole, fill reach A (monitoring reach 5) has lost the entire fill volume, but losses along the eastern section have been greater than along the western section where much of the fill volume remains. See Figure 24.
- Downdrift portions of the Isle of Palms shoreline (i.e., west of 53rd Ave. and in monitoring reaches 1-4, see Figure 15) showed a gain of 561,000 cy between March 2009 and October 2015 (monitoring of reaches 1-4 was not conducted immediately pre-nourishment). Approximately 70% of the gain in monitoring reaches 1-4 was in reach 4 (31st Ave. to 53rd Ave.), since that reach benefitted first from downdrift transport of nourishment and shoal attachment sediment. See Figure 25.

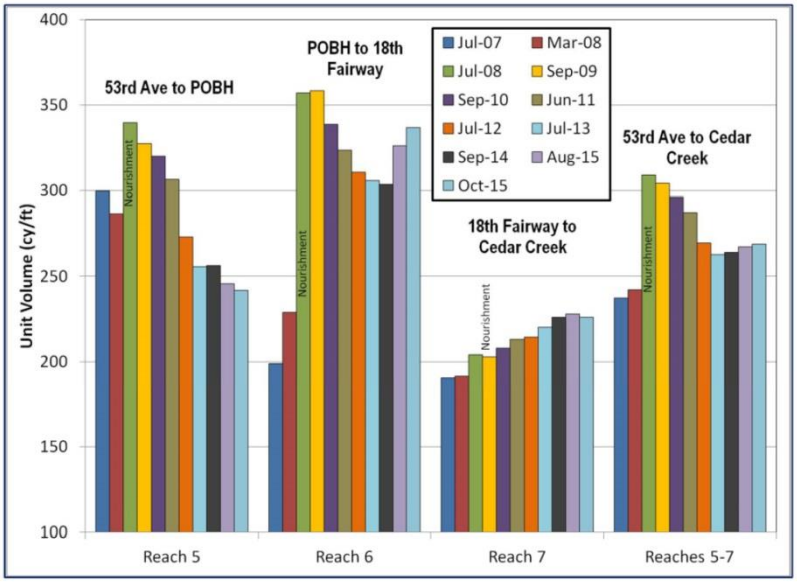


Figure 24. Unit volumes in monitoring reaches 5, 6 and 7, July 2007 to October 2015 (CSE, 2016a). See Figure 22 for fill locations and Figure 15 for beach monitoring reaches.

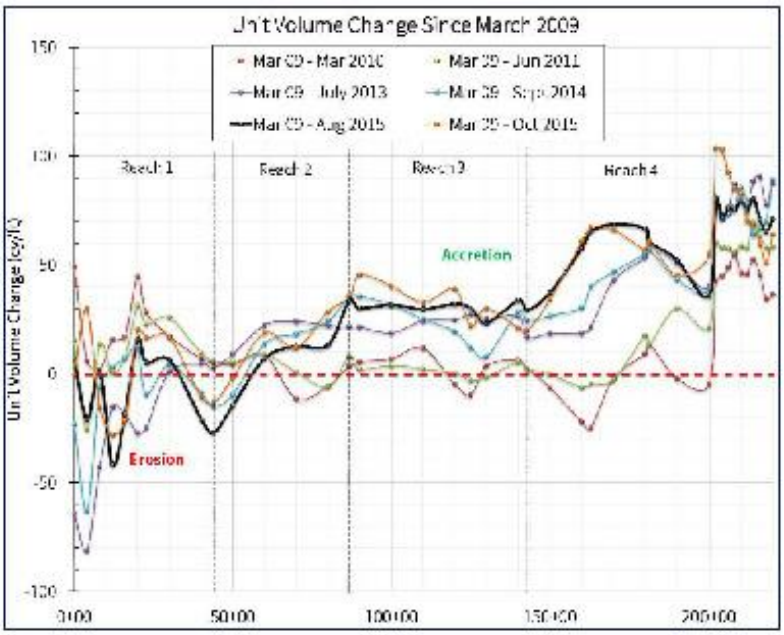


Figure 25. Unit volume changes in monitoring reaches 1-4, March 2009 to October 2015 (CSE, 2016a). See Figure 16 for beach monitoring reaches.

The two inlet shoal management projects were carried out using land-based equipment to address hot-spot erosion associated with post-nourishment inlet shoal attachment:

- Mar. - Apr. 2012. ~87,700 cy moved from a shoal attachment accretion area to an adjacent erosion area (Figure 26).
- Nov. 2014 – Feb. 2015. ~240,000 cy moved from accretion areas (53rd Ave. to 56th Ave., and Mariner's Walk/Shipwatch) to erosion areas (Beachwood East/Dunecrest lane, and Seascape/Ocean Club/18th hole). See Figure 27.

Shoal management work has proceeded under permits granted to the City by DHEC OCRM and USACE in 2011 and 2012. Those permits prescribe time windows (November 1 through April 30) during which work can take place; specifies a project size limit (two projects at up to 250,000 cy each, total volume = 500,000 cy); specifies a trigger for project initiation (+5 ft NAVD contour within 100 ft from building line); specifies excavation area buffer (excavation must take place at least 400 ft away from the building line).

Figure 26. Mar. – Apr. 2012 shoal management project (CSE, 2012).

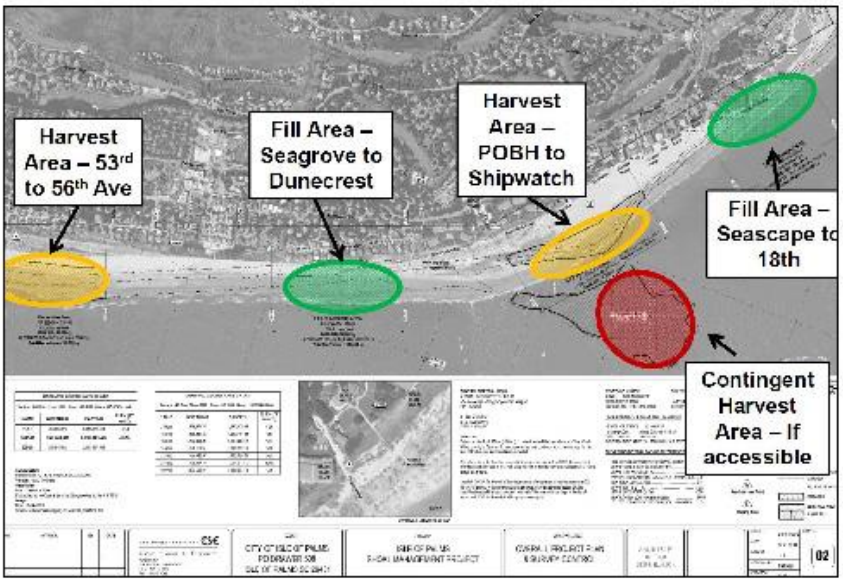


Figure 27. Plan for Nov. 2014 – Feb. 2015 shoal management project (CSE, 2014).

The shoal management permits were amended in April 2016 to increase the number of shoal management projects from two to four, and to increase the total project volume from 500,000 cy to 814,000 cy. The additional two shoal management projects must each be less than 250,000 cy, and no sediment can be excavated during the additional two projects from the area between 53rd Ave. and Grand Pavilion.

On November 2, 2016 the City submitted a permit application for a beach restoration project for the 11,000 ft reach between 53rd Ave. and Dewees Inlet (up to 1.4 million cy to be dredged from an offshore borrow area). On November 29, 2016 the City submitted an amended permit application to include the original planned nourishment, as well as a 9,000 ft reach between Breach Inlet and 14th Avenue (as a result of Hurricane Matthew effects). The amended project would include up to 2.0 million cy dredged from offshore, at an estimated cost of $19 million. The proposed project is out on public notice as of January 19, 2017.

The City has been coordinating with the State Historic Preservation Office and other agencies since July 2016 on identifying a borrow site that will not adversely impact an offshore historic district proposed for designation under the National Register of Historic Places and containing the Second Stone Fleet (the Second Stone Fleet was a group of thirteen (13) old whaling vessels secured by the Union forces and filled with rocks that were sailed into Charleston Harbor and sunk as part of their blockade of the port.).

5.2.2 Emergency Orders and Sandbags

Over the years, property owners have requested and received permission from DHEC OCRM for emergency sand placement (using upland, beach-compatible fill) and sand bag installation. The City has not issued any emergency orders for the work since 1996 but has concurred with DHEC OCRM issuance since that time. OCRM records show a total of 86 emergency orders were issued between 1996 and 2016 – all for properties in Wild Dunes – and eight of those emergency orders are still active as of August 2016 (see Table 4).

Prior to 2008, sand bag size was limited to 1 cubic ft, and the results were problematic – the small sand bags were dislodged and scattered by waves and currents. Starting in 2008, DHEC OCRM authorized the placement of 1 cy bags. No filter fabric beneath the bags was used, and the bags settled, requiring restacking and/or placement of additional bags.

Sand bags were removed prior to the 2008 beach nourishment project, but additional bags have been authorized and placed in eroding areas since then (in selected areas from Beachwood East to 18th hole of Links Course).

Following Hurricane Matthew, DHEC OCRM issued Emergency Orders EO-16-HM1, EO-16-HM2 and EO-16-HM3 on October 8, 2016 for all SC coastal counties, allowing sand bags, sand scraping and minor renourishment. The City entered into a contract to carry out sand scraping and emergency berm repairs shortly thereafter.

Table 4. Emergency Orders Issued on Isle of Palms, 1996-2016 (all Emergency Orders are expired except those shaded, which were issued on July 28, 2016). Source: SC DHEC - OCRM, April 28, August 2, 2016 and January 20, 2017.

Location (status)	By	Issue Date	Specified Mitigation Techniques
12 Beachwood East (expired)	City	19-Feb-96	Sand Scraping
13 Beachwood East (expired)	City	19-Feb-96	Sand Scraping
14 Beachwood East (expired)	City	19-Feb-96	Sand Scraping
15 Beachwood East (expired)	City	19-Feb-96	Sand Scraping
16 Beachwood East (expired)	City	19-Feb-96	Sand Scraping
17 Beachwood East (expired)	City	19-Feb-96	Sand Scraping
18 Beachwood East (expired)	City	19-Feb-96	Sand Scraping
19 Beachwood East (expired)	City	19-Feb-96	Sand Scraping
Wild Dunes Beachfront (expired)	OCRM	1-Apr-96	Sandbags, Sand Scraping, Renourishment
Ocean Club Villas (expired)	OCRM	19-Aug-05	Sand Scraping, Renourishment
Wild Dunes Beachfront (expired)	OCRM	9-Sep-05	Sand Scraping, Renourishment
Wild Dunes Beachfront (expired)	OCRM	18-May-06	Sandbags
6 Summer Dunes Ln (expired)	OCRM	1-Dec-06	Sandbags
7 Summer Dunes Ln (expired)	OCRM	1-Dec-06	Sandbags
8 Summer Dunes Ln (expired)	OCRM	1-Dec-06	Sandbags
9 Summer Dunes Ln (expired)	OCRM	1-Dec-06	Sandbags
Tidewater Villas (expired)	OCRM	1-Dec-06	Sandbags
Port O' Call Villas (expired)	OCRM	1-Dec-06	Sandbags
Ocean Club Villas (expired)	OCRM	14-May-07	Sandbags
Seascape Villas (expired)	OCRM	16-May-07	Sandbags
Summer House Villas (expired)	OCRM	21-Jun-07	Sandbags
Ocean Club Villas (expired)	OCRM	9-May-13	Sandbags
Wild Dunes Links Course (expired)	OCRM	8-Jul-13	Sandbags
Seascape Villas (expired)	OCRM	10-Mar-14	Sandbags
11 Beachwood East (expired)	OCRM	18-Mar-14	Sandbags
12 Beachwood East (expired)	OCRM	18-Mar-14	Sandbags
13 Beachwood East (expired)	OCRM	18-Mar-14	Sandbags
14 Beachwood East (expired)	OCRM	18-Mar-14	Sandbags
15 Beachwood East (expired)	OCRM	18-Mar-14	Sandbags
16 Beachwood East (expired)	OCRM	18-Mar-14	Sandbags
17 Beachwood East (expired)	OCRM	18-Mar-14	Sandbags
18 Beachwood East (expired)	OCRM	18-Mar-14	Sandbags
4 Dunecrest Lane (expired)	OCRM	18-Mar-14	Sandbags

Location (status)	By	Issue Date	Specified Mitigation Techniques
5 Dunecrest Lane (expired)	OCRM	18-Mar-14	Sandbags
19 Beachwood East (expired)	OCRM	21-Mar-14	Sandbags
20 Beachwood East (expired)	OCRM	30-Apr-14	Sandbags
Seascape Villas (expired)	OCRM	25-Sep-14	Renourishment
Seascape Villas (expired)	OCRM	1-Oct-14	Sandbags, Renourishment
Ocean Club Villas (expired)	OCRM	24-Oct-14	Renourishment
Ocean Club Villas (expired)	OCRM	20-Mar-15	Sandbags
11 Beachwood East (expired)	OCRM	24-Mar-15	Sandbags
12 Beachwood East (expired)	OCRM	24-Mar-15	Sandbags
13 Beachwood East (expired)	OCRM	24-Mar-15	Sandbags
14 Beachwood East (expired)	OCRM	24-Mar-15	Sandbags
15 Beachwood East (expired)	OCRM	24-Mar-15	Sandbags
16 Beachwood East (expired)	OCRM	24-Mar-15	Sandbags
17 Beachwood East (expired)	OCRM	24-Mar-15	Sandbags
18 Beachwood East (expired)	OCRM	24-Mar-15	Sandbags
19 Beachwood East (expired)	OCRM	24-Mar-15	Sandbags
11 Beachwood East (expired)	OCRM	27-May-15	Sandbags
12 Beachwood East (expired)	OCRM	27-May-15	Sandbags
13 Beachwood East (expired)	OCRM	27-May-15	Sandbags
14 Beachwood East (expired)	OCRM	27-May-15	Sandbags
15 Beachwood East (expired)	OCRM	27-May-15	Sandbags
16 Beachwood East (expired)	OCRM	27-May-15	Sandbags
18 Beachwood East (expired)	OCRM	27-May-15	Sandbags
19 Beachwood East (expired)	OCRM	27-May-15	Sandbags
11 Beachwood East (expired)	OCRM	28-Sep-15	Sandbags
13 Beachwood East (expired)	OCRM	28-Sep-15	Sandbags
14 Beachwood East (expired)	OCRM	28-Sep-15	Sandbags
Seascape Villas (expired)	OCRM	28-Sep-15	Sandbags
Ocean Club Villas (expired)	OCRM	28-Sep-15	Sandbags
15 Beachwood East (expired)	OCRM	29-Sep-15	Sandbags
16 Beachwood East (expired)	OCRM	29-Sep-15	Sandbags
17 Beachwood East (expired)	OCRM	7-Oct-15	Sandbags
Ocean Club Villas (expired)	OCRM	10-Nov-15	Renourishment
19 Beachwood East (expired)	OCRM	24-Nov-15	Sandbags
20 Beachwood East (expired)	OCRM	24-Nov-15	Sandbags
11 Beachwood East (expired)	OCRM	17-Dec-15	Sandbags
12 Beachwood East (expired)	OCRM	17-Dec-15	Sandbags
14 Beachwood East (expired)	OCRM	17-Dec-15	Sandbags
15 Beachwood East (expired)	OCRM	17-Dec-15	Sandbags

Location (status)	By	Issue Date	Specified Mitigation Techniques
16 Beachwood East (expired)	OCRM	17-Dec-15	Sandbags
17 Beachwood East (expired)	OCRM	17-Dec-15	Sandbags
19 Beachwood East (expired)	OCRM	17-Dec-15	Sandbags
20 Beachwood East (expired)	OCRM	17-Dec-15	Sandbags
Ocean Club Villas (expired)	OCRM	17-Dec-15	Sandbags, Renourishment
Seascape Villas (expired)	OCRM	22-Dec-15	Sandbags
11 Beachwood East (active)	OCRM	28-July-16	Sandbags
12 Beachwood East (active)	OCRM	28-July-16	Sandbags
14 Beachwood East (active)	OCRM	28-July-16	Sandbags
15 Beachwood East (active)	OCRM	28-July-16	Sandbags
16 Beachwood East (active)	OCRM	28-July-16	Sandbags
17 Beachwood East (active)	OCRM	28-July-16	Sandbags
19 Beachwood East (active)	OCRM	28-July-16	Sandbags
20 Beachwood East (active)	OCRM	28-July-16	Sandbags
Ocean shoreline, as needed (expired)	OCRM	8-October-16	Sandbags, sand scraping and minor renourishment (Hurricane Matthew)
8 Beachwood East (active)	OCRM	8-December-16	Minor renourishment
9 Beachwood East (active)	OCRM	8-December-16	Minor renourishment

5.2.3 Previous Hurricane or Storm Events

A number of hurricanes and storms have affected the Isle of Palms. The last major event was Hurricane Hugo in September 1989. Hugo was a Category 4 hurricane and its storm surge covered most of the island (peak water levels ranging between 15.5 feet above MSL along the beach and 12.5 feet above MSL along the back of the island). Hurricane Hugo damaged most buildings on the island and destroyed more than 200. Beach and dune erosion during Hugo was severe.

The more recent storms to affect Isle of Palms have been relatively minor, but still caused some flooding and erosion. The offshore passage of Hurricane Sandy in October 2012 caused erosion along the oceanfront. Hurricane Joaquin passed offshore (October 2015) but was accompanied by tides approximately 2 ft above predicted, strong waves and extremely heavy rainfall. The result was flooding of low-lying areas of the island and some erosion along the oceanfront. The effects on the island were documented by CSE (2015b).

Hurricane Matthew eroded dunes along the Isle of Palms shoreline in early October 2016. An erosion assessment was performed and recommendations were provided to the City in November 2016 (CSE, 2016b).

5.3 Discussion of Erosion Control Alternatives

Erosion control actions that have been employed on Isle of Palms have included a variety of measures: construction of rock revetments and a groin (Section 5.2), beach nourishment and shoal management (see Section 5.2.1), and emergency fill placement and sand bags (Section 5.2.2). Kana, et al. (1985) reports that property owners also used sand scraping and artificial seaweed in the early 1980s.

The City has maintained its prohibition on hard erosion control devices (within 250 ft of mean high water) for at least 30 years. The DHEC OCRM prohibition would apply landward of this point, if the State's 40-year setback line lies landward of the City's 250 ft zone. The City defers to the State on experimental erosion control devices.

