April 2014

# Draft Environmental Assessment

## Beach Nourishment

## HURRICANE AND STORM DAMAGE REDUCTION PROJECT

## Venice Beach, Sarasota County, Florida

U.S. Army Corps
of Engineers
JACKSONVILLE DISTRICT

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# FINDING OF NO SIGNIFICANT IMPACT

## BEACH NOURISHMENT
## HURRICANE AND STORM DAMAGE REDUCTION PROJECT
## VENICE BEACH, SARASOTA COUNTY, FLORIDA

I have reviewed the Environmental Assessment (EA) for the proposed action. Based on information analyzed in the EA enclosed hereto, reflecting pertinent information obtained from cooperating Federal agencies having jurisdiction by law and/or special expertise, I conclude that the proposed action will have no significant impact on the quality of the human environment. Reasons for this conclusion are in summary:

a. Sites of cultural or historical significance will not be affected.

b. Terms and Conditions by the U.S. Fish and Wildlife Service and the National Marine Fisheries Service to prevent or minimize impacts to sea turtles and piping plovers will be implemented during and after project construction. There will be no adverse impacts to other endangered or threatened species. The project will not jeopardize the continued existence of any federally listed species if a hopper dredge is used.

c. State water quality standards will be met.

d. Measures to eliminate, reduce, or avoid potential impacts to fish and wildlife resources, including minimization of impacts to hardbottom communities, will be implemented during project construction.

e. The proposed project has been determined to be consistent to the maximum extent practicable with the Florida Coastal Zone Management Program.

f. The proposed project has been evaluated pursuant to the Migratory Bird Treaty Act, and the Migratory Bird Protection Policy will be implemented for this project. The Policy has been coordinated with the U.S. Fish and Wildlife Service and the State of Florida.

In consideration of the information summarized, I find that the proposed action will not significantly affect the human environment and does not require an Environmental Impact Statement.

_____
Date

_____
Alan Dodd
Colonel, U.S. Army
District Engineer

# ENVIRONMENTAL ASSESSMENT
# ON
# BEACH NOURISHMENT
# HURRICANE AND STORM DAMAGE REDUCTION PROJECT
# VENICE BEACH, SARASOTA COUNTY, FLORIDA

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# ON
# BEACH NOURISHMENT
# HURRICANE AND STORM DAMAGE REDUCTION PROJECT
# VENICE BEACH, SARASOTA COUNTY, FLORIDA

## 1 PROJECT PURPOSE AND NEED

The U.S. Army Corps of Engineers, Jacksonville District (USACE) prepared this Environmental Assessment (EA) to comply with the National Environmental Policy Act (NEPA) and to document project modifications since the initial Final Environmental Assessment was completed for the Beach Erosion Control Project Venice Beach, Sarasota, Florida, and the corresponding Finding of No Significant Impact (FONSI) was signed on June 4, 1992. The initial construction of this project was completed in May 1996, using approximately two million cubic yards of material from offshore shoals near Manasota Key, and the first periodic nourishment was completed in August 2005.

A FONSI associated with the Final Environmental Assessment, Offshore Borrow Sites, Sarasota County Beach Erosion Control Project, Sarasota County, Venice Beach, Florida, was signed in February 2005 for the first periodic nourishment, which occurred in August 2005. Approximately 670,000 cubic yards of sand were placed on the beach from offshore borrow areas near Casey Key.

The second periodic nourishment is proposed to occur in 2016 with placement of approximately 791,000 cy. Future nourishments are anticipated to be needed at ten year intervals and to require 1.620 million cubic yards of sand to maintain the authorized profile. The sand placement site for this project will take place in the same areas previously nourished in 1992 and 2005; however, the previously used borrow areas are no longer viable for use in future nourishment events. Borrow areas were identified for this project offshore of Venice Beach (see Figure 1), and this EA includes an assessment of the new borrow areas proposed for this project and includes updated information on the placement site.