Between the mid-1980s and 2007, the City was a mostly a passive participant in erosion control efforts, leaving those to property owners. However, the City agreed with the 2007 recommendations of the Long-term Beach Management Advisory Group (Jones, 2008) and authorized use of City funds for permitting, design and construction of major beach nourishment using offshore sediment, and for shoal management projects. The City also funds beach monitoring surveys and studies.

Going forward, the erosion control alternatives likely to be used on Isle of Palms are those that have proven most effective -- beach nourishment (offshore sediment), shoal management (excavation from accreting shoal areas and fill in eroding areas), and emergency sand bagging and fill placement by property owners. Other alternatives authorized by the State (e.g., experimental wave dissipation system installations) may also be used.

Retreat on Isle of Palms will be addressed via City zoning and construction setbacks (see Section 4.2.5) which are generally more restrictive than DHEC OCRM requirements for siting of new and reconstructed buildings west of 53rd Ave.

Within the Wild Dunes PDD, retreat is more difficult for two reasons: 1) this portion of the island is governed by development agreements and regime documents over which the City has no control, and 2) development in the PDD has many large, fully-engineered buildings, which are more resistant to destruction by surge, waves and erosion. In this district, retreat will likely depend on destruction of buildings by major storms, and by voluntary relocation of buildings.

The most likely "retreat" option in the PDD will involve moving the shoreline away from the buildings rather than moving the buildings away from the shoreline – at least until such time as a major storm destroys buildings that are seaward of the DHEC OCRM Setback Line. Even then, however, issuance of special permits by DHEC OCRM may moderate the goal of retreat from the shoreline.

5.3.1 Beach Renourishment

The City has demonstrated its commitment to beach renourishment, and plans to continue working with affected property owners and other stakeholders to implement this alternative in the future. In November 2016 the City submitted a permit application for another large nourishment project, and is securing funds for such a project.

The City advocated for and was successful in changing State law in 2014, allowing qualified communities to ask voters to institute a Beach Preservation Fee (http://www.scstatehouse.gov/sess120_2013-2014/bills/503.htm). In November 2014. City voters overwhelmingly passed a referendum establishing a City Beach Preservation Fee (1% of gross receipts for accommodations and certain rentals). Receipts from the Fee will be used for beach monitoring, beach nourishment, erosion mitigation, dune restoration and maintenance, and maintenance of public beach accesses.

State cost-sharing for renourishment areas designated as having full and complete public access is pursued by the City. This includes the western ¼ mile of the Wild Dunes shoreline (most of Wild Dunes is not eligible under current rules). The City also works closely with Wild Dunes on planning, permitting, funding and monitoring beach projects there.

5.3.2 Other Measures

Other erosion control alternatives to be used in the community were outlined above: beach nourishment (offshore sediment); shoal management (excavation from accreting shoal areas and fill in eroding areas); emergency sand bagging and fill placement by property owners; and other options authorized by the State (e.g., experimental wave dissipation system installations).

6. Needs, Goals and Implementation Strategies

As was stated previously in Sections 1.4 and 4.2.1 of this LCBMP, there are three principal beach management issues facing Isle of Palms. The City has implemented, and will continue to implement, those measures necessary to address these issues:

1. Beach and dune erosion, particularly in the unstabilized inlet erosion zone at the eastern end of the island. *Strategy: manage and minimize erosion effects through beach monitoring, beach nourishment, shoal management, and limited emergency protection as approved by DHEC OCRM. The Comprehensive Plan, City Code of Ordinances and Council/Department actions support these types of measures.*
2. Balancing public beach parking demand with available safe parking capacity on the island. *Strategy: document parking demand and capacity on the island (completed, 2015) and implement a managed beach parking program to balance public beach parking and resident needs (being implemented, 2016 beach season).*
3. Drainage of low-lying areas. *Strategy: adopt a stormwater plan and stormwater utility (accomplished) and identify and implement drainage projects and funding sources. This work is ongoing, and is supported by the Comprehensive Plan, the Code of Ordinances, and by Council/City department actions and operations. Fortunately, few drainage problems exist seaward of the DHEC OCRM Setback Line, and those that do are being addressed by the City.*

6.1 Retreat Strategy

The retreat strategy was discussed in Section 5.3 of the LCBMP. The area west of 53rd Ave. is largely built-out, and construction setbacks there are already more restrictive than DHEC OCRM requirements. Retreat west of 53rd Ave. is not likely to be necessary.

Given the positive sediment budget and low erosion rates for most of the island, landward movement of the DHEC OCRM Baseline and Setback line is unlikely except possibly in the unstabilized inlet zone at the east end of the island. Unfortunately, this is also the area at greatest risk to erosion effects associated with inlet shoal attachment. This is also the area (Wild Dunes PDD), where development agreements and other legal documents guide and regulate development and redevelopment. City zoning and land use requirements in this area have been established but may be of limited use in enforcing a retreat strategy. Instead the City will assist PDD property owners and entities in their efforts to maintain a wide beach and to minimize temporary erosion associated with inlet shoal attachments. Retreat in this area (or anywhere on the island) by acquisition and relocation of buildings is not likely feasible. Grant funds are limited and property values are high. Some individual property owners may voluntarily choose relocation, or relocation may be mandated by DHEC OCRM if structures are destroyed beyond repair.

6.2 Strategy for Preserving and Enhancing Public Beach Access

Maintaining public beach access on the island is very important and has been addressed by the City. There are 56 public beach access points along approximately 4.6 miles of beach. The beach accesses are recorded on plats and are protected against loss, encroachment or damage by City monitoring and enforcement. The City has over 7 times the necessary public beach access points and facilities to qualify 4.8 miles of beach as having full and complete public access according to SC DHEC criteria (see Table 3). However, all seven miles of Isle of Palms beaches are public beaches, and are accessible to the public. For the 2.2 miles of Wild Dunes beach beyond the SC DHEC full-and-complete-public-access designation, the public can visit the beach from the adjacent beach with full-and-complete-public-access, or from one of the many vacation/rental accommodations available in Wild Dunes.

7. References

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Appendix 1. Inventories

ISLE OF PALMS – Sheet 163

Structural Inventory

Street/ Development	Tax Map Number	Parcel Number	(*) Structure Inventory	(**) Structure Location (ft)	(**) Erosion Control Structure
Hunley Bridge	568-9-0	142	--	--	--
	568-9-0	147	--	--	--
	568-9-0	148	--	--	--
	568-9-0	149	--	--	--
	568-9-0	150	--	--	--
	568-9-0	151	--	--	--
	568-9-0	152	--	--	--
	568-9-0	153	--	--	--
	568-9-0	154	--	--	--
	568-9-0	155	--	--	--
	568-9-0	156	--	--	--
	568-9-0	157	--	--	--
	568-9-0	158	P	+15	--
	568-9-0	159	--	--	--
	568-9-0	160	--	--	--
	568-9-0	161	P	+20	--
2nd Ave	568-9-0	143	--	--	--
	568-9-0	162	--	--	--
	568-9-0	163	--	--	--
	568-9-0	164	--	--	--
	568-9-0	165	--	--	--
	568-9-0	166	--	--	--
	568-9-0	167	--	--	--
	568-9-0	168	--	--	--
	568-9-0	169	--	--	--
3rd Ave	568-9-0	144	--	--	--

Note:* A = Habitable Structure <5,000 sq. ft
B = Habitable Structure >5,000 sq. ft.
C = Ancillary Building
D = Deck
P = Pool/Pool Deck
PP = Private Pier
RV = Rock Revetment

*** Distances Measured Seaward From OCRM 40-Year Setback Line*

Note: Distances relative to 40-year setback line were calculated using 2015 USGS aerial imagery and information from DHEC OCRM. Distances are approximate and actual distances may vary. If more accurate distances are required a field survey is recommended.

ISLE OF PALMS – Sheet 164

Structural Inventory

Street/ Development	Tax Map Number	Parcel Number	(*) Structure Inventory	(**) Structure Location (ft)	(**) Erosion Control Structure
3rd Ave	568-9-0	144	--	--	--
	568-9-0	170	--	--	--
	568-9-0	171	--	--	--
	568-9-0	172	--	--	--
	568-9-0	173	--	--	--
	568-9-0	174	--	--	--
	568-9-0	175	--	--	--
	568-9-0	176	--	--	--
4th Ave	568-10-0	175	--	--	--
	568-10-0	178	--	--	--
	568-10-0	179	--	--	--
	568-10-0	180	--	--	--
	568-10-0	181	--	--	--
	568-10-0	182	--	--	--
5th Ave	568-10-0	176	--	--	--
	568-10-0	183	--	--	--
	568-10-0	184	--	--	--
	568-10-0	185	--	--	--
	568-10-0	186	--	--	--
	568-10-0	187	--	--	--
	568-10-0	188	--	--	--
	568-10-0	189	--	--	--
	568-10-0	190	--	--	--
	568-10-0	191	--	--	--
	568-10-0	192	--	--	--
	568-10-0	193	--	--	--
	568-10-0	194	--	--	--
6th Ave	568-10-0	177	--	--	--
	568-10-0	195	--	--	--
	568-10-0	196	--	--	--

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RV = Rock Revetment

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ISLE OF PALMS – Sheet 165
Structural Inventory

Street/ Development	Tax Map Number	Parcel Number	(*) Structure Inventory	(**) Structure Location (ft)	(**) Erosion Control Structure
6th Ave	568-10-0	197	--	--	--
	568-10-0	198	--	--	--
	568-10-0	199	--	--	--
	568-10-0	200	--	--	--
	568-10-0	201	--	--	--
	568-10-0	202	--	--	--
	568-10-0	203	--	--	--
	568-10-0	204	--	--	--
	568-10-0	205	P	+5	--
7th Ave	568-11-0	212	--	--	--
	568-11-0	216	--	--	--
	568-11-0	217	--	--	--
	568-11-0	218	P	+15	--
	568-11-0	219	--	--	--
	568-11-0	220	--	--	--
	568-11-0	221	--	--	--
	568-11-0	222	--	--	--
8th Ave	568-11-0	213	--	--	--
	568-11-0	223	--	--	--
	568-11-0	224	--	--	--
	568-11-0	225	--	--	--
	568-11-0	226	--	--	--
	568-11-0	227	--	--	--
	568-11-0	228	--	--	--
	568-11-0	229	--	--	--
9th Ave	568-11-0	214	P	+10	--
	568-11-0	230	--	--	--
	568-11-0	231	P	+10	--
	568-11-0	232	--	--	--
	568-11-0	233	--	--	--
	568-11-0	234	--	--	--
	568-11-0	235	--	--	--

Note:* A = Habitable Structure <5,000 sq. ft
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C = Ancillary Building
D = Deck
P = Pool/Pool Deck
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RV = Rock Revetment

*** Distances Measured Seaward From OCRM 40-Year Setback Line*

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ISLE OF PALMS – Sheet 166

Structural Inventory

Street/ Development	Tax Map Number	Parcel Number	(*) Structure Inventory	(**) Structure Location (ft)	(**) Erosion Control Structure
9th Ave	568-11-0	235	--	--	--
10th Ave	568-11-0	236	--	--	--
	568-11-0	Dunescape	--	--	--
	568-11-0	206	--	--	--
Harbor Boulevard	568-11-0	240	--	--	--
	568-11-0	Seaside Inn	--	--	--
	568-11-0	Ocean Palms	--	--	--
	568-11-0	Ocean View	--	--	--
	568-11-0	245	--	--	--
	568-11-0	186	--	--	--
	568-11-0	187	--	--	--
	568-11-0	250	--	--	--
	568-11-0	193	--	--	--
Pavilion Drive	568-11-0	Ocean Blvd.	--	--	--
	568-11-0	Sea Cabin	--	--	--
	568-12-0	Sea Cabin	PP	+550	--
14th Ave	568-12-0	23	--	--	--
	568-12-0	252	--	--	--
	568-12-0	253	--	--	--
	568-12-0	254	--	--	--
	568-12-0	255	--	--	--
	568-12-0	256	--	--	--
	568-12-0	257	--	--	--

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D = Deck
P = Pool/Pool Deck
PP = Private Pier
RV = Rock Revetment

*** Distances Measured Seaward From OCRM 40-Year Setback Line*

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ISLE OF PALMS – Sheet 167

Structural Inventory

Street/ Development	Tax Map Number	Parcel Number	(*) Structure Inventory	(**) Structure Location (ft)	(**) Erosion Control Structure
14th Ave	568-12-0	257	--	--	--
	568-12-0	258	--	--	--
	568-12-0	259	--	--	--
	568-12-0	260	--	--	--
	568-12-0	230	--	--	--
	568-12-0	26	--	--	--
	568-12-0	303	--	--	--
	568-12-0	304	--	--	--
	568-12-0	029	--	--	--
21st Ave	568-12-0	231	--	--	--
	568-12-0	306	--	--	--
	568-12-0	307	--	--	--
	568-12-0	308	--	--	--
	568-12-0	309	--	--	--
22nd Ave	571-9-0	310	--	--	--
	571-9-0	160	--	--	--
	571-9-0	198	--	--	--
	571-9-0	199	--	--	--
	571-9-0	200	--	--	--
23rd Ave	571-9-0	201	--	--	--
	571-9-0	202	--	--	--
	571-9-0	166	--	--	--
	571-9-0	204	--	--	--
24th Ave	571-9-0	205	--	--	--
	571-9-0	206	--	--	--
	571-9-0	207	--	--	--
	571-9-0	208	--	--	--
25th Ave	571-9-0	172	--	--	--
	571-9-0	210	--	--	--

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D = Deck
P = Pool/Pool Deck
PP = Private Pier
RV = Rock Revetment

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ISLE OF PALMS – Sheet 168
Structural Inventory

Street/ Development	Tax Map Number	Parcel Number	(*) Structure Inventory	(**) Structure Location (ft)	(**) Erosion Control Structure
25th Ave	571-9-0	210	--	--	--
	571-9-0	211	--	--	--
	571-9-0	212	--	--	--
26th Ave	571-9-0	213	--	--	--
	571-9-0	177	--	--	--
	571-9-0	215	--	--	--
	571-9-0	216	--	--	--
	571-9-0	217	--	--	--
	571-9-0	218	--	--	--
27th Ave	571-9-0	219	--	--	--
	571-9-0	220	--	--	--
	571-9-0	221	--	--	--
	571-9-0	222	--	--	--
	571-9-0	223	--	--	--
	571-9-0	224	--	--	--
28th Ave	571-9-0	188	--	--	--
	571-9-0	226	--	--	--
	571-9-0	227	--	--	--
	571-9-0	228	--	--	--
	571-9-0	229	--	--	--
29th Ave	571-10-0	222	--	--	--
	571-10-0	223	--	--	--
	571-10-0	224	--	--	--
	571-10-0	184	--	--	--
	571-10-0	226	--	--	--
	571-10-0	227	--	--	--
	571-10-0	228	--	--	--
	571-10-0	188	--	--	--
13th Ave	571-10-0	255	--	--	--
	571-10-0	230	--	--	--
	571-10-0	231	--	--	--
	571-10-0	191	--	--	--
	571-10-0	233	--	--	--
	571-10-0	194	--	--	--

Note:* A = Habitable Structure <5,000 sq. ft
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C = Ancillary Building
D = Deck
P = Pool/Pool Deck
PP = Private Pier
RV = Rock Revetment

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ISLE OF PALMS – Sheet 169

Structural Inventory

Street/ Development	Tax Map Number	Parcel Number	(*) Structure Inventory	(**) Structure Location (ft)	(**) Erosion Control Structure
13th Ave	571-10-0	194	--	--	--
	571-10-0	235	--	--	--
	571-10-0	236	--	--	--
31st Ave	571-10-0	237	--	--	--
	571-10-0	238	--	--	--
	571-10-0	239	--	--	--
	571-10-0	240	--	--	--
32nd Ave	571-10-0	241	--	--	--
	571-10-0	202	--	--	--
	571-10-0	243	--	--	--
	571-10-0	244	--	--	--
	571-10-0	245	--	--	--
33rd Ave	571-10-0	246	--	--	--
	571-10-0	207	--	--	--
	571-10-0	248	--	--	--
	571-10-0	249	--	--	--
34th Ave	571-10-0	210	--	--	--
	571-10-0	251	--	--	--
	571-10-0	252	--	--	--
	571-10-0	253	--	--	--
35th Ave	571-11-0	201	--	--	--
	571-11-0	202	--	--	--
	571-11-0	203	--	--	--
	571-11-0	204	--	--	--
	571-11-0	205	--	--	--
36th Ave	571-11-0	206	--	--	--
	571-11-0	207	--	--	--

Note:* A = Habitable Structure <5,000 sq. ft
B = Habitable Structure >5,000 sq. ft.
C = Ancillary Building
D = Deck
P = Pool/Pool Deck
PP = Private Pier
RV = Rock Revetment

*** Distances Measured Seaward From OCRM 40-Year Setback Line*

Note: Distances relative to 40-year setback line were calculated using 2015 USGS aerial imagery and information from DHEC OCRM. Distances are approximate and actual distances may vary. If more accurate distances are required a field survey is recommended.

ISLE OF PALMS – Sheet 170
Structural Inventory

Street/ Development	Tax Map Number	Parcel Number	(*) Structure Inventory	(**) Structure Location (ft)	(**) Erosion Control Structure
36th Ave	571-11-0	207	--	--	--
	571-11-0	208	--	--	--
	571-11-0	151	--	--	--
37th Ave	571-11-0	210	--	--	--
	571-11-0	153	--	--	--
	571-11-0	154	--	--	--
	571-11-0	212	--	--	--
	571-11-0	213	--	--	--
38th Ave	571-11-0	214	--	--	--
	571-11-0	215	--	--	--
	571-11-0	216	--	--	--
	571-11-0	217	--	--	--
39th Ave	571-11-0	160	--	--	--
	571-11-0	161	--	--	--
	571-11-0	220	--	--	--
	571-11-0	163	--	--	--
40th Ave	571-11-0	222	--	--	--
	571-11-0	223	--	--	--
	571-11-0	166	--	--	--
	571-11-0	225	--	--	--
	571-11-0	226	--	--	--
41st Ave	571-12-0	183	--	--	--
42nd Ave	571-12-0	185	--	--	--
	571-12-0	186	--	--	--

Note:* A = Habitable Structure <5,000 sq. ft
B = Habitable Structure >5,000 sq. ft.
C = Ancillary Building
D = Deck
P = Pool/Pool Deck
PP = Private Pier
RV = Rock Revetment

*** Distances Measured Seaward From OCRM 40-Year Setback Line*

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ISLE OF PALMS – Sheet 171

Structural Inventory

Street/ Development	Tax Map Number	Parcel Number	(*) Structure Inventory	(**) Structure Location (ft)	(**) Erosion Control Structure
42nd Ave	571-12-0	186	--	--	--
43rd Ave	571-12-0	187	--	--	--
	571-12-0	188	--	--	--
44th Ave	571-12-0	189	--	--	--
	571-12-0	190	--	--	--
45th Ave	571-12-0	191	--	--	--
	571-12-0	192	--	--	--
46th Ave	571-12-0	70	--	--	--
	571-12-0	69	--	--	Buried(?) RV (+35)
47th Ave	571-12-0	195	--	--	Buried(?) RV (+45)
48th Ave	571-12-0	171	--	--	Buried(?) RV (+50)
	571-12-0	170	--	--	--
	571-12-0	198	--	--	--
	571-12-0	172	--	--	--
49th Ave	604-9-0	287	--	--	Buried(?) RV (+35)
	604-9-0	3	--	--	Buried(?) RV (+35)
50th Ave	604-9-0	289	--	--	Buried(?) RV (+30)

Note:* A = Habitable Structure <5,000 sq. ft
B = Habitable Structure >5,000 sq. ft.
C = Ancillary Building
D = Deck
P = Pool/Pool Deck
PP = Private Pier
RV = Rock Revetment

*** Distances Measured Seaward From OCRM 40-Year Setback Line*

Note: Distances relative to 40-year setback line were calculated using 2015 USGS aerial imagery and information from DHEC OCRM. Distances are approximate and actual distances may vary. If more accurate distances are required a field survey is recommended.

ISLE OF PALMS – Sheet 172

Structural Inventory

Street/ Development	Tax Map Number	Parcel Number	(*) Structure Inventory	(**) Structure Location (ft)	(**) Erosion Control Structure
50th Ave	604-9-0	289	--	--	Buried (?) RV (+30)
	604-9-0	290	--	--	Buried (?) RV (+30)
51st Ave	604-9-0	291	--	--	Buried (?) RV (+30)
	604-9-0	23	--	--	Buried (?) RV (+30)
52nd Ave	604-9-0	293	--	--	Buried (?) RV (+30)
	604-9-0	294	--	--	Buried (?) RV (+30)
53rd Ave	604-9-0	41	--	--	--
	604-9-0	48	--	--	--
54th Ave	604-9-0	49	--	--	--
	604-9-0	50	--	--	--
	604-9-0	57	--	--	--
	604-9-0	245	--	--	--
	604-9-0	58	--	--	--
	604-9-0	65	--	--	--
55th Ave	604-9-0	66	D	+10	--
	604-9-0	67	D	+5	--
	604-9-0	74	D	+15	--
	604-9-0	246	--	--	--
	604-9-0	177	D	+5	--
	604-9-0	178	F	+20	--
56th Ave	604-9-0	179	A, P	+30, +50	--
	604-9-0	180	B	+70	--

Note:* A = Habitable Structure <5,000 sq. ft
B = Habitable Structure >5,000 sq. ft.
C = Ancillary Building
D = Deck
P = Pool/Pool Deck
PP = Private Pier
RV = Rock Revetment

*** Distances Measured Seaward From OCRM 40-Year Setback Line*

Note: Distances relative to 40-year setback line were calculated using 2015 USGS aerial imagery and information from DHEC OCRM. Distances are approximate and actual distances may vary. If more accurate distances are required a field survey is recommended.

ISLE OF PALMS – Sheet 173

Structural Inventory

Street/ Development	Tax Map Number	Parcel Number	(*) Structure Inventory	(**) Structure Location (ft)	(**) Erosion Control Structure
56th Ave	604-9-0	179	A, P	+30, +50	--
	604-9-0	180	B	+70	--
	604-9-0	181	B	+70	--
	604-9-0	287	--	--	--
	604-10-0	7	--	--	--
	604-10-0	8	B	+60	--
57th Ave	604-10-0	9	B	+50	--
	604-10-0	10	B, D	+60, +80	--
	604-10-0	11	B, D	+60, +80	Buried (?) RV (+130)
Grand Pavilion	604-10-0	379/389	A	+10	--
	604-10-0	379/390	A	+15	--
	604-10-0	379/391	A	+25	--
	604-10-0	379/392	A	+30	--
	604-10-0	379/393	A	+30	--
	604-10-0	379/394	A	+35	--
	604-10-0	379/395	A	+35	--
	604-10-0	379/396	A	+40	--
	604-10-0	381/434	A	+60	--
	604-10-0	381/435	A	+65	--
	604-10-0	381/436	A	+65	--
	604-10-0	381/437	A	+70	--
	604-10-0	381/438	A	+75	--
	604-10-0	381/439	A	+80	--
	604-10-0	381	C, D, Px2	+140, 175, +130, +150	--
	604-10-0	381/455	A	+80	--
	604-10-0	381/456	A	+85	--
	604-10-0	381/457	A	+90	--
	604-10-0	381/458	A	+95	--
	604-10-0	381/459	A	+95	--
	604-10-0	381/460	A	+100	--

Note:* A = Habitable Structure <5,000 sq. ft
B = Habitable Structure >5,000 sq. ft.
C = Ancillary Building
D = Deck
P = Pool/Pool Deck
PP = Private Pier
RV = Rock Revetment

*** Distances Measured Seaward From OCRM 40-Year Setback Line*

Note: Distances relative to 40-year setback line were calculated using 2015 USGS aerial imagery and information from DHEC OCRM. Distances are approximate and actual distances may vary. If more accurate distances are required a field survey is recommended.

ISLE OF PALMS – Sheet 173 (cont.)

Structural Inventory

Street/ Development	Tax Map Number	Parcel Number	(*) Structure Inventory	(**) Structure Location (ft)	(**) Erosion Control Structure
Grand Pavilion	604-10-0	383/405	A	+100	--
	604-10-0	383/406	A	+100	--
	604-10-0	383/407	A	+105	--
	604-10-0	383/408	A	+110	--
	604-10-0	383/409	A	+110	--
	604-10-0	383/410	A	+115	RV (+260)
	604-10-0	383/411	A	+120	RV (+270)
	604-10-0	383/412	A	+120	RV (+275)
Seagrove Villas	604-10-0	Bldg 10	B	+215	RV (+285)
	604-10-0	Bldg 11	B	+205	RV (+285)
	604-10-0	Bldg 9	B	+110	RV (+285)
	604-10-0	Bldg 8	B	+55	RV (+285)
	604-10-0	Segrove	P	+195	RV (+320)
	604-10-0	Bldg 4	B	+85	
	604-10-0	Bldg 3	B	+145	
	604-10-0	Bldg 2	B	+245	
	604-10-0	Bldg 1	B	+260	
Beachwood East	604-10-0	34	A	+105	--
	604-10-0	35	A	+120	--
	604-10-0	28	A	+20	--
	604-10-0	36	A	+100	--
	604-10-0	37	A	+165	--
	604-10-0	38	B, P	+275, +305	RV (+335)
	604-10-0	39	B, D	+295, +320	RV (+350)
	604-10-0	40	A	+280	RV (+340)
	604-10-0	41	A	+260	WDS
	604-10-0	42	A	+245	WDS

Note:* A = Habitable Structure <5,000 sq. ft
B = Habitable Structure >5,000 sq. ft.
C = Ancillary Building
D = Deck
P = Pool/Pool Deck
PP = Private Pier
RV = Rock Revetment
WDS = Experimental Wave Dissipation System (May 2016)

*** Distances Measured Seaward From OCRM 40-Year Setback Line*

Note: Distances relative to 40-year setback line were calculated using 2015 USGS aerial imagery and information from DHEC OCRM. Distances are approximate and actual distances may vary. If more accurate distances are required a field survey is recommended.

ISLE OF PALMS – Sheet 174

Structural Inventory

Street/ Development	Tax Map Number	Parcel Number	(*) Structure Inventory	(**) Structure Location (ft)	(**) Erosion Control Structure
Beachwood East	604-10-0	41	A	+260	WDS
	604-10-0	42	A	+245	WDS
	604-10-0	43	A	+225	WDS
	604-10-0	44	A	+200	WDS
	604-10-0	45	A, P	+70, +95	--
	604-10-0	104	A	+30	--
	604-10-0	90	B, D	+175, +200	WDS
	604-10-0	91	B, D	+155, +185	WDS
	604-10-0	92	A	+135	WDS
	604-10-0	93	B	+115	L (+130), WDS
	604-10-0	94	A	+95	WDS
	604-10-0	95	A	+60	--
Dunecrest Lane	604-11-0	4	A	+65	--
	604-11-0	5	A, D	+55, +80	--
	604-11-0	6	B, D	+70, +105	--
	604-11-0	7	A	+65	--
	604-11-0	8	A, D	+40, +60	--
	604-11-0	9	A	+55	--
Beach Club Villas I	604-11-0	94 (105-112)	B	+55	--
	604-11-0	74 (75-82)	B	+70	--
WDCA Property Owners Beach House	604-11-0	211	C	+5	Buried RV (+95)

Note:* A = Habitable Structure <5,000 sq. ft
B = Habitable Structure >5,000 sq. ft.
C = Ancillary Building
D = Deck
P = Pool/Pool Deck
PP = Private Pier
RV = Rock Revetment
WDS = Experimental Wave Dissipation System (May 2016)
L = Timber Landscape Wall

***** Distances Measured Seaward From OCRM 40-Year Setback Line***

Note: Distances relative to 40-year setback line were calculated using 2015 USGS aerial imagery and information from DHEC OCRM. Distances are approximate and actual distances may vary. If more accurate distances are required a field survey is recommended.

ISLE OF PALMS – Sheet 175

Structural Inventory

Street/ Development	Tax Map Number	Parcel Number	(*) Structure Inventory	(**) Structure Location (ft)	(**) Erosion Control Structure
Beach Club Villas II	604-11-0	114 (127-134)	--	--	Buried RV (+60)
	604-11-0	114 (117-126)	--	--	Buried RV (+60)
	604-11-0	116	--	--	Buried RV (+60)
	604-11-0	115 (143-152)	--	--	Buried RV (+50)
	604-11-0	115 (135-142)	--	--	Buried RV (+45)
Mariners Walk	604-12-0	Mariners II	--	--	Buried RV (+10)
Shipwatch	604-12-0	Shipwatch	D	+90	--
Summer House	604-12-0	Summer House	B	+50	--
Summer Dunes Lane	604-12-0	505	--	--	--
	604-12-0	506	A	+80	--
	604-12-0	507	A	+80	--
	604-12-0	508	A	+80	--
	604-12-0	509	A	+80	--
Tidewater Villas	604-12-0	Bldg I	B	+5	--
	604-12-0	Pool deck	P	+5	--
	604-12-0	Pool Bldg	C	+20	--
Port O'Call	604-12-0	Bldg B	B	+35	--

Note:* A = Habitable Structure <5,000 sq. ft
B = Habitable Structure >5,000 sq. ft.
C = Ancillary Building
D = Deck
P = Pool/Pool Deck
PP = Private Pier
RV = Rock Revetment

*** Distances Measured Seaward From OCRM 40-Year Setback Line*

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ISLE OF PALMS – Sheet 176

Structural Inventory

Street/ Development	Tax Map Number	Parcel Number	(*) Structure Inventory	(**) Structure Location (ft)	(**) Erosion Control Structure
Port O' Call	604-12-0	Bldg B	B	+35	--
Port O'Call	604-12-0	Bldg F	B	+35	--
Seascape	604-12-0	Seascape	B	+30	WDS
Ocean Club	604-5-0	Bldg 9510	B	+20	WDS
Ocean Point	604-5-0	5	--	--	--
	604-5-0	174	--	--	--
	604-5-0	175	--	--	--
	604-5-0	176	--	--	--
	604-5-0	177	--	--	--
	604-5-0	178	--	--	--
	604-5-0	179	--	--	--
	604-5-0	180	--	--	--
	604-5-0	181	--	--	--
	604-5-0	182	--	--	--
	604-5-0	183	--	--	--
	604-5-0	86	--	--	--
	604-5-0	87	--	--	--
	604-5-0	88	--	--	--
	604-5-0	89	--	--	--
	604-5-0	90	D	+15	--
	604-5-0	91	D	+10	--
	604-5-0	92	D	+10	--
	604-5-0	93	D	+15	--
	604-5-0	94	A	+20	--
	604-5-0	95	A	+25	--
	604-5-0	96	A	+30	--
	604-5-0	97	A	+40	--
	604-5-0	98	A	+40	--
	604-5-0	99	A	+40	--

Note:* A = Habitable Structure <5,000 sq. ft
B = Habitable Structure >5,000 sq. ft.
C = Ancillary Building
D = Deck
P = Pool/Pool Deck
PP = Private Pier
RV = Rock Revetment
WDS = Experimental Wave Dissipation System (May 2016)

*** Distances Measured Seaward From OCRM 40-Year Setback Line*

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ISLE OF PALMS – Sheet 177
Structural Inventory

Street/ Development	Tax Map Number	Parcel Number	(*) Structure Inventory	(**) Structure Location (ft)	(**) Erosion Control Structure
Ocean Point	604-5-0	99	A	+40	--
	604-5-0	102	--	--	--
	604-5-0	103	--	--	--
	604-5-0	104	--	--	--
	604-5-0	105	--	--	--
	604-5-0	106	--	--	--
	604-5-0	107	--	--	--
	604-5-0	108	--	--	--
	604-5-0	109	--	--	--

Note:* A = Habitable Structure <5,000 sq. ft
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C = Ancillary Building
D = Deck
P = Pool/Pool Deck
PP = Private Pier
RV = Rock Revetment

**** ***Distances Measured Seaward From OCRM 40-Year Setback Line***

Note: Distances relative to 40-year setback line were calculated using 2015 USGS aerial imagery and information from DHEC OCRM. Distances are approximate and actual distances may vary. If more accurate distances are required a field survey is recommended.

Appendix 2. Maps

Appendix 2 Maps Previously provided in Application.

Additional Information

The applicant may submit additional information, including but not limited to letters of support, discussion of relevant nearby projects, studies, inventories, analysis, or planning documents discussing or applicable to the proposed project. Germane additional information received will be considered as part of the funding review process; however, additional information may not be used as a substitute for required information or documentation.

Letters of Support for the City's proposed project are included with this package. Also, the City has a demonstrated track record of recognized success with beach restoration having received the Distinction of **Best Restored Beach** from the American Shore and Beach Preservation Association and a **Municipal Achievement Award** from the Municipal Association of South Carolina for the public/private collaboration on the City's 2008 beach restoration project. In September 2016, the *Post and Courier* Choice Awards named Isle of Palms **Best Family Beach.**

The section related to discussion of relevant nearby projects, studies, inventories, analysis, or planning documents discussing or applicable to the proposed project is covered under the Appendices 1-4 previously referenced in the application.

Letters of Support

Fish, Game and Forestry Committee

GEORGE E. "CHIP" CAMPSEN III
CHAIRMAN

THE SENATE OF SOUTH CAROLINA
305 GRESSETTE OFFICE BUILDING
P.O. BOX 142
COLUMBIA, SOUTH CAROLINA 29202

BRIAN COHL
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ADMINISTRATIVE ASSISTANT

TEL: (803) 212-6340
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EMAIL: SFG@SCSENATE.GOV

February 13, 2017

Duane Parrish, Justin Hancock and members of the Review Committee
Beach Renourishment Funding Assistance Grant
South Carolina Department of Parks, Recreation & Tourism
1205 Pendleton Street, Suite 248
Columbia, SC 29201

Dear Messrs. Parrish and Hancock and Review Committee Members:

As a lifelong resident of the City of Isle of Palms, I am intensely familiar with the ebbs and flows of its beach and the actions associated with the periodic shoal attachment processes that cause chronic erosion at the inlets. I am also aware of the place this beach holds as a key contributor to the tourism industry.

The episodic erosion is most particularly acute at the eastern end of the island. This area, as well as other areas of beaches along unstable inlet zones, will require constant management to maintain a dry, sand beach. The City of Isle of Palms and its citizens are applauded for all that has been done to be good stewards of the beach. A dry sand beach at all tides is essential critical habitat for endangered species and is paramount to a healthy tourism industry.

I urge your favorable action regarding the City's $6.9 million grant request that will go towards its $15 million re-nourishment project. The City has been able to assemble approximately $2.8 million of its own citizens' funds, generated by tourism, along with a healthy contribution of approximately $5 million in private contributions. Please aid the City in closing the funding gap that will move this project from the planning phase to the construction phase.

Very truly yours,

Chip Campsen

Senator Chip Campsen

Mike Sottile
District No. 112 – Charleston County
132 Sparrow Drive
Isle of Palms, SC 29451
Tel. (843) 886-8759

Committee:
Ways and Means

Subcommittee:
Higher Education and Technical Colleges

House of Representatives
State of South Carolina

1105 Pendleton Street
310-A Blatt Building
Columbia, SC 29201
Tel. (803) 212-6880
Fax (803) 734-2925
Email: mikesottile@schouse.gov

February 13, 2017

Justin Hancock and Members of the Review Committee
Beach Renourishment Funding Assistance Grant
South Carolina Department of Parks, Recreation & Tourism
1205 Pendleton Street, Suite 248
Columbia, SC 29201

Dear PRT Team Members and Review Committee Members:

I am writing to urge the funding of the Isle of Palms Beach Restoration Project using SC PRT grant funds allocated for beach restoration. I was intensely involved with the City's 2008 Beach Restoration since I was Mayor of the City at that time. That project, like this one, involved multiple sources of funding at the local, state, county and private level in order to make the project a reality. Ultimately the project was successful and has won awards.

Unfortunately, due to the shoal attachment processes associated with the unstable inlet zones of the Isle of Palms, the beach will forever need periodic attention. The PRT funds are urgently needed to assist in the expense of restoring the heavily eroded eastern end of Isle of Palms. In certain areas of an approximately two (2) mile stretch of the beach, there is no dry sand beach at high tide. In response to the threat of storm wave action under residential structures, some homes and condominium complexes are armored with sandbags and/or wave dissipation devices.