### 1.1 PROJECT AUTHORITY.

Local interests in Sarasota County have explored comprehensive solutions to shoreline erosion problems since the early 1960s. The U.S. Senate and the U.S. House of Representatives adopted resolutions in 1964 requesting the Secretary of the Army, acting through the Chief of Engineers, to survey the Sarasota County shoreline and adjacent shorelines in support of beach erosion control, hurricane protection, and related efforts.

In 1984, the *Beach Erosion Control Study for Sarasota County, Florida, with Environmental Impact Statement* recommended a plan for constructing a protective beach and/or periodic nourishment along 2.4 miles of shoreline on Longboat Key, and 5.6 miles of shoreline on Manasota Key, in the vicinity of Venice, Florida. Congress authorized this plan in the Water Resources Development Act (WRDA) of 1986 at an estimated total project cost of $30,100,000. The project is authorized for 50 years of federal participation from the completion of the initial construction in 1996 through 2046. The cost apportionment for the project included Section 111 considerations for erosion resulting from the Caseys Pass Federal Navigation project constructed in 1937.

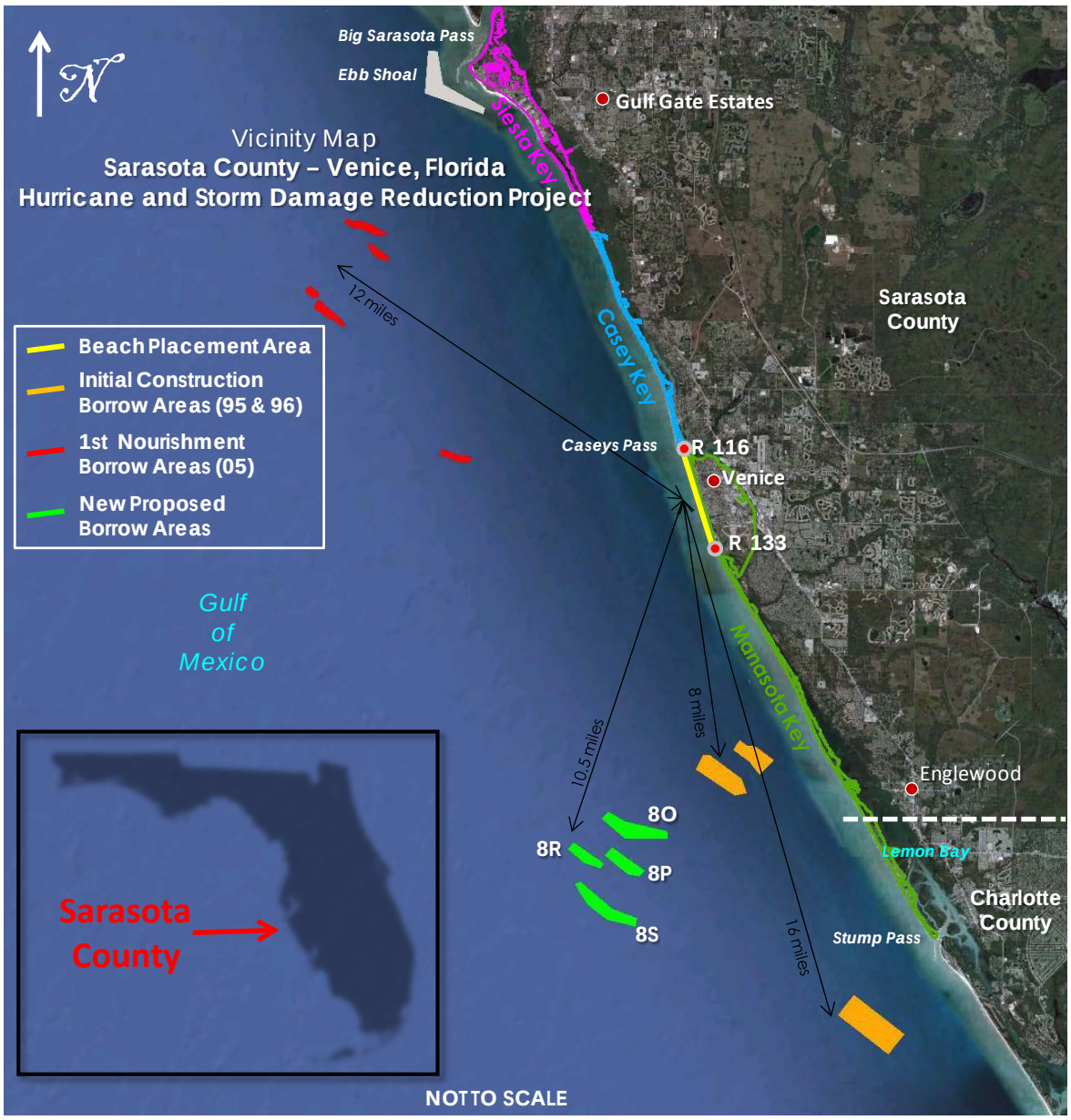
The project was modified in 1991/1992 to reduce the length of shoreline to 3.2 miles of shoreline on Manasota Key, to re-evaluate the volume requirements, and to address physical changes in the placement area. These changes are described in the *1992 Sarasota County, Florida Shore Protection Project Post Authorization Change* (PAC) *Report*. The segment of the project referred to as Brohard Beach (R-129 to R-133) was justified with a 20 foot berm width because of protection provided for the wastewater treatment plant located between R-132 and R-133.