Restoration of the beach, using sand harvested from offshore, will enable restoring critical habitat, returning the recreational beach enjoyed by the public and ensuring the economic health of tourism which is a critical industry to the State of South Carolina. It is for this reason that I have supported statewide funding for beach restoration and the allocation to PRT for this purpose. I would like to see some of that funding brought home to the district I serve. The wide, sandy beach will provide storm protection to commercial and residential structures enabling the removal of the unsightly sandbags and temporary wave dissipation devices.

Please award the total amount requested in grant funding to this worthwhile project. The City of Isle of Palms is proactive in taking care of its seven (7) miles of public beach. If funded, care will be taken to ensure a longevity and maximum stabilization of the dune habitat and the beach and dune system.

Very truly yours,

F. Michael Sottile
House of Representatives

Explore Charleston

September 12, 2016

Review Committee
Beach Renourishment Funding Assistance Grant
South Carolina Department of Parks, Recreation & Tourism
Attn. Justin Hancock
1205 Pendleton St. Suite 248
Columbia, SC 29205

Dear Review Committee:

On behalf of the Charleston Area Convention & Visitors Bureau, I am writing in full support of the Isle of Palms' application for a Beach Renourishment Assistance Grant. Tourism is the main source of economic activity on the island, and the health of this industry is dependent to a large degree on the condition of the beach itself.

The city has been diligent in its efforts to maintain and enhance this natural asset for the enjoyment of its residents and visitors, and as vital habitat for the animal species that depend on it – most notably endangered loggerhead turtles.

Funding support from SC PRT is essential to help stabilize and restore the beach to its normal state, ensuring that it continues as an economic, recreational and a natural asset for the region.

Sincerely,

Helen T. Hill
CEO

CHARLESTON AREA CONVENTION & VISITORS BUREAU
423 King Street | Charleston, South Carolina 29403 | 843.853.8000 | ExploreCharleston.com
@ExploreCharleston @ExploreCHS

August 29, 2016

Review Committee
Beach Renourishment Funding Assistance Grant
South Carolina Department of Parks, Recreation & Tourism
Attn: Justin Hancock
1205 Pendleton Street
Suite 248
Columbia, SC 29201

Dear Review Committee,

This letter is written in support of the City of Isle of Palms in their application for Beach Renourishment Assistance Grant. I am Project Leader for the Island Turtle Team which is a volunteer sea turtle nest protection program directed by the South Carolina Department of Natural Resources. My group of 165 volunteer workers and I have the task of finding and protecting the nests of endangered loggerhead turtles who use the sandy beach of the Isle of Palms each summer for laying their eggs.

For the last few nesting seasons nesting on our island has been compromised by eroded dunes and the presence of sandbags and experimental plastic walls on the beach. In order for this species to recover from its endangered state, it is necessary for the beach to be wide and free from these problems and encumbrances.

We fully support the application of the above grant proposal and are hoping that a renourishment project can be funded and accomplished and that the beach can be restored to its former stable nesting habitat.

Sincerely,

Mary Pringle, Project Leader
Island Turtle Team under SCDNR
713 Ocean Boulevard
Isle of Palms SC 29451

September 27, 2016

Review Committee
Beach Renourishment Funding Assistance Grant
South Carolina Department of Parks, Recreation & Tourism
Attn: Justin Hancock
1205 Pendleton Street
Suite 248
Columbia, SC 29201

Dear Review Committee Members:

I am writing to urge the funding of the Isle of Palms Beach Restoration Project using SC PRT funds allocated for beach restoration. These funds are urgently needed to assist in the expense of restoring the heavily eroded eastern end of Isle of Palms. In certain areas of an approximately two (2) mile stretch of the beach, there is no dry sand beach at high tide. In response to the threat of storm wave action under residential structures, some homes and condominium complexes are utilizing sandbags and/or wave dissipation devices.

Restoration of the beach, using sand harvested from offshore, will enable restoring critical habitat, returning the recreational beach enjoyed by the public and ensuring the economic health of tourism which is a critical industry to the State of South Carolina. The wide, sandy beach will provide storm protection to commercial and residential structures enabling the removal of the unsightly sandbags and temporary wave dissipation devices.

Please award grant funding to this worthwhile project. The City of Isle of Palms is proactive in taking care of its seven (7) miles of public beach. If funded, care will be taken to ensure longevity and maximum stabilization of the dune habitat and the beach and dune system.

Very truly yours,

Patrick B. O'Dell
9 Dunecrest Lane
Isle of Palms, SC

Wild Dunes
Charleston's Island Resort
A DESTINATION RESORT

5757 Palm Boulevard
Isle of Palms, SC 29451
p. 800.845.8880
f. 843.886.2916
wilddunes.com

September 27, 2016

Review Committee
Beach Renourishment Funding Assistance Grant
South Carolina Department of Parks, Recreation & Tourism
Attn: Justin Hancock
1205 Pendleton Street
Suite 248
Columbia, SC 29201

Dear Review Committee Members:

Wild Dunes Resort depends on the beach to drive annual revenue and taxes that benefit the city of Isle of Palms, Charleston County and the state of South Carolina. Recently, the College of Charleston's Office of Economic and Tourism Analysis estimated the resort's *annual direct* economic impact to be over $79MM. In addition, our business contributes over $10MM in state and local taxes annually. Further, the number one geographic source for our business is the state of South Carolina. We respectfully request that you approve the supplemental funding of the Isle of Palms Beach Restoration Project using SC PRT funds allocated for beach restoration. These funds are urgently needed to assist in the expense of restoring the heavily eroded eastern end of Isle of Palms.

Restoration of the beach, using sand harvested from offshore, will enable restoring critical habitat, returning the recreational beach enjoyed by the public and ensuring the economic health of tourism which is a critical industry to the State of South Carolina. A wide, sandy beach will also provide storm protection to commercial and residential structures enabling the removal of the unsightly sandbags and temporary wave dissipation devices.

Please award grant funding to this worthwhile project. The City of Isle of Palms is proactive in taking care of its seven (7) miles of public beach. If funded, care will be taken to ensure the longevity and maximum stabilization of the dune habitat and the beach and dune system.

Sincerely,

Frank Fredericks
Managing Director
(843) 886-2279

September 27, 2016

Review Committee
Beach Renourishment Funding Assistance Grant
South Carolina Department of Parks, Recreation & Tourism
Attn: Justin Hancock
1205 Pendleton Street
Suite 248
Columbia, SC 29201

Dear Review Committee Members:

I am writing to urge the funding of the Isle of Palms Beach Restoration Project using SC PRT funds allocated for beach restoration. These funds are urgently needed to assist in the expense of restoring the heavily eroded eastern end of Isle of Palms. In certain areas of an approximately two (2) mile stretch of the beach, there is no dry sand beach at high tide. In response to the threat of storm wave action under residential structures, some homes and condominium complexes are armored with sandbags and/or wave dissipation devices. It has been quite disheartening to see nearly 200 yards of beach disappear in front of our home at 20 Beachwood East these last 5 years and am quite certain a big storm would put our home at severe risk.

Over the last few years we have spent well north of $100,000 to protect our home and honestly short of a full renourishment, I do not see a way to protect our home. Please, please consider this – it is not just about safety, it is also about restoring critical habitat, returning the recreational beach enjoyed by the public and ensuring the economic health of tourism which is a critical industry to the State of South Carolina.

Please award grant funding to this worthwhile project. The City of Isle of Palms is proactive in taking care of its seven (7) miles of public beach. If funded, care will be taken to ensure a longevity and maximum stabilization of the dune habitat and the beach and dune system.

Very truly yours,

Lauren and Eric Kutcher
20 Beachwood East
Isle of Palms, SC 29451

Linda Tucker

From:	eric_kutcher@mckinsey.com
Sent:	Tuesday, September 27, 2016 1:59 PM
To:	ltucker@iop.net
Cc:	laurenkutcher@yahoo.com
Subject:	beach Renourishment - IOP
Attachments:	20160927 Beach Renouishment Letter.docx

Linda,

Please find a letter from my wife and I encouraging funding of the beach renourishment on the IOP. If any further discussion would be helpful, please do let us know as we would be delighted to express our strong support

Best
EK

Eric Kutcher
Senior Partner
McKinsey & Company
Office: (650) 842-8037
Fax: (650) 842-8237

(See attached file: 20160927 Beach Renouishment Letter.docx)

September 27, 2016

Review Committee
Beach Renourishment Funding Assistance Grant
South Carolina Department of Parks, Recreation & Tourism
Attn: Justin Hancock
1205 Pendleton Street
Suite 248
Columbia, SC 29201

Dear Review Committee Members:

I am writing to urge the funding of the Isle of Palms Beach Restoration Project using SC PRT funds allocated for beach restoration. These funds are urgently needed to assist in the expense of restoring the heavily eroded eastern end of Isle of Palms. In certain areas, especially Beachwood East, there is no dry sand beach at high tide. In response to the threat of storm wave action under residential structures, some homes, including ours and our neighbors on Beachwood East, and condominium complexes, are armored with sandbags and/or wave dissipation devices.

Restoration of the beach, using sand harvested from offshore, will restore the beach to the public and ensure the economic health of tourism which is a critical industry to the State of South Carolina. The wide, sandy beach will provide storm protection to commercial and residential structures enabling the removal of the unsightly sandbags and the necessity of temporary wave dissipation devices.

Please award grant funding to this worthwhile project. The City of Isle of Palms is proactive in taking care of its seven (7) miles of public beach. If funded, it will be able to help ensure a longevity and maximum stabilization of the dune habitat and the beach and dune system.

Very truly yours,

Carole Slotchiver

Carole Slotchiver
12 Beachwood East
Isle of Palms, SC

September 27, 2016

Review Committee
Beach Renourishment Funding Assistance Grant
South Carolina Department of Parks, Recreation & Tourism
Attn: Justin Hancock
1205 Pendleton Street
Suite 248
Columbia, SC 29201

Dear Review Committee Members:

I am writing to urge the funding of the Isle of Palms Beach Restoration Project using SC PRT funds allocated for beach restoration. These funds are urgently needed to assist in the expense of restoring the heavily eroded eastern end of Isle of Palms. In certain areas of an approximately two (2) mile stretch of the beach, there is no dry sand beach at high tide. In response to the threat of storm wave action under residential structures, some homes and condominium complexes are armored with sandbags and/or wave dissipation devices.

Restoration of the beach, using sand harvested from offshore, will enable restoring critical habitat, returning the recreational beach enjoyed by the public and ensuring the economic health of tourism which is a critical industry to the State of South Carolina. The wide, sandy beach will provide storm protection to commercial and residential structures enabling the removal of the unsightly sandbags and temporary wave dissipation devices.

Please award grant funding to this worthwhile project. The City of Isle of Palms is proactive in taking care of its seven (7) miles of public beach. If funded, care will be taken to ensure a longevity and maximum stabilization of the dune habitat and the beach and dune system.

Very truly yours,

Bob and Lori Ash
93 Seaside Cottage Lane
Isle of Palms, SC 29451

Linda Tucker

From:	Michael Safdi <msafdi@gmail.com>
Sent:	Wednesday, September 28, 2016 12:20 AM
To:	Linda Tucker
Cc:	Rosemary Safdi; msafdi@gmail.com
Subject:	Beach Renourishment project financial support

September 27, 2016

Review Committee

Beach Renourishment Funding Assistance Grant

South Carolina Department of Parks, Recreation & Tourism

Attn: Justin Hancock

1205 Pendleton Street

Suite 248

Columbia, SC 29201

Dear Review Committee Members:

I am writing to urge the funding of the Isle of Palms Beach Restoration Project using SC PRT funds allocated for beach restoration. These funds are urgently needed to assist in the expense of restoring the heavily eroded eastern end of Isle of Palms. We've owned our house since 1991 and have been through 3 separate severe erosion cycles. This is the worst. However, draconian changes in SC law have made it worse in preventing common sense and scientifically informed approaches to protecting beachfront properties. This will only worsen with further global warming resulting in rising sea levels. It doesn't make economic sense for the State of South Carolina to ignore the pending destruction resulting in severe tourism diminution and shrinking revenues. In our area of beach there is no dry sand beach at high tide. In 1995 - 1997 we were only permitted to dump beach compatible upland sand and watch it wash away after the next high tide. This resulted in the absolutely predictable flooding of our lot all the way to the street. After elevating the lot with 5 feet of sand, we rebuilt our home between 2004 - 2006. Now DHEC/OCRM tells us that we could be forced to tear down our home if the beach becomes "active". We have no reasonable recourse for permanent protection so our neighbors and we have armored with sandbags and a wave dissipation system (WDS). This prevents direct access to the beach but it has helped temporarily halt erosion which had taken over 3/4 of all our yards/property. Recently OCRM mandated removal of the WDS after unfounded complaints from 2 environmental groups. We had to sue at great expense just to get a temporary reprieve until the data on the WDS is officially reviewed in December. The OCRM decision and ruling was issued despite the fact that the SCDNR stated that there was no increase in false crawls of our loggerhead turtles. This was supported by the local "Turtle Brigade" observations

and support for whatever was necessary to restore and protect the dunes. The complaints received by OCRM were from state and national organizations neither of whom actually observed the beach as regularly (if at all?) as the residents and local turtle volunteers.

Restoration of the beach, using sand harvested from offshore, will enable restoring critical habitat, returning the recreational beach enjoyed by the public and ensuring the economic health of tourism which is a critical industry to the State of South Carolina. The wide, sandy beach and rebuilt dunes will provide storm protection to commercial and residential structures. Given the inevitability of a repeat cycle of erosion with the sea level rising, it makes sense to address this now with a long range financial and coastal engineering solution. It would be helpful if a simultaneous inclusive and representative commission were established to scientifically rather than emotionally study the problem and propose potential solutions. As near as I can tell, the environmentalists (of which I am one) have dominated policy making for coastal management over the last 28 years. It's time to examine their results with an eye to the future of rising sea levels not anticipated in 1988 when the rules were reset with the passage of a new act.

Please award grant funding to this worthwhile project. The City of Isle of Palms has become proactive in taking care of its seven (7) miles of public beach with a new tax that was supported in an election. I'm confident we will track the results of this renourishment project and compare it to the ones done in 2008 and 2014 to learn how we can improve the outcome longevity. We have consultants in place with good data covering decades to serve that purpose. Perhaps we already should have learned something from the difference in the 2 previous projects with the second (2014) being an abysmal failure. The administration of our City is committed to good stewardship and preservation of our heretofore superb beaches. I'm certain they will take great care to make this the best renourishment project ever done in South Carolina.

Sincerely,
Mike
and Rosemary Safdi

Michael Safdi MD, MACG, FACP, FASGE
msafdi@gmail.com
17 Beachwood East
Isle of Palms, SC 29451
843-886-5402

10/12/16

Review Committee
Beach Renourishment Funding Assistance Grant
South Carolina Department of Parks, Recreation and Tourism
Attn: Justin Hancock
1205 Pendleton Street
Suite 248
Columbia, SC 29201

Dear Review Committee Members:

I am writing to you to urge funding for the Isle of Palms Beach Restoration Project using SC PRT funds. As an oceanfront property owner in Wild Dunes we have seen the beach erode away to the extent that there is no dry beach at high tide. In addition many properties look to be in danger of washing into the ocean. Restoration of the beach using sand pumped in from offshore like what was done in 2008 will allow the beach to be enjoyed at all times by both locals and tourist visiting the Charleston area as well as preserve the natural habitat for many creatures. Charleston has become one of the top tourist destinations in the US and the beaches are one of the biggest reasons for this. Pease award grant funding for this worthy project as the City of Isle of Palms is also working on this project.

Thank you for your support.

Mason Menard
214 Deer Run Lane
Greenwood, SC 29646

Linda Tucker

From: william longfield <nwlongfield@aol.com>
Sent: Wednesday, September 28, 2016 2:26 PM
To: ltucker@iop.net
Subject: beach restoration

Review Committee
Beach Renourishment Funding Assistance Grant South Carolina Department of Parks, Recreation and Tourism
Attn: Justin Hancock
1205 Pendleton Street
Suite 248
Columbia, SC 29201

Dear Review Committee Members:

I have my home on the beach in Isle of Palms. Over the past two years I have sustained over $25,000 in damage to my home and this amount grows with each high tide. This has been caused by the natural erosion of the beach caused by storms, strong waves and poor decisions by the state office of OCRM. Currently there are no sand dunes between my home and the ocean which is actually under my porch.

We need assistance in correcting this problem and a beach restoration of sand harvested offshore will help us return the beach to a state where our homes, wildlife and recreational use can once again exist on this beautiful island.

I ask you to please award funding to this very worthwhile project and join the City of the Isle of Palms in returning the beach to its previous condition. This will allow us to remove our sandbags and wave dispersion devices and repair our homes and those visiting our island to enjoy its beaches.

Sincerely,

William H. Longfield
16 Beachwood East
Isle of Palms, SC 29451

Linda Tucker

From: Mwg594@aol.com
Sent: Wednesday, September 28, 2016 1:34 PM
To: ltucker@iop.net
Subject: Beach Restoration project

Dear Ms. Tucker:
I am a homeowner on the Isle of Palms and am writing to support funding of the Isle of Palms Beach Restoration project using SC PRT funds allocated for this purpose. In the past ten years that I have owned this property, I have seen significant beach erosion on the eastern end of the Isle of Palms to the point that at high tide, there are several stretches of beach that are totally inaccessible to residents and visitors. Obviously, this is a serious threat to recreational beach use, wildlife habitat, resident safety as well as property value.
Restoration of the beach will provide storm protection to these very vulnerable areas and will enable the removal of unsightly sandbags and other such temporary fixes. Please award grant funding to this worthwhile project!
Sincerely,
Mindy Goldman
Shipwatch Condominiums
Unit 308
Isle of Palms, SC 29451

Linda Tucker

From: Sheryl <sherylreynolds5@hotmail.com>
Sent: Tuesday, September 27, 2016 7:43 PM
To: ltucker@iop.net
Subject: Beach Restoration

September 27, 2016

Review Committee
Beach Renourishment Funding Assistance Grant
South Carolina Department of Parks, Recreation & Tourism
Attn: Justin Hancock
1205 Pendleton Street
Suite 248
Columbia, SC 29201

Dear Review Committee Members:

I am writing to urge the funding of the Isle of Palms Beach Restoration Project using SC PRT funds allocated for beach restoration. These funds are urgently needed to assist in the expense of restoring the heavily eroded eastern end of Isle of Palms. In certain areas of an approximately two (2) mile stretch of the beach, there is no dry sand beach at high tide. In response to the threat of storm wave action under residential structures, some homes and condominium complexes are armored with sandbags and/or wave dissipation devices.