The wastewater treatment facility was removed in 2005 and in 2010 a public park used for recreation opened up in its place. The Brohard segment was previously incrementally justified based upon the wastewater treatment plant. Because this expensive piece of infrastructure has been removed from the project area, the southern segment of the project from R-129 to R-133 is no longer incrementally justified based on HSDR purposes. Engineering Regulation (ER) 1105-2-100 requires that each reach of a project be incrementally justified. The non-Federal sponsor desires the Brohard segment remain in future nourishments at 100 percent non-Federal cost. The project footprint and beach fill design from R-116 to R-133 remains the same as previously authorized.

This project is now referred to as the Hurricane and Storm Damage Reduction (HSDR) Project. The non-Federal sponsor for this project is the City of Venice.

## 1.2 PROJECT LOCATION.

The project is located on the west coast of Florida near the middle of the peninsula, about 55 miles south of Tampa. The project is situated on Manasota Key, a barrier island separated from the mainland by tidal inlets (see **Figure 1: Project Vicinity Map**). The Florida Department of Environmental Protection (FDEP) reference monument limits are R-116 to R-133, for a total length of 3.2 miles.




Source: Google Aerial, 2010.

**Figure 1: Project vicinity map.**

### 1.3 PROJECT NEED OR OPPORTUNITY.

The coastline of Sarasota County consists of coastal barrier islands separated from the mainland by shallow tidal lagoons. Problems in this area consist of beach erosion, shoreline recession, and property damage. The previously used borrow areas are not viable for use in future nourishment events for the Venice HSDR Project. Following the 2005 nourishment event, a sand search was initiated to locate additional sand sources for this project. The four borrow areas shown in Figure 1 were identified, and they contain suitable sand in sufficient quantities for placement at Venice Beach for the 2016 and 2026 renourishments (approximately 1.86 million cubic yards). This volume is based on an erosion rate of 81,000 cy/year. The current fill

volume is estimated to be 791,000 cy for the proposed 2016 periodic nourishment with a renourishment interval of 10 years (see **Section 2.1** for additional information).

## 1.4 AGENCY GOAL OR OBJECTIVE.

This document evaluates the suitability of the four identified borrow areas for future nourishing of Venice Beach as part of the Venice HSDR Project to achieve the following goals:

- Reduce expected storm damages through beach nourishment and other project alternatives;
- Re-establish beaches as suitable recreational areas;
- Maintain suitable habitat for nesting sea turtles, invertebrate species, and shorebirds;
- Maintain commerce associated with beach recreation in Sarasota County; and
- Obtain beach-quality material in the most cost-effective and environmentally sustainable manner possible.