Restoration of the beach, using sand harvested from offshore, will enable restoring critical habitat, returning the recreational beach enjoyed by the public and ensuring the economic health of tourism which is a critical industry to the State of South Carolina. The wide, sandy beach will provide storm protection to commercial and residential structures enabling the removal of the unsightly sandbags and temporary wave dissipation devices.

Please award grant funding to this worthwhile project. The City of Isle of Palms is proactive in taking care of its seven (7) miles of public beach. If funded, care will be taken to ensure a longevity and maximum stabilization of the dune habitat and the beach and dune system.

Very truly yours,

Sheryl Reynolds

Sent from my iPad

Linda Tucker

From: Patricia Copeland <pcopeland1947@gmail.com>
Sent: Monday, October 03, 2016 7:56 AM
To: Linda Tucker
Subject: IOP beach restoration

Review Committee Beach Renourishment Funding Assistance Grant South Carolina Department of Parks, Recreation and Tourism Attention : Justin Hancock
1205 Pendleton Street
Suite 248
Columbia, South Carolina 29201
Dear Review Committee Members,
As you know, the beach on the Isle of Palms is in desperate need of sand renourishment. There is no need to repeat the needs of the city,Wild Dunes or the community that enjoys our wonderful beaches. So I am appealing for the replenishing of sand as a home owner. Our home is in the worst part of the erosion. We are at 8 Beachwood East. We are retired and spend almost half our time there. This is our home not a rental or something we bought as an investment. We love our home and so enjoy being there.
We have not been able to get to the beach in over a year using our steps. There isn't much left of them. We certainly hope our beach can be restored and you will please award grant funding for this project.
Sincerely,
Patricia Copeland

Sent from my iPad=

September 30, 2016

Review Committee
Beach Renourishment Funding Assistance Grant
South Carolina Department of Parks, Recreation & Tourism
Attn: Justin Hancock
1205 Pendleton Street
Suite 248
Columbia, SC 29201

Dear Review Committee Members:

I live on the Isle of Palms and regularly walk on the beach. For the last year, I have been unable to walk on parts of the beach because of the severe beach erosion. I am writing to urge the funding of the Isle of Palms Beach Restoration Project using SC PRT funds allocated for beach restoration. These funds are urgently needed to assist in the expense of restoring the heavily eroded eastern end of Isle of Palms. Some homeowners and condominium regimes have placed sandbags and/or wave dissipation devices in an attempt to protect their properties. These are, at best, very short term temporary measures.

A much more comprehensive effort is required to restore the beach. Sand harvested from offshore will restore the beach and guarantee that it can be enjoyed by the public. A healthy beach has a huge impact on tourism and hence the local economy. A wide, sandy beach will provide storm protection to commercial and residential structures enabling the removal of the unsightly sandbags and temporary wave dissipation devices. Their removal is important in attracting future tourists to our beach.

Please award grant funding to this worthwhile project. The City of Isle of Palms has been and continues to be proactive in taking care of its seven miles of public beach. SC PRT funds are urgently needed for them to continue this worthwhile effort.

Very truly yours,

Carl G. Love
71 Ocean Point Drive
Isle of Palms, SC 29451

September 29, 2016

Review Committee
Beach Renourishment Funding Assistance Grant
South Carolina Department of Parks, Recreation & Tourism (SC PRT)
1205 Pendleton Street
Suite 248
Columbia, SC 29201

Attn: Justin Hancock

Dear Committee Members:

I am writing on behalf of my ten owners in Shipwatch, Wild Dunes, Isle of Palms, to support the funding of the Isle of Palms Beach Restoration Project using SC PRT funds allocated for beach restoration. These funds are urgently needed to assist in the expense of restoring the heavily eroded eastern end of Isle of Palms. In certain areas of an approximately two (2) mile stretch of the beach, there is no dry sand beach at high tide. In response to the threat of storm wave action under residential structures, some homes and condominium complexes have installed sandbags and/or approved temporary wave dissipation devices.

Restoration of the beach, using sand harvested from offshore, will enable restoring critical habitat, returning the recreational beach enjoyed by the public and benefitting the economic health of tourism which is a critical industry to the State of South Carolina. The restored beach will also provide storm protection for both beachfront commercial and residential structures.

You are requested to grant funding to this project. The City of Isle of Palms has proven to be proactive in taking care of its seven (7) miles of public beach. When funded, care will be taken to ensure a longevity and maximum stabilization of the dune habitat and the beach and dune system.

Best Regards,

Randy P. Simpson
Managing Partner
Sun & Sand, LLC
Shipwatch C-114

Paul Friedberg

5 Dunecrest Lane

Isle Of Palms, South Carolina 29451

September 28, 2016

Review Committee

Beach Renourishment Funding Assistance Grant

South Carolina Department of Parks, Recreation & Tourism

Attn: Justin Hancock

1205 Pendleton Street

Suite 248

Columbia, SC 29201

Dear Review Committee Members:

I am writing to urge the funding of the Isle of Palms Beach Restoration Project using SC PRT funds allocated for beach restoration. These funds are urgently needed to assist in the expense of restoring the heavily eroded eastern end of Isle of Palms. In certain areas of an approximately two (2) mile stretch of the beach, there is no dry sand beach at high tide. In response to the threat of storm wave action under residential structures, some homes and condominium complexes are armored with sandbags and/or wave dissipation devices.

Restoration of the beach, using sand harvested from offshore, will enable restoring critical habitat, returning the recreational beach enjoyed by the public and ensuring the economic health of tourism which is a critical industry to the State of South Carolina. The wide, sandy beach will provide storm protection to commercial and

residential structures enabling the removal of the unsightly sandbags and temporary wave dissipation devices.

Please award grant funding to this worthwhile project. The City of Isle of Palms is proactive in taking care of its seven (7) miles of public beach. If funded, care will be taken to ensure a longevity and maximum stabilization of the dune habitat and the beach and dune system.

Very truly yours,

Paul Tinsley

September 29, 2016

Review Committee
Beach Renourishment Funding Assistance Grant
South Carolina Department of Parks, Recreation & Tourism
Attn: Justin Hancock
1205 Pendleton Street
Suite 248
Columbia, SC 29201

Dear Review Committee Member:

As President of the Board of Directors of the Seascape Villas Homeowners Association on Isle of Palms, I am writing to urge the funding of the Isle of Palms Beach Restoration Project using SC PRT funds allocated for beach restoration. These funds are urgently needed to supplement the funding for restoring the heavily eroded northeastern end of Isle of Palms, where Seascape Villas is located. In certain areas of an approximately two-mile stretch of the beach, there is no dry sand beach at high tide. In response to the threat of storm wave action under residential structures, some condominium complexes, including my own Seascape Villas, and single-family homes have been protected temporarily with sandbags and/or wave dissipation devices.

An adequately funded restoration project will have far-reaching environmental, social, and economic benefits well beyond the cost of the project. Use of sand dredged from offshore will rebuild critical and viable onshore habitat, including expanding potential nesting sites for the loggerhead sea turtle, improve and expand the recreational beach enjoyed by the public, and ensure that tourism in the State of South Carolina enjoys continued economic health. A new wide, sandy beach will provide storm protection to commercial and residential structures allowing the removal of the temporary wave dissipation structures and the unsightly and inadequate sandbags.

The City of Isle of Palms has always been active in taking care of its seven miles of public beach. From experience I know that Isle of Palms will take every possible measure to ensure maximum stabilization of the dune habitat and the overall beach and dune ecosystem. Please give consideration to awarding grant funding to this worthwhile project.

Respectfully,

Harry Stumpf

Harry Stumpf
President, Board of Directors
Seascape Villas Homeowners Association
Isle of Palms
stumpfhg@aol.com

September 27, 2016

Review Committee
Beach Renourishment Funding Assistance Grant
South Carolina Department of Parks, Recreation & Tourism
Attn: Justin Hancock
1205 Pendleton Street
Suite 248
Columbia, SC 29201

Dear Review Committee Members:

I am writing to urge the funding of the Isle of Palms Beach Restoration Project using SC PRT funds allocated for beach restoration. The funds are greatly needed to keep the tourism coming and we all know what that has done for the State of South Carolina.

Please award grant funding for this project so we can keep the money flowing into South Carolina.

Sincerely,

Neil Schneider
Mount Pleasant

Linda Tucker

From:	Reynolds, Randy <rreynolds@pershing.com>
Sent:	Thursday, September 29, 2016 1:17 PM
To:	ltucker@iop.net
Cc:	Sheryl Reynolds (sherylreynolds5@hotmail.com)
Subject:	Beach Renourishment Funding Assistance Grant

September 27, 2016

Review Committee
Beach Renourishment Funding Assistance Grant
South Carolina Department of Parks, Recreation & Tourism
Attn: Justin Hancock
1205 Pendleton Street
Suite 248
Columbia, SC 29201

Dear Review Committee Members:

I am writing to urge the funding of the Isle of Palms Beach Restoration Project using SC PRT funds allocated for beach restoration. These funds are urgently needed to assist in the expense of restoring the heavily eroded eastern end of Isle of Palms. In certain areas of an approximately two (2) mile stretch of the beach, there is no dry sand beach at high tide. In response to the threat of storm wave action under residential structures, some homes and condominium complexes are armored with sandbags and/or wave dissipation devices.

Restoration of the beach, using sand harvested from offshore, will enable restoring critical habitat, returning the recreational beach enjoyed by the public and ensuring the economic health of tourism which is a critical industry to the State of South Carolina. The wide, sandy beach will provide storm protection to commercial and residential structures enabling the removal of the unsightly sandbags and temporary wave dissipation devices.

Please award grant funding to this worthwhile project. The City of Isle of Palms is proactive in taking care of its seven (7) miles of public beach. If funded, care will be taken to ensure a longevity and maximum stabilization of the dune habitat and the beach and dune system.

Very truly yours,
Randall Reynolds
74 Grand Pavilion

September 29, 2016

Review Committee
Beach Renourishment Funding Assistance Grant
South Carolina Department of Parks, Recreation & Tourism
Attn: Justin Hancock
1205 Pendleton Street
Suite 248
Columbia, SC 29201

Dear Review Committee Members:

We are writing to urge the funding of the Isle of Palms Beach Restoration Project using SC PRT funds allocated for beach restoration. These funds are urgently needed to assist in the expense of restoring the heavily eroded eastern end of Isle of Palms. We first visited in 2006 and loved the beauty and spirit of the area, enough to want to invest our money and time here. We've owned our house since 2009 and soon after saw significant erosion occurring on the beach immediately in front of our house.

Isle of Palms is a resort and beach community which has had a positive economic impact on the area and State. SC law prevents the use of common sense and scientifically informed approaches to protect the beautiful beaches and their abutting properties. Along with many for our neighbors we have invested in sandbags and a wave dissipation system (WDS), they have provided temporary halting of the erosion. We all fear for the future of our homes if we are not allowed to seek better solutions to combat the erosion, such as a beach renourishment program.

Recently OCRM mandated removal of the WDS after unfounded complaints from two environmental groups. We had to sue at great expense just to get a temporary reprieve until the data on the WDS is officially reviewed in December. The OCRM decision and ruling was issued despite the fact that the SCDNR stated that there was no increase in false crawls of our loggerhead turtles. This was supported by the local "Turtle Brigade" observations and support for whatever was necessary to restore and protect the dunes. The complaints received by OCRM were from state and national organizations neither of whom actually observed the beach as regularly (if at all?) as the residents and local turtle volunteers.

Restoration of the beach, using sand harvested from offshore, will enable restoring critical habitat, returning the recreational beach enjoyed by the public and ensuring the economic health of tourism which is a critical industry to the State of South Carolina. The wide, sandy beach and rebuilt dunes will provide storm protection to commercial and residential structures.

Please award grant funding to this worthwhile project. The City of Isle of Palms has become proactive in taking care of its seven (7) miles of public beach with a new tax that was supported in an election. The administration of our City is committed to good stewardship and preservation of our heretofore superb beaches. I'm certain they will take great care to make this the best renourishment project ever done in South Carolina.

Sincerely,

Paul and Gail Conway
11 Beachwood East
Isle of Palms, SC

Philip & Jennifer Grennan
7600 Palmetto Drive, C420 AND 9000 Palmetto Drive A104
Isle of Palms, SC 29451
269-598-3718

September 28, 2016

Review Committee
Beach Renourishment Funding Assistance Grant
South Carolina Department of Parks, Recreation & Tourism
Attn: Justin Hancock
1205 Pendleton Street, Suite 248
Columbia, SC 29201

Dear Review Committee Members:

I am writing to urge the funding of the Isle of Palms Beach Restoration Project using SC PRT funds allocated for beach restoration. These funds are urgently needed to assist in the expense of restoring the heavily eroded eastern end of Isle of Palms. In certain areas of an approximately two (2) mile stretch of the beach, there is no dry sand beach at high tide. In response to the threat of storm wave action under residential structures, some homes and condominium complexes are armored with sandbags and/or wave dissipation devices. This situation is causing significant harm to the island, property values and tourism.

Restoration of the beach, using sand harvested from offshore, will enable restoring critical habitat, returning the recreational beach enjoyed by the public and ensuring the economic health of tourism which is a critical industry to the State of South Carolina. The wide sandy beach will provide storm protection to commercial and residential structures enabling the removal of the unsightly sandbags and temporary wave dissipation devices.

Please award grant funding to this worthwhile project. The City of Isle of Palms is proactive in taking care of its seven (7) miles of public beach. If funded, care will be taken to ensure a longevity and maximum stabilization of the dune habitat and the beach and dune system.

Very truly yours,

Philip & Jennifer Grennan

Linda Tucker

From:	karlar77@aol.com
Sent:	Wednesday, September 28, 2016 4:29 PM
To:	ltucker@iop.net
Subject:	Isle of Palms Beach Restoration Funding

September 27, 2016

Review Committee
Beach Renourishment Funding Assistance Grant
South Carolina Department of Parks, Recreation & Tourism
Attn: Justin Hancock
1205 Pendleton Street
Suite 248
Columbia, SC 29201

Dear Review Committee Members:

We are writing to urge the funding of the Isle of Palms Beach Restoration Project using SC PRT funds allocated for beach restoration. These funds are urgently needed to assist in the expense of restoring the heavily eroded eastern end of Isle of Palms. In certain areas of an approximately two (2) mile stretch of the beach, there is no dry sand beach at high tide. In response to the threat of storm wave action under residential structures, some homes and condominium complexes are armored with sandbags and/or wave dissipation devices.

Restoration of the beach, using sand harvested from offshore, will enable restoring critical habitat, returning the recreational beach enjoyed by the public and ensuring the economic health of tourism which is a critical industry to the State of South Carolina. The wide, sandy beach will provide storm protection to commercial and residential structures enabling the removal of the unsightly sandbags and temporary wave dissipation devices.

Please award grant funding to this worthwhile project. The City of Isle of Palms is proactive in taking care of its seven (7) miles of public beach. If funded, care will be taken to ensure a longevity and maximum stabilization of the dune habitat and the beach and dune system.

Very truly yours,

Lawrence and Karen Steinhauser
Owners of C-316 Shipwatch

September 27, 2016

Review Committee
Beach Renourishment Funding Assistance Grant
South Carolina Department of Parks, Recreation & Tourism
Attn: Justin Hancock
1205 Pendleton Street-Suite 248
Columbia, SC 29201

Dear Review Committee Members:

I am writing to urge the funding of the Isle of Palms Beach Restoration Project using SC PRT funds allocated for beach restoration. These funds are urgently needed to assist in the expense of restoring the heavily eroded eastern end of Isle of Palms. In certain areas of an approximately two (2) mile stretch of the beach, there is no dry sand beach at high tide. In response to the threat of storm wave action under residential structures, some homes and condominium complexes are armored with sandbags and/or wave dissipation devices. Our homes are at risk of falling into the ocean.

We desperately need your help funding the restoration of the beach, using sand harvested from offshore, will enable restoring critical habitat, returning the beach enjoyed by the public and ensuring tourists still come to our beaches- which is a critical industry to the State of South Carolina. Especially during hurricane season, we need a beach that will provide storm protection to commercial and residential structures enabling the removal of the unsightly sandbags and temporary wave dissipation devices.

I urge you to please award grant funding to this important project. The City of Isle of Palms is proactive in taking care of its seven (7) miles of public beach. If funded, care will be taken to ensure a longevity and maximum stabilization of the dune habitat and the beach and dune system.

Very truly yours,
MaryKay Kopf
9000 Palmetto Dr
No. 304F
Isle of Palms, SC 29451

LAW OFFICES

YOUNG, HASKINS, MANN, GREGORY, McGARRY & WALL

A PROFESSIONAL CORPORATION

JAMES W. HASKINS
ROBERT W. MANN*
JOHN L. GREGORY, III
JAMES R. McGARRY
SCOTT C. WALL

400 STARLING AVENUE
POST OFFICE BOX 72
MARTINSVILLE, VIRGINIA 24114-0072
ATTORNEYS@YOUNGHASKINS.COM

R.R. (JIM) YOUNG, JR.
(1922-1995)

PHONE (276) 638-2367
FAX (276) 638-1214

JOHN L. GREGORY DIRECT EMAIL:
GREGORY@YOUNGHASKINS.COM

September 28, 2016

Review Committee
Beach Renourishment Funding Assistance Grant
South Carolina Department of Parks, Recreation & Tourism
Attn: Justin Hancock
1205 Pendleton Street
Suite 248
Columbia, SC 29201

Dear Ladies and Gentlemen:

I am writing to request your approval of funding of the Isle of Palms Beach Restoration Project using SC PRT funds allocated for beach restoration. I have owned interests in properties along South Carolina beaches since before Hurricane Hugo back in the late 1980's, and I have seen the vast improvements resulting from renourishment projects.

As you know, many areas of the beach at Isle of Palms have little if any sand left. I strongly feel that the project will be of significant benefit for years to come, not only to the affected landowners whose properties may adjoin the beach, but also the public in general. The benefits of the project will be both economic and social.

I would therefore respectfully request that you approve the funding of this project.

Thank you very much for your consideration, and if you have any questions or wish to discuss this matter, please do not hesitate to contact me.

Very truly yours,

John L. Gregory, III

JLG III:pjn

Linda Tucker

From:	Jim Bolt <jimbolt07@gmail.com>
Sent:	Wednesday, September 28, 2016 2:10 PM
To:	ltucker@iop.net
Cc:	Steve Morrison
Subject:	IOP Renourishment

September 27, 2016

Review Committee
Beach Renourishment Funding Assistance Grant
South Carolina Department of Parks, Recreation & Tourism
Attn: Justin Hancock
1205 Pendleton Street
Suite 248
Columbia, SC 29201

Dear Review Committee Members:

I am writing to urge the funding of the Isle of Palms Beach Restoration Project using SC PRT funds allocated for beach restoration. These funds are urgently needed to assist in the expense of restoring the heavily eroded eastern end of Isle of Palms. In certain areas of an approximately two (2) mile stretch of the beach, there is no dry sand beach at high tide. In response to the threat of storm wave action under residential structures, some homes and condominium complexes are armored with sandbags and/or wave dissipation devices.

Restoration of the beach, using sand harvested from offshore, will enable restoring critical habitat, returning the recreational beach enjoyed by the public and ensuring the economic health of tourism which is a critical industry to the State of South Carolina. The wide, sandy beach will provide storm protection to commercial and residential structures enabling the removal of the unsightly sandbags and temporary wave dissipation devices.

This is a big economic issue for South Carolina and Isle of Palms. Please award grant funding to this worthwhile project. The City of Isle of Palms is proactive in taking care of its seven (7) miles of public beach. If funded, care will be taken to ensure a longevity and maximum stabilization of the dune habitat and the beach and dune system.

Very truly yours,

Jim Bolt
6400 Palmetto Drive, Unit 28
Isle of Palms, SC 29451

September 28, 2016

Review Committee
Beach Renourishment Funding Assistance Grant
South Carolina Department of Parks, Recreation & Tourism
Attn: Justin Hancock
1205 Pendleton Street
Suite 248
Columbia, SC 29201

Dear Review Committee Members:

Over the course of the past few years, we have personally witnessed the devastating erosion of the Isle of Palms beach and protective dunes. The erosion has adversely affected wildlife and dune habitat, has impacted the beach experience and tourism, and also threatened properties along the beachfront.

Restoration of the beach, using sand harvested from offshore, will create an environment for the return and stabilization of the dunes and their natural habitat, renew the recreational beach enjoyed by the public and provide a boost to tourism. The re-established beach and dune system will provide protection to commercial and residential properties.

I urge you to fund the Isle of Palms Beach Restoration Project using SC PRT funds allocated for beach restoration. These funds are urgently needed to assist in the expense of restoring the Isle of Palms beach. Please award grant funding to this worthwhile project to ensure a longevity and maximum stabilization of the beach and dunes.

Very truly yours,

Jaime H. Binsted

Stan & Jaime Binsted
9000 Palmetto Drive, 303F
Isle of Palms, SC

Restoration of the beach, using sand harvested from offshore, will enable restoring critical habitat, returning the recreational beach enjoyed by the public and ensuring the economic health of tourism which is a critical industry to the State of South Carolina. The wide, sandy beach will provide storm protection to commercial and residential structures enabling the removal of the unsightly sandbags and temporary wave dissipation devices.

This is a big economic issue for South Carolina and Isle of Palms. Please award grant funding to this worthwhile project. The City of Isle of Palms is proactive in taking care of its seven (7) miles of public beach. If funded, care will be taken to ensure a longevity and maximum stabilization of the dune habitat and the beach and dune system.

Very truly yours,

Jim Bolt
6400 Palmetto Drive, Unit 28
Isle of Palms, SC 29451

Robert and Patricia Hemphill
25 Beach Club Villa
Isle of Palms, SC 29451
September 28, 2016

Review Committee
Beach Re-nourishment Funding Assistance Grant
South Carolina Department of Parks, Recreation & Tourism
1205 Pendleton Street, Suite 248
Columbia, SC 29201

Attn: Justin Hancock
RE: Isle of Palms Beach Re-nourishment

As beach front property owners on the Isle of Palms for more than 32 years, we are writing to urge the funding of the Isle of Palms Beach Restoration Project using SC PRT funds allocated for beach restoration. These funds are urgently needed to assist in the expense of restoring the heavily eroded eastern end of the beach on Isle of Palms.

In certain areas of a two mile stretch of beach, there is no dry sand beach at a normal high tide. In response to the threat of storm wave action under residential structures, some homes and condominium complexes are currently protected with sandbags and/or wave dissipation devices. This can only be temporary.

Restoration of the beach, using sand harvested from offshore, will enable restoring critical habitat, returning the recreational beach enjoyed by the public and ensuring the economic health of tourism, which is a critical industry for South Carolina. A restored wide sandy beach will provide storm protection to both commercial and residential structures, enabling the removal of the temporary sandbags and wave dissipation devices.

Please award grant funding for this worthwhile project. The City of Isle of Palms is proactive in taking care of its seven miles of public beach. If funded, care will be taken to ensure longevity and maximize stabilization of the beach and dune system.

Very truly yours,

Robert and Patricia Hemphill

Linda Tucker

From:	Ann Maggard <annmaggard@outlook.com>
Sent:	Friday, October 14, 2016 3:39 PM
To:	ltucker@iop.net
Subject:	Beach Restoration support

October 14, 2016

Review Committee
Beach Renourishment Funding Assistance Grant
South Carolina Department of Parks, Recreation & Tourism
Attn: Justin Hancock
1205 Pendleton Street
Suite 248
Columbia, SC 29201

Dear Review Committee Members:

As a long time property owner inside Wild Dunes, I am writing to urge the funding of the Isle of Palms Beach Restoration Project using SC PRT funds allocated for beach restoration. These funds are urgently needed to assist in the expense of restoring the heavily eroded eastern end of Isle of Palms. In certain areas of an approximately two (2) mile stretch of the beach, there is no dry sand beach at high tide. In response to the threat of storm wave action under residential structures, some homes and condominium complexes are armored with sandbags and/or wave dissipation devices.

Restoration of the beach, using sand harvested from offshore, will enable restoring critical habitat, returning the recreational beach enjoyed by the public and ensuring the economic health of tourism which is a critical industry to the State of South Carolina. The wide, sandy beach will provide storm protection to commercial and residential structures enabling the removal of the unsightly sandbags and temporary wave dissipation devices.

Please award grant funding to this worthwhile project. The City of Isle of Palms is proactive in taking care of its seven (7) miles of public beach. If funded, care will be taken to ensure a longevity and maximum stabilization of the dune habitat and the beach and dune system.

Very truly yours,
Ann Maggard
Sent from my iPad

September 27, 2016

Review Committee
Beach Renourishment Funding Assistance Grant
South Carolina Department of Parks, Recreation & Tourism
Attn: Justin Hancock
1205 Pendleton Street
Suite 248
Columbia, SC 29201

Dear Review Committee Members:

I am writing to urge the funding of the Isle of Palms Beach Restoration Project using SC PRT funds allocated for beach restoration. These funds are urgently needed to assist in the expense of restoring the heavily eroded eastern end of Isle of Palms. In certain areas of an approximately two (2) mile stretch of the beach, there is no dry sand beach at high tide. In response to the threat of storm wave action under residential structures, some homes and condominium complexes are armored with sandbags and/or wave dissipation devices.

Restoration of the beach, using sand harvested from offshore, will enable restoring critical habitat, returning the recreational beach enjoyed by the public and ensuring the economic health of tourism which is a critical industry to the State of South Carolina. The wide, sandy beach will provide storm protection to commercial and residential structures enabling the removal of the unsightly sandbags and temporary wave dissipation devices.

We have been traveling to Charleston and IOP with our family for over 15 years and have recently purchased a waterfront villa in Wild Dunes for both our family to enjoy as well as many other families through rentals. IOP continues to be a vacation favorite for people from all over the country as well as a huge financial benefit to IOP, the Charleston area and South Carolina. The beach erosion has be troubling to many and it is our hope ….and the absolute need of the island…..that we can gain funding using SC PRT funds allocated for beach restoration. It is critical to the longevity of IOP, the many folks who enjoy it year around and the economy of Charleston and all the surrounding areas.

Please award grant funding to this worthwhile project. The City of Isle of Palms is proactive in taking care of its seven (7) miles of public beach. If funded, care will be taken to ensure a longevity and maximum stabilization of the dune habitat and the beach and dune system.

Very truly yours,

Tammy Newman

JOHN & JULIE ODENBACH
808 Lake Road
Webster, New York 14580
(Re: Mariners Walk 4E IOP)

November 14, 2016

Review Committee
Beach Renourishment Funding Assistance Grant
South Carolina Department of Parks, Recreation & Tourism
Attn: Justin Hancock
1205 Pendleton Street
Suite 248
Columbia, SC 29201

Dear Review Committee Members:

I am writing to urge the funding of the Isle of Palms Beach Restoration Project using SC PRT funds allocated for beach restoration. These funds are urgently needed to assist in the expense of restoring the heavily eroded eastern end of Isle of Palms. In certain areas of an approximately two (2) mile stretch of the beach, there is no dry sand beach at high tide.

Restoration of the beach, using sand harvested from offshore, will enable restoring critical habitat, returning the recreational beach enjoyed by the public and ensuring the economic health of tourism which is a critical industry to the state of South Carolina. The wide, sandy beach will provide storm protection to commercial and residential structures enabling the removal of the unsightly sandbags and temporary wave dissipation devices.

Please award grant funding to this worthwhile project. The City of Isle of Palms is a proactive in taking care of its seven (7) miles of public beach. We have owned our home at Mariners Walk since 2006 and absolutely love the area and the fabulous beach that is slowly eroding. Please support this project.

Sincerely yours,

John & Julie Odenbach

7600 Palmetto Dr. Unit A-202
Isle of Palms, SC

September 30, 2016

Review Committee
Beach Renourishment Funding Assistance Grant
South Carolina Department of Parks, Recreation & Tourism
Attn: Justin Hancock
1205 Pendleton Street
Suite 248
Columbia, SC 29201

Dear Review Committee Members:

I am writing to urge the funding of the Isle of Palms Beach Restoration Project using SC PRT funds allocated for beach restoration. These funds are urgently needed to assist in the expense of restoring the heavily eroded eastern end of Isle of Palms. In certain areas of an approximately two (2) mile stretch of the beach, there is no dry sand beach at high tide. In response to the threat of storm wave action under residential structures, some homes and condominium complexes are armored with sandbags and/or wave dissipation devices.

Restoration of the beach, using sand harvested from offshore, will enable restoring critical habitat, returning the recreational beach enjoyed by the public and ensuring the economic health of tourism which is a critical industry to the State of South Carolina. The wide, sandy beach will provide storm protection to commercial and residential structures enabling the removal of the unsightly sandbags and temporary wave dissipation devices.

Please award grant funding to this worthwhile project. The City of Isle of Palms is proactive in taking care of its seven (7) miles of public beach. If funded, care will be taken to ensure a longevity and maximum stabilization of the dune habitat and the beach and dune system.

Very truly yours,
Bozman Reeves

October 19, 2016

Review Committee
Beach Renourishment Funding Assistance Grant
South Carolina Department of Parks, Recreation & Tourism
Attn: Justin Hancock
1205 Pendleton Street
Suite 248
Columbia, SC 29201

Dear Review Committee Members:

I am writing you today as both a resident of the City of Isle of Palms and as the President of the Wild Dunes Community Association. In the past year the beach erosion caused by Hurricane Joaquin, the winter "king high tides" and most recently Hurricane Matthew has been devastating. An approximate two mile stretch of beach on the northeastern section of the island has been particularly hard hit threatening the possible displacement of over 100 residents. At the northern most point of the island the Wild Dunes Resort has found it necessary, after losing the par five 18th hole of their award winning Links Course, to redesign their signature hole to a par three.

The economic impact of the Wild Dunes Community is critical to the financial health of the City of Isle of Palms. Thousands of visitors journey to this beautiful property each year where they enjoy golf, tennis, cycling, fishing, swimming, eco tours, fine dining and relaxation. The central feature, the primary reason for visiting the Isle of Palms or making it a primary residence is the ocean. To enjoy the ocean we must have a safe and functiional beach.

As residents of Isle of Palms we take great pride in our beach. We know that we are fortunate to live here. We are aware of the substantial economic impact that we have on South Carolina's tourism and we welcome the thousands of visitors that are attracted to our community each year. Every effort is made to keep our 7 miles of ocean front beach clean. We have a very active Sea Turtle team that protects the annual nesting of these incredible creatures. Enjoyment of a safe beach is paramount to the economic and ecological health of our community.

Our City leaders are working diligently to put together the necessary permits and documents required to apply for funding for beach renourishment through the 2016-2017 S.C. Appropriations Act, Open Cycle grant program. I respectfully request that your committee make every effort to assist our community in awarding grant funding to cover a portion of the cost of our $15,000,000 effort to restore our beachfront.

Warmest regards,

W. Scott Brawley
2 Dune Ridge Lane
Isle of Palms, SC 29451

Review Committee
Beach Renourishment Funding Assistance Grant
South Carolina Department of Parks, Recreation & Tourism
Attn: Justin Hancock
1205 Pendleton Street
Suite 248
Columbia, SC 29201

Dear Review Committee Members:

I am writing to urge the funding of the Isle of Palms Beach Restoration Project using SC PRT funds allocated for beach restoration. These funds are urgently needed to assist in the expense of restoring the heavily eroded eastern end of Isle of Palms. In certain areas of an approximately two (2) mile stretch of the beach, there is no dry sand beach at high tide. In response to the threat of storm wave action under residential structures, some homes and condominium complexes are armored with sandbags and/or wave dissipation devices.

Restoration of the beach, using sand harvested from offshore, will enable restoring critical habitat, returning the recreational beach enjoyed by the public and ensuring the economic health of tourism which is a critical industry to the State of South Carolina. The wide, sandy beach will provide storm protection to commercial and residential structures enabling the removal of the unsightly sandbags and temporary wave dissipation devices.

Please award grant funding to this worthwhile project. The City of Isle of Palms is proactive in taking care of its seven (7) miles of public beach. If funded, care will be taken to ensure a longevity and maximum stabilization of the dune habitat and the beach and dune system.

Very truly yours,

Frank Zemrose

Wild Dunes

10C Mariner's Walk

10/18/2016

Mr. Justin Hancock

Review Committee

Beach Renourishment Funding Assistance Grant

South Carolina Department of Parks, Recreation and Tourism

1205 Pendeleton Street Suite 248

Columbia, SC 29201

Dear Justin:

I am writing in support of the funding of the Isle of Palms beach restoration project, using SC PRT funding. Without this funding, my family, and thousands of families like ours, will lose a widely regarded, nationally known treasure that is Isle of Palms and Wild Dunes. This area of SC is known nationally and international as a fantastic place for families. My children (who are now adults) still treasure the memories of our times there and continue to return to visit bringing and introducing new friends to this special place. Without this funding, we fear that a true, national treasure will be lost.

Beyond the important personal attachments outlined above, the area is also a haven for wildlife of many species. Please grant this funding so that the beauty and uniqueness of this wonderful place won't be lost.

Sincerely,

Michael Maroon and family

Linda Tucker

From: Mike Maroon <mmaroon@acclaim-group.com>
Sent: Tuesday, October 18, 2016 8:57 AM
To: ltucker@iop.net
Subject: IOP Beach Replenishment Letter
Attachments: IOP Beach Replenishment Letter 10182016.docx

Hi Linda. Attached please find my letter of support. Please confirm receipt and let me know if you need anything else or suggest any revisions. Thanks, Mike

Michael S. Maroon, SIOR
Managing Partner
The Acclaim Group, LLC
108 North Union Avenue, Suite 2
Cranford, NJ 07016

(908) 653-0880
(908) 653-0888 – Fax

mmaroon@acclaim-group.com

acclaim group
CORPORATE REAL ESTATE SOLUTIONS

September 27, 2016

Review Committee
Beach Renourishment Funding Assistance Grant
South Carolina Department of Parks, Recreation & Tourism
Attn: Justin Hancock
1205 Pendleton Street
Suite 248
Columbia, SC 29201

Dear Review Committee Members:

I am writing to urge the funding of the Isle of Palms Beach Restoration Project using SC PRT funds allocated for beach restoration. These funds are urgently needed to assist in the expense of restoring the heavily eroded eastern end of Isle of Palms. In certain areas of an approximately two (2) mile stretch of the beach, there is no dry sand beach at high tide. In response to the threat of storm wave action under residential structures, some homes and condominium complexes are armored with sandbags and/or wave dissipation devices.

Restoration of the beach, using sand harvested from offshore, will enable restoring critical habitat, returning the recreational beach enjoyed by the public and ensuring the economic health of tourism which is a critical industry to the State of South Carolina. The wide, sandy beach will provide storm protection to commercial and residential structures enabling the removal of the unsightly sandbags and temporary wave dissipation devices.

We have been traveling to Charleston and IOP with our family for over 15 years and have recently purchased a waterfront villa in Wild Dunes for both our family to enjoy as well as many other families through rentals. IOP continues to be a vacation favorite for people from all over the country as well as a huge financial benefit to IOP, the Charleston area and South Carolina. The beach erosion has be troubling to many and it is our hope ….and the absolute need of the island…..that we can gain funding using SC PRT funds allocated for beach restoration. It is critical to the longevity of IOP, the many folks who enjoy it year around and the economy of Charleston and all the surrounding areas.

Please award grant funding to this worthwhile project. The City of Isle of Palms is proactive in taking care of its seven (7) miles of public beach. If funded, care will be taken to ensure a longevity and maximum stabilization of the dune habitat and the beach and dune system.

Very truly yours,

Timothy Newman

September 27, 2016

Review Committee
Beach Renourishment Funding Assistance Grant
South Carolina Department of Parks, Recreation & Tourism
Attn: Justin Hancock
1205 Pendleton Street
Suite 248
Columbia, SC 29201

Dear Review Committee Members:

I am writing to urge the funding of the Isle of Palms Beach Restoration Project using SC PRT funds allocated for beach restoration. These funds are urgently needed to assist in the expense of restoring the heavily eroded eastern end of Isle of Palms. In certain areas of an approximately two (2) mile stretch of the beach, there is no dry sand beach at high tide. In response to the threat of storm wave action under residential structures, some homes and condominium complexes are armored with sandbags and/or wave dissipation devices.

Restoration of the beach, using sand harvested from offshore, will enable restoring critical habitat, returning the recreational beach enjoyed by the public and ensuring the economic health of tourism which is a critical industry to the State of South Carolina. The wide, sandy beach will provide storm protection to commercial and residential structures enabling the removal of the unsightly sandbags and temporary wave dissipation devices.

Please award grant funding to this worthwhile project. The City of Isle of Palms is proactive in taking care of its seven (7) miles of public beach. If funded, care will be taken to ensure a longevity and maximum stabilization of the dune habitat and the beach and dune system.

Very truly yours,

Kirk and Anne Ossewaarde

76oo Palmetto Drive
C-315
Isle of Palms, SC 29451

Ann L Burns
PO Box 50
Isle of Palms, SC 29451

Oct. 1, 2016

Review Committee
Beach Renourishment Funding Assistance Grant
South Carolina Dept. of Parks, Recreation I& Tourism
Attn: Justin Hancock
1205 Pendleton Street
Suite 248
Columbia, SC 29201

Dear Review Committee Members:

I am writing to urge the funding of the IOP Beach Restoration Project using SC PRT funds allocated for beach restoration. These funds are urgently needed to assist in the expense of restoring the heavily eroded eastern end of IOP. In certain areas of an approximately a 2 mile stretch of the beach, there is no dry sand beach at high tide. In response to the threat of storm wave action under residential structures, some homes and condos are armored with sandbags and/or wave dissipation devices.

Restoration of the beach, using sand harvested from offshore, will enable restoring critical habitat, returning the recreational beach enjoyed by the public and ensuring the economic health of tourism which is a critical industry to the State of SC. The wide, sandy beach will provide storm protection to commercial and residential structures enabling the removal of the unsightly sandbags and temporary wave dissipation devices.

Please award grant funding to this worthwhile project. The City of IOP is proactive in taking care of its seven miles of public beach. If funded, care will be taken to ensure a longevity and maximum stabilization of the dune habitat and the beach and dune system.

Sincerely,

Ann Burns

Linda Tucker

From:	Robert.M.Ash@wellsfargo.com
Sent:	Tuesday, September 27, 2016 2:38 PM
To:	ltucker@iop.net
Cc:	loriash.NC@gmail.com
Subject:	Beach Restoration at IOP
Attachments:	sample letter of support.docx

Linda:
I am writing to urge the funding of the Isle of Palms Beach Restoration Project using SC PRT funds allocated for beach restoration. These funds are urgently needed to assist in the expense of restoring the heavily eroded eastern end of Isle of Palms. In certain areas of an approximately two (2) mile stretch of the beach, there is no dry sand beach at high tide. In response to the threat of storm wave action under residential structures, some homes and condominium complexes are armored with sandbags and/or wave dissipation devices.

See the letter attached.

Robert M. Ash
Senior Vice President
Eastern U.S.Division

Wells Fargo Merchant Services |6100 Fairview Road, 8th Floor| Charlotte, NC 28210
MAC D1067-080
Tel 704-551-6356 | C 704-906-4177 I eFax 877-302-9512
robert.m.ash@wellsfargo.com

Supporting Documentation

Beach Restoration Historic Reverse Chronology as posted and maintained on the City's website www.iop.net

BEACH RESTORATION

CITY SERVICES

Calendar
Administration
- Accomplishments
- Beach Restoration
- Local Comprehensive Beach Management Plan
- 'Signal 30' Award
- Parking & Beach Improvements

Building & Planning
Finance
Fire
Municipal Court
Recreation
Police
Public Works

Beach Restoration in Reverse Chronology

2017

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2008 Project Summary

February 1, 2017

Private funding: As of February 1, 2017, an important project milestone was achieved and the City is in receipt of 100% of the approximately $5,000,000 private stakeholders funding for the next large scale Beach Restoration Project. Documentation of these funds deposited to the Beach Restoration Account, together with the City's budgeted commitment of approximately $2.8 million dollars, will be used to prove the local share of funding in the grant application to be submitted to South Carolina Parks and Recreation Tourism.

Stakeholder Agreements: A few of the executed and witnessed stakeholder agreements remain outstanding, but those remaining outstanding have been contacted and the agreements are expected back to the City.

Permitting: The comment period, for the combined South Carolina Department of Health and Environmental Control, Office of Ocean and Coastal Resource Management and US Army Corps of Engineers joint permit application, is closing February 9, 2017. Coastal Science and Engineering is in the process of receiving and responding to comments/requirements on the permit application from the environmental agencies. As of this update, all agencies have not completed their comments.

Engineering: The City must take steps to engage services and initiate the remaining engineering on the project to shepherd the project through final design, bidding, contract award and construction oversight.

SC PRT Grant Application: The application must be completed, which will require adjusting the schedule originally contemplated. The original schedule planned to accomplish the project in the winter of 2017.

Historic Site: As part of this Beach Restoration, the City learned of the discovery of the possible resting place for the Second Stone Fleet located just offshore from the Isle of Palms, and the designation of this area as a proposed historic district. Some of the best quality sand for restoration of the Isle of Palms beach is found in a proposed borrow site lying within the proposed Historic District. This area was adjacent to the same borrow area used in the 2008 Beach Restoration. While it remains the intent of the City to work on a compromise with South Carolina Historic Preservation Office to be able to harvest sand from this area in the future, in order to remove the delays that would be caused by tasks associated with developing that compromise, the City will utilize sand from outside the proposed district.

Federal Disaster Declarations Hurricanes Joaquin and Matthew: The City, South Carolina Emergency Management Division and the Federal Emergency Management Agency continue to work together to agree to elements of a Project Worksheet which may establish FEMA's participation in the recovery expense associated with sand losses during these storms.

Timing: Many have asked about the timing of the actual work. Too many factors, over which the City has little control, impact the answer to the question of timing. Therefore, at this time, the City is not able to

provide a satisfactory prediction. Those unknown factors include obtaining the permits and evaluation of any stipulations placed on the permits, receipt of funding awards, amount of funding awards, stipulations regarding timing which could be imposed by funding agencies, the amount and number of bids, which is affected by the availability of dredging equipment in the area.

Imminent Tasks: Imminent tasks are as follows:

1. Obtaining 100% of the fully executed Stakeholder Agreements,
2. Completion and submission of the SC PRT grant application,
3. Contracting for remaining engineering services,
4. Securing the joint permit.

2016

December 21, 2016

Comments regarding the beach renourishment project application must be received by the South Carolina Department of Health and Environmental Control on or before January 21, 2017 - **Joint Permit Application Public Notice.**

Comments may be sent to Matt Slager via email or mailed to:

SC DHEC-OCRM, Attn: Matt Slagel 1362 McMillan Avenue, Suite 400 Charleston, SC 29405

November 29, 2016

The City submitted an amended permit application including the area of Breach Inlet and 14th Avenue for beach renourishment activities.

November 2, 2016

The City submitted a permit application to permitting and regulatory agencies for the next beach restoration project.

November 2, 2016

Coastal Science and Engineering provided to the City a report with the results of Hurricane Matthew's post storm survey and recommendations.

October 13, 2016

The City approved an amendment to the contract with Ashridge/Lake Moultrie, Inc. to extend the scope of the emergency berm repair work to 202 Ocean Boulevard through 522 Ocean Boulevard.

October 10, 2016

The City awarded two contracts for emergency work as the result of Hurricane Matthew. The City executed a contract with Ashridge/Lake Moultrie, Inc., under OCRM's Emergency Order, to perform emergency berm repair by pushing sand back up in the areas of Beachwood East/4,5 & 6 Dunecrest Lane, Grand Pavilion, Seascape and Ocean Club Building 1 where dune damage is critical and structures are significantly threatened. The City also awarded an emergency contract to Coastal Science and Engineering to perform a post-storm survey of the beach and to supervise the berm restoration project. The City has made a request to the National Guard for assistance in restoring the dune system throughout the full length of the island.

August 29, 2016

Mayor Cronin met with representatives of the State Historic Preservation Office, FEMA, SC Emergency Management Division, and the the State's Underwater Archaeologist to discuss the proposed historic district and a path forward that would allow the preservation of the area while allowing the City to harvest beach compatible sand for the beach renourishment project.

August 23, 2016

City Council adopted a resolution authorizing the submittal of an application to the South Carolina Department of Parks, Recreation and Tourism for beach restoration funds.

City Council approved a contract amendment to Coastal Science and Engineering in the amount of $125,750 for a change in the scope of work involved with locating a new borrow site for the beach renourishment project.

July 28, 2016

City Council received the Year 7 Monitoring Report following the 2008 beach restoration project.

July 12, 2016

The City continues to work on the permitting of a large scale beach renourishment project for the winter of 2017. The City learned that the State Historic Preservation Office (SHPO) is working to delineate an area offshore IOP as proposed for the National Register of Historic Places. This would create a historic district for that area due to the possibility of its containing shipwrecks and the submerged landscape of the Second Stone Fleet. The Second Stone Fleet was a group of thirteen (13) old whaling vessels secured by the Union forces and filled with rocks that were sailed into Charleston Harbor and sunk as part of their blockade of the port.

The City's proposed offshore borrow areas are within the proposed new historic district. The City is now taking some additional samples in other locations outside the proposed National Register of Historic Places boundary to see if it is possible to locate compatible material close to the shore, but outside of this boundary.

April 7, 2016

The City's current shoal management permit has been amended to authorize increasing the total project volume of sand that is scraped from an accreting area of beach or an attaching shoal and transferred to an eroding of beach. Read the amended permit from DHEC.

March 2, 2016

City staff met with FEMA representatives to finalize the Project Worksheet related to the damages to the beach as a result of the October 2015 storm.

2015

December 30, 2015

Mayor Cronin and City staff discuss the need for dune protection and dry sand preservation during a post-storm visit by FEMA officials.

October 30, 2015

Coastal Science and Engineering provide to the City the Post-Storm Survey Results .

October 6, 2015

As a result of the historic flooding event, City Council approved a motion to award a contract to Coastal Science and Engineering for emergency, post-storm erosion assessment. Read the minutes of the Special City Council meeting.

August 31, 2015

The City's Fiscal Year 2016 budget (covering July 1, 2015 to June 30, 2016) includes some funding for a Shoal Management project; however, the exact dates of project construction are yet to be determined. Several steps must take place before a construction schedule can be finalized. First, the City has submitted a request to the state and federal regulatory agencies to amend the existing permit to allow the movement of additional quantities of sand and to allow additional construction events within the permit window. Second, all of the funding must be assembled for the project. The City's FY16 budget

contemplates the City contributing a portion of the estimated $1,300,000 in project expense, so the gap in funding will need to be contributed by other stakeholders.

Multiple factors are involved in the selection of the construction window: proximity of the shoal to the shore, volume of accessible sand on the shoal, requirements of existing state and federal permits, potential impact on turtle nesting and hatching seasons, potential impact on the beach season, availability of a qualified construction vendor, and timing of equipment mobilization. Presently, entities other than the City have installed erosion control measures such as sandbags and wave-dissipation devices which are not City projects and not under City control. These projects are operating under permits issued by regulatory agencies to parties other than the City. State regulators have informed the City that they would require removal of any emergency erosion measures, including sandbags and wave-dissipation devices, before a project can go forward.

The type of shoal management project being planned for is similar in scope and nature to the project executed last fall and winter. It is smaller than the project in 2008 that involved an ocean dredge piping sand onto the beach from offshore. This project would involve three to six large trucks driving on the beach and up to two excavators.

This reverse chronology is updated whenever accurate information is available and is the best place to verify information. For now, residents and visitors should be mindful that the City is working toward a project that could take place between October 2015 and March 2016, but nothing is finalized. The City is aware that scheduling visitors and guests is important and so is ensuring that people have an accurate understanding of what to expect during their time on the island. Information will be distributed as soon as it is known. Thank you for your patience.

June 23, 2015

City Council approved award of a contract to Coastal Science and Engineering in the amount of $177,304 for beach condition monitoring for the entire Isle of Palms beach for the years 2015, 2016, and 2017.

May 26, 2015

City Council approved a motion to authorize Coastal Science and Engineering to seek approval from the state and federal agencies to augment the City's permit to allow for an additional volume of sand and for a more flexible time period to get started on the next project as early as September 2015.

April 17, 2015

City Council received the Year 6 Monitoring Report. (5.46 MB)

March 16, 2015

Sand hauling for the shoal management project ended on February 19, 2015. The project transferred 240,00 cubic yards of sand fro accretional areas from 53rd through 56th Avenues and near Mariners Walk and Shipwatch. Approximately 70,000 cubic yards were placed along the Beachwood East/Dunecrest area, and 170,000 cubic yards were placed near Seascape, Ocean Club and the 18th hole of the Links golf course. The total cost of construction was approximately $926,000, which is equivalent to a net cost of $3.87 per cubic yard hauled. This compares to average costs of offshore nourishment sand ranging between $8 to $10 per cubic yard. Even with the addition of sand with the project, configuration of the approaching shoal is continuing to cause erosion, especially during high wave and tide events. It is likely that some areas of the project will need additional mitigative measures prior to the next permit window for another shoal project which is November 2015 - April 2016. Click here to view aerial pictures of the project area and the entire 7-mile Isle of Palms beach taken today.

February 20, 2015

Sand hauling for the project has been completed. Baker will continue to grade the fill this weekend with the bulldozer and will be removing equipment and materials through next week.

February 18, 2015

Based on the condition today, Coastal Science and Engineering instructed Baker to split the remaining fill between both fill areas. Two trucks will be hauling to the western fill area and one to the eastern fill area. Filling will continue through Friday afternoon. Baker is presently shaping the fill with the bulldozer to the design elevation. This may continue after Friday, but no additional sand will be hauled after Friday.

February 9, 2015

Baker is currently working every day, all day during daylight hours to harvest sand from the intertidal beach between Shipwatch and the Property Owners Beach House. Sand is primarily being placed in the eastern fill area. Work is expected to continue through late February, but the schedule is subject to change.

February 2, 2015

Construction has resumed, and work this week will continue off the shoal. Currently, Baker does not plan to work on Sunday, February 8th or Monday, February 9th. Work on Saturday, February 7th will depend on conditions. The City appreciates the continued patience of residents and visitors. Please keep a safe distance from the project and the equipment.

January 28, 2015

View a ground-level and aerial photo gallery of the project.

January 23, 2015

As work progresses, the shoal is becoming lower, meaning less sand is visible during normal and neap (higher low) tides. There is still sand available during spring tides. Baker has been consistently productive for the past two weeks. The design quantity has been placed along the Beachwood East/Duncrest area, and remaining sand will be placed solely in the eastern fill area. Areas needing regrading to the design template will be determined towards the end of the project. Construction will not occur from Sunday, January 25 through Wednesday, January 28.

January 13, 2015

Baker continues working to harvest sand from the shoal and place it at both fill locations. Work will continue in this fashion this week and over the weekend. The next scheduled break is Janury 24th-26th.

January 5, 2015

R.B. Baker continues to move sand from the shoal during low tides, presently placing sand in the eastern fill are near Ocean Club and the golf course. Once a new bulldozer arrives on site, the sand piles in each fill area will be leveled out to produce a smooth berm. Sand hauling will continue over the next month in a similar fashion. R.B. Baker will place additional sand along the area near Beachwood East and Dunecrest Lane beginning later this week or once the new bulldozer arrives.

January 2, 2015

R.B. Baker resumes work today by harvesting sand from the shoal via the constructed causeway connection. Sand is expected to be placed in the area of Ocean Club for the next several days. A top priority is to locate a replacement bulldozer for the non-operational one. Once a replacement is located, the piles of sand on the beach will be leveled. Each day, construction will take place during the two-and-a-half hours on either side of low tide. No work can occur at high tide. When trucks are operating on the wet sand portion of the beach, visitors should please avoid that area.

2014

December 23, 2014

Baker has stopped working for the day and will break for the holiday week. Work will resume on January 2, 2015. Due to an equipment breakdown, the bulldozer has been non-operational ad has not been able to smooth the piles, so they will have to be there during the break. Baker plans to bring in a new bulldozer once work resumes. The dozer can not be moved at the moment, so it will remain near the high-tide line near the Property Owners Beach House. The wheeled vehicles will be stored at the Citadel Beach House and the remainder of the equipment will be stored off of the beach during the break.

December 19, 2014

R.B. Baker continues to work exclusively off of the shoal. They are placing sand in both fill areas. They will level the piles before leaving for the holiday break from December 24, 2014 to January 1, 2015.

December 16, 2014

Over the past weekend (December 13-14), R.B. Baker established a causeway connecting the beach to the shoal which was offshore of Wild Dunes. Work in the near term will continue by harvesting sand from the shoal around low tide (typically 2-3 hours before and after low tide) and placing the sand in the fill areas. Work will concentrate on the area between the Wild Dunes Property Owners Beach House and the Links golf course this week and into the weekend. Beginning sometime near Sunday, December 18, sand will be placed along the narrower areas of the western fill site near Beachwood East and Dunecrest Lane. No additional harvesting is anticipated in the area between 53rd and 56th Avenue. The beach will be available for public used when the contractor is not working close to high tide. No work will be done between Christmas Eve ad New Years Day.

December 13, 2014

R.B. Baker began working today on building an access pathway connecting the intertidal beach to the shoal which is just offshore. Once the pathway is complete, likely in two to three days, R.B.Baker will begin harvesting sand from the shoal during low tides, when the shoal is above the water. The current work plan is for R.B. Baker to work the area between Beach Club Villas and the Links course through the holiday break. No work is planned to occur between Christmas Day and New Year's Day. As the project progresses, adjustments may be made to the work plan to best utilize the working times and available sand sources. Updates will be posted as soon as they become available.

December 1, 2014

R.B. Baker is working on the East end today and tomorrow and plans to return to working on the West end on Wednesday. Sandbags are still being removed from Beachwood East, which should continue through Thursday. No work is expected over this weekend.

November 25, 2014

As of yesterday evening, the contractor, R.B. Baker, has moved approximately 79,701 cubic yards of sand. Nearly 2,000 loads (approximately 56,600 cubic yards) have been placed along the eastern fill area (Seascape, Ocean Club, and the 18th Hole). Eight Hundred loads (approximately 23,000 cubic yards) have been placed along the western fill area (Beachwood). The recent tides and waves produced significant profile adjustment, where much of the sand placed along the upper beach shifted to lower in the beach profile, resulting in loss of most of the dry sand area in front of Ocean Club. Baker will spend all day today placing sand in that area, and then will split the trucks tomorrow morning to have one placing sand at Ocean Club and one at Beachwood to shore up the dune prior to the holiday break. Tides will be lower as the week progresses and the weather is scheduled to improve, especially over the weekend, so hopefully the fill placed over the next two days will maintain a dry beach until work resumes Monday. The trucks will be kept at the Citadel Beach House during the break. The excavator and dozer will be placed along the access near the Wild Dunes Property Owners Beach House (leaving sufficient room for emergency vehicle access). Coastal Science and Engineering will assess the site on Sunday or Monday to determine what area will be filled when work resumes. Happy Holidays to all.

November 24, 2014

High tides impacted the Ocean Club end of the project. The contractor has moved back to the northeast end of the project to work to repair damage from high tides. Two more days of high tides are expected before they settle down.

November 14, 2014

The project is anticipated to move to the Dunecrest and Beachwood East areas on Monday, November 17. The area between 53rd and Dunecrest will have construction impact.

November 11, 2014

Project work is not scheduled to occur from Thursday, November 27 through Sunday, November 30.

November 10, 2014

As of the end of the day, 22,226 cubic yards (770 truckloads) of sand had been moved from the eastern harvest area to the eastern fill area for an average of 3,175 cubic yards per day. Work is expected to continue in the east area through Friday at minimum.

November 6, 2014

Project work is expected to continue through the weekend in the area of Ocean Club.

November 4, 2014

The project began moving sand this morning in the area between Property Owners Beach House and the 18th hole of the Links Golf Course. Work will continue in this area through the remainder of the week. For the safety of the public, ropes have been installed to separate active construction zones from beach visitors. Beach access is available near the Grand Pavilion or West of Property Owners Beach house. The seawall, installed near Ocean Club, has been completely removed by the responsible parties.

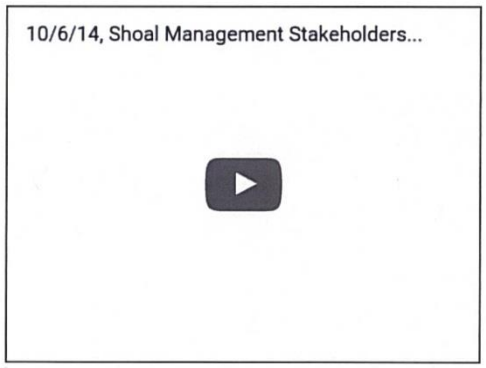
October 28, 2014

City Council approved the change order to R. B. Baker authorizing construction on the 2014 Shoal Management Project. Preparations are being made for an anticipated start date of November 3 and sand movement is expected to begin on November 4th at 7 a.m. Beachgoers will see large equipment and trucks which will be roped off. Areas seaward of the ropes will be inaccesible to the public. For the first week, work is expected to occur in the Eastern area between Wild Dunes Property Owners Beach House and the 18th hole of the Links Golf Course.

October 6, 2014

In preparation for the planned Fall/Winter 2014 - 2015 Shoal Management Project, the City held an informational meeting for stakeholders. View the meeting video and materials below.

Meeting Presentation Slides



June 24, 2014

The Isle of Palms City Council ratified the Fiscal Year 2015 Budget , which includes a provision for a potential shoal management project in the fall of 2014 and a City contribution of $200,000 toward that project.

June 2, 2014

Governor Haley signed the Beach Preservation Act (S503) into law.

May 28, 2014

City Council received the Breach Inlet Quarterly Survey from April 2014 (2 MB).

March 5, 2014

City Council received the Year 5 Monitoring Report (16.7 MB).

February 24, 2014

City Council received the Breach Inlet Quarterly Survey from January 2014 (2.25 MB).

January 28, 2014

City Council received a brief update from Coastal Science and Engineering regarding the condition of the beach.

2013

November 1, 2013

The City received amended permit SAC-2010-1041-21G from the United States Army Corps of Engineers.

October 22, 2013

City Council approved a change order to the City's contract with Coastal Science and Engineering in the amount of $20,800 to increase the frequency of monitoring to quarterly at Breach Inlet.

August 27, 2013

Steven Traynum of Coastal Science and Engineering attended the August 27 City Council meeting to provide Council with an overview of the results of the 2013 beach monitoring of the island's entire 7-mile beach. Click here to read the meeting minutes. Click here to watch a video of the meeting.

May 31, 2013

The City received amended permit P/N# 2010-1041-21G from SCDHEC "to authorize increasing the number of sand scraping events from two (2) to four (4) over the life of the permit provided the sand is only taken fom the attaching shoal area . . . and the area identified as 'Potential Borrow Area A' in [the] amendment request." Under state law H4445, the permit expiration date has been extended to August 31, 2021.

January 25, 2013

The City submitted a permit amendment request to SCDHEC and USACE requesting an extension of the SCDHEC permit expiration to coincide with the USACE expiration and requesting an increase in the allowable number of sand scraping events.

2012

November 2012

The City received the Year 4 Monitoring Report (15 MB) including Appendix A (5 MB).

July 2012

The City received Lighting Study #2, performed as a result of requirements for the 2012 Shoal Management Project. In the time between the first and second lighting study, residents in affected areas were encouraged to turn off outdoor lights at night to avoid adversely affecting nesting and hatching sea turtles.

July 2012

The City received the Final Report (6.7 MB) for the 2012 Shoal Managment Project, including Appendix 1 (9 MB), Appendix 2 (1 MB), Appendix 3 (2MB), and Appendix 4 (2 MB).

July 2012

The City received the Year 3 Monitoring Report (14 MB).

March 12 - April 10, 2012

Construction is executed on the 2012 Shoal Management Project by Baker Infrastructure Group. Using land-based equipment, 87,763 cubic yards of sand are moved from the "borrow area" from approximately Beach Club Villas I to Shipwatch to the "fill area" from Port O'Call to the 18th fairway of the Links Golf Course.

February 28, 2012

City Council awarded the a contract to Baker Infrastructure Group in an amount up to $250,500 for construction of the 2012 Shoal Management Project.

February 27, 2012

The United States Army Corps of Engineers issued Permit Number 2010-1041-21G (pdf, 2MB) for shoal realignment.

February 2012

As part of the requirements for the 2012 Shoal Management project, the City authorized Coastal Science and Engineering to conduct Lighting Study #1 from the beach at night.

January 25, 2012

City advertised Request for Bids for construction of the 2012 Shoal Management Project.

2011

November 15, 2011

City Council awarded the two contracts to CSE. The first was for beach condition monitoring for the entire Isle of Palms beach for years 2012, 2013 and 2014. The second was for final coastal engineering, design, and construction administration of a shoal management project.

August 31, 2011

The SDHEC-OCRM issued the City the five-year Permit 2010-1041-21G (pdf, 890 KB) "to realign the beach in a shoal-attachment area on and adjacent to the Atlantic Ocean at a location limited to the area between 53rd Avenue and an existing groin near the 17th tee of the Links Course, on the northeastern end of the Isle of Palms, Charleston County, South Carolina."

June 2011

Sediment samples were collected for the third and final year of post-project monitoring required by the permit.

March 2011

The City received the Year 2 Monitoring Report (13MB) for the beach. In addition, City Council approved an amendment to CSE's contract to design and apply for permits for remedial nourishment of erosion hotspots.

February 15, 2011

Coastal Science and Engineering (CSE) spoke at the Ways and Means Committee. CSE reported that the Essential Fish Habitat and Biological Assessment documents were submitted to the regulatory agencies. Regarding the permit application, the City is waiting to receive public comments submitted to the agencies to which the City will respond. CSE also addressed the current state of the beach based on the most recent monitorings. Click here to view the presentation .

January 2011

As part of the recent permit application, regulatory agencies requested an Essential Fish Habitat (EFH) and a Biological Assessment (BA). These two studies are intended to asses potential impacts of the project on flora and fauna in the area. Field work and research have been completed and final documents are in the preparation stage.

2010

December 3, 2010

The U.S. Army Corps of Engineers issued a Public Notice regarding the City's permit application. Public Comments were accepted from December 2, 2010 to January 1, 2011.

October 6, 2010

The City submitted the permit applications to perform excavation ad place fill material to realign the beach in shoal attachment areas to the United States Army Corps of Engineers and to the South Carolina Department of Health and Environmental Control Ocean &Coastal Resource Management for remedial nourishment of erosion hotspots.

September 2, 2010

Representatives from the City of Isle of Palms and Coastal Science & Engineering attended an interagency meeting to discuss the project and allow agencies to ask questions and offer feedback before the permit application for remedial nourishment of erosion hotspots is submitted. Agencies at the meeting included the United States Army Corps of Engineers (USACE), the South Carolina Department of Health and Environmental Control Bureau of Water Quality (SCDHEC BWQ), the South Carolina Department of Natural Resources (SCDNR), the South Carolina Department of Health and Environmental Control Ocean & Coastal Resource Management (SCDHEC OCRM), and the United States Fish and Wildlife Service (USFWS).

July 15, 2010

Coastal Science & Engineering made a site visit to the Isle of Palms this week to perform tests and collect samples for the scheduled bi-annual post-project beach monitoring in accordance with the original project permit. Work also continues on the preparation of the permit application for remedial nourishment of erosion hotspots.

June 15, 2010

The City was in receipt of signed concurrence from all parties who signed original agreements. In accordance with the Council action of April 27, the City executed an amendment to the contract with Coastal Science & Engineering to "Plan and Permit Application for Remedial Nourishment of Erosion Hotspots."

April 27, 2010

City Council passed a motion to approve an amendment to the Coastal Science & Engineering contract for planning and preparation of the permit application for remedial nourishment of erosion hot spots contingent upon the approval of the original parties.

February 3, 2010

City Council passed a motion supporting the sending of correspondence to the parties who signed agreements with the City related to the original project requesting concurrence for using the funds on-hand in the IOP Beach Restoration Escrow account to pursue a permit for remedial nourishment of erosion hotspots.

February 3, 2010

City Council held a Special Meeting to hear the results of the "2008 Isle of Palms Beach Restoration Project Year 1 Monitoring Report" (15.2MB, pdf). Coastal Science & Engineering summarized the report in a PowerPoint Presentation (2.11MB, pdf).

2009

May 25, 2009

Sand fencing has been installed and dune vegetation has been planted in the project area as additional protection of the beach.

2008

July 2, 2008

Construction is officially complete and all equipment has been cleared from the beach. Final surveys and post-project monitoring will continued as needed.

June 26, 2008

The dredging and pumping are complete well ahead of schedule. View a map of the completed fill in Reach A. The Dredge, "R.S. Weeks," has left the waters surrounding the Isle of Palms. Work will continue as pipes and equipment are removed from the beach, final surveys are completed and the sand is tilled.

June 24, 2008

View a progress map for Reach A.

June 22, 2008

View a progress map for Reach A.

June 20, 2008

View a progress map for Reach A.

June 17, 2008

View a progress map for Reach A.

June 16, 2008

The fill has been completed in Reach C.

June 15, 2008

View a progress map for Reach C.

June 14, 2008

The fill has been completed in Reach B.

June 13, 2008

View a progress map for Reach B. To date, no fill has been placed in Reach A or Reach C.

June 12, 2008

During construction, a historic, 128-pound cannon ball was excavated onto the beach. The cannon ball was evaluated by Charleston County and state explosive teams as well as by a historian with the National Park Service. The cannon ball was safely removed from the project area.

June 9, 2008

View progress maps for Reach A, Reach B and Reach C.

June 2, 2008

Approximately 8,600 sand bags have been removed to date. Dredging and pumping continue as scheduled.

May 27, 2008

Over the Memorial Day weekend, the dredge took up position and began pumping sand onto the beach. Visitors can see the "slurry," a mixture of water and sand, coming out of the pipe. Soon, the slurry will dry into a sandy beach. The operation will officially run 24 hours per day, 7 days per week until the project is complete. Sand bag removal continues as scheduled. The City appreciates your patience during construction.

May 22, 2008

The Dredge, the "R.S. Weeks," has arrived in Charleston and should be visible in near the project borrow sites shortly. The dredging and pumping of sand is anticipated to begin over the Memorial Day weekend. Sandbag removal continues at a good pace. Visitors to the beach will notice that the beach is active with construction equipment as pipe is laid in preparation for the pumping of sand.

May 19, 2008

Sandbag removal began this morning and will continue as the project progresses. Please stay clear of the construction equipment.

May 15, 2008

The City received final approval from the United States Army Corps of Engineers regarding a monitoring plan for the project. Weeks Marine has mobilized equipment and is placing pipeline on the beach and submerging pipeline in the ocean. The dredger is en route to the project site. Monitoring for sea turtles has begun. The City requests your cooperation for the temporary (until July 31, 2008) noise, lights and construction equipment. Please avoid the construction area, pipeline and heavy equipment.

May 7, 2008

The United States Army Corps of Engineers issued Permit Number 2007-02631-21G (pdf, 3 MB) for the beach restoration project, and the City signed the permit.

May 5, 2008

The City hosted two meetings related to project construction. The first included representatives from the South Carolina Department of Natural Resources, the United States Fish and Wildlife Service and the Island Turtle Team to discuss the protocols and protections for endangered species during the project. The second focused on logistical issues of project construction.

May 2, 2008

At a Special Meeting, City Council passed a motion to accept the lowest bid placed by Weeks Marine and to amend the volume of sand to be dredged from 780,000 cubic yards to 845,000 cubic yards for a contract totaling $8,386,850, contingent upon the City's receipt and approval of the permit from the United States Corps of Engineers.

April 24, 2008

The City hosted a public bid opening for the Beach Restoration Project and recieved bids from Great Lakes Dredge & Dock Company, Weeks Marine, and Norfolk Dredging Company. At this stage, the bids undergo a formal review.

April 16, 2008

The City and Coastal Science and Engineering hosted a mandatory pre-bid meeting where contractors interested in bidding on the project received essential information, asked questions and made a project site visit.

April 15, 2008

The City received signed agreements from parties involved in the project. In addition, funds received from involved parties were deposited in the IOP Beach Restoration Escrow to be used for the project.

March 18, 2008

The South Carolina Department of Health and Environmental Control Ocean and Coastal Resource Management issued the City of Isle of Palms Permit 2007-02631-21G-P (pdf, 2 MB) for beach renourishment.

February 19, 2008

Mayor Mike Sottile and City Administrator Linda Tucker attended the Charleston County Council meeting in support of the City's application for financial assistance. Charleston County Council approved the request and contributed $900,000 towards the project.

January 17, 2008

The City of Isle of Palms made a formal request to Charleston County for fiscal assistance with the erosion crisis and beach restoration project.

January 11, 2008

At the request of the permitting agencies, the City of Isle of Palms filed an amended permit application with SCDHEC OCRM and USACE that modified the proposed construction schedule. The modified permit application stipulates that all construction must be complete by July 31, 2008. The impetus for the amended construction schedule was to ensure removal of sandbags from the beach before any potential fall/winter storm activity to provide maximum protection to the citizens, the environment and the structures.

January 11, 2008

The City of Isle of Palms entered into an agreement with Coastal Science & Engineering to plan, permit, engineer and administer services related to the project.

January 10, 2008

City Council passed a motion to contribute $1,700,000 to the project in addition to funds previously committed. Per the motion, the $1,700,000 will be generated with a revenue bond.

2007

November 20, 2007

The City of Isle of Palms applied with SCDHEC OCRM and the United States Army Corps of Engineers (USACE) to receive a permit for beach renourishment.

November 13, 2007

At a Special Meeting, City Council received a presentation of the Long-Term Beach Management Plan and passed a motion to initiate the permit application process for a beach renourishment project using $200,000 allocated in the FY08 budget for beach erosion.

2008 Project Summary

The northeastern end of the Isle of Palms endured a severe erosion crisis as a shoal attached to that section of the island. If the acute episode continued unabated, structures could have been threatened. In order to protect the public safety and to ensure that the beaches remained healthy, the City undertook a beach restoration project in the spring and summer of 2008. The South Carolina Department of Health and Environmental Control office of Ocean and Coastal Resource Management (SCDHEC OCRM) issued the City a permit that stipulated "up to 885,000 cubic yards of sand will be dredged from four offshore borrow sites and pumped via hydraulic pipeline to renourish 13,785 linear feet of beach." This project restored the dry sand beach, controlled the erosion and included the removal of all sandbags placed in the erosion area

The City of Isle of Palms Local Comprehensive Beach Management Plan, including Appendices, was approved by SCDHEC OCRM on April 7, 2008.

Beach Monitoring

As part of the permit requirements for the 2008 project, the City executed a pre-project monitoring in May 2008 and post-project monitorings in October 2008, May 2009, September 2009 (Year 1), May 2010, September 2010 (Year 2) and June 2011 (Year 3). Included in the post-project monitoring are surveys of the beach and borrow areas as well as benthic analysis. Another important part of the post-project monitoring was compaction testing, which determined whether the sand needs to be tilled before the start of turtle nesting season.

Monitoring of the entire seven miles of Isle of Palms beach has been planned for 2012, 2013 and 2014.

2008 Project Frequently Asked Questions

When did the project start?

The project began over Memorial Day weekend 2008.

When did the project end?

Project construction was completed in early July 2008.

Where did the project start and end?

The restored beach runs from 53rd Avenue to Dewees Inlet. The project map shows that sand was placed in three major areas called Reach A, Reach B and Reach C. Where the project starts and ends exactly, including where construction occurred on any specific day, depended on several variables including weather conditions and material conditions.

What about the sea turtles that nest on the Isle of Palms?

The City continues to work closely with all appropriate local, state and federal agencies to ensure maximum protection for sea turtles. The permits issued by the agencies allowing construction to occur include clear guidelines to protect sea turtles. Every night and every morning, turtle monitors walked the construction area looking for turtles and their tracks, and if one was found, the appropriate steps were taken to protect the turtle and its nest.

Did the project run all day and night?

Yes. The project did run 24 hours per day and 7 days per week. The goal was to complete the project as soon as possible, so unless inclement weather forced a delay, construction continued all the time. The project was completed several weeks ahead of schedule thereby minimizing disruption to beach goers.

What was construction like?

The City contracted with Weeks Marine to perform the construction. Beach restoration is a large project that involves an off-shore dredger, large pipeline and heavy equipment and trucks. Visitors and residents in close proximity to the project encountered this large equipment and heard the accompanying noise. At night, lights illuminated the beach so construction could continue. These disruptions were temporary as the project moved down the beach.

Was the beach closed?

The restored beach is approximately 9,200 feet long, but only a smaller section of the beach was under active construction on any given day. The section under construction was clearly marked and closed to visitors. The rest of the beach was open as usual. Also, the construction was progressive, meaning it moved along the beach during construction.

Did the project affect boaters?

Boaters needed to be aware that pipeline, marked with buoys, was be submerged in the waters around the project.

What about the sandbags?

As part of construction, all the sandbags were removed from the beach.

What was the beach like when the project was completed?

The project restored a wide, dry sand beach.

Administration Dept:843-886-6428