## 1.5 RELATED ENVIRONMENTAL DOCUMENTS.

References to environmental documents related to this project are provided below. These documents are incorporated into this EA by reference.

1. USACE. 1984. Beach Erosion Control Study for Sarasota County, Florida with Environmental Impact Statement.
    - This is the original decision document for the Venice HSDR project, recommending a plan for construction of a protective beach and/or periodic nourishment along 2.4 miles of shoreline on Longboat Key and 3.7 miles of shoreline on Manasota Key in the vicinity of Venice, Florida. The project was authorized in the WRDA of 1986 at an estimated total project cost of $30,100,000.

2. USACE. July 1991. Sarasota County, Florida Shore Protection Project General Design Memorandum (GDM).
    - This document summarized modifications including physical changes in the project area, new borrow area data, and economic changes. Additional erosion occurring between 1986 and 1991 increased the long-term erosion rate and the volume requirements. The shoreline length for beach nourishment was reduced primarily due to the usage of the shoreline evaluated. New geotechnical data for the borrow areas demonstrated that an increased overfill factor would need to be used. The project costs subsequently went up due to increased volume needs, as well as increased price levels for the required dredging equipment. The 1991 GDM excluded the Longboat Key segment and reduced the project length on Manasota Key to 3.2 miles, beginning 850 feet south of the Venice Inlet South Jetty and extending south to FDEP Monument R-133. The GDM also established that the cost for sand placed landward of the state established Erosion Control

Line (ECL) would be a non-federal responsibility. The modified authorized plan was estimated to cost $16,596,000 for initial construction and have an annual cost of $1,773,000 over the 50 years of Federal participation.

3. USACE. 1992. Sarasota County, Florida Shore Protection Project Post Authorization Change (PAC) Report.
    - This report supplements the detailed planning and engineering for construction in the *1991 GDM*, and documents the increase in cost for initial construction which exceeded the maximum allowable cost limit imposed by Section 902 of the WRDA of 1986. The *1992 PAC* is the most recent decision document for the project, and is the base for changes documented in the 2013 Draft Limited Reevaluation Report (LRR).

4. USACE. June 1992. Final Environmental Assessment, Beach Erosion Control Project, Venice Beach, Sarasota County, Florida.
    - This EA documented project modifications from the 1991 GDM and the 1992 PAC, including a reduction in the beach placement length, the selection of new borrow sites, and the use of a hopper dredge to complete the work. It proposed 1.0 acre of mitigation (artificial reefs) to offset direct impacts to nearshore hardbottoms as a result of beach fill.

5. USACE. January 1995. Alternate Borrow Area Located at Stump Pass for the Sarasota County Beach Erosion Control Project, Phase II, Sarasota County, Venice Beach, Florida.

6. USACE. February 2005. Final Environmental Assessment for Offshore Borrow Sites for the Sarasota County Beach Erosion Control Project, Sarasota County, Venice Beach, Florida.
    - This EA only evaluated new borrow sites. It did not consider the beach placement area.

## 1.6 DECISIONS TO BE MADE.

This Environmental Assessment will evaluate whether to utilize the four borrow areas for nourishing the Venice HSDR Project, and if so, evaluate alternatives to accomplish that goal.

## 1.7 SCOPING AND ISSUES.

The following issues were identified to be relevant to the proposed action and appropriate for detailed evaluation:

- Vegetation;
- Threatened and endangered species;
- Fish and wildlife resources;
- Essential fish habitat;
- Coastal barrier resources;

- Water quality;
- Air quality;
- Noise;
- Aesthetic resources;
- Recreation resources;
- Navigation;
- Historic and cultural resources;
- Native Americans;
- Socio-economics; and
- Public safety.

The environmental effect of the project on the beach placement area was assessed in the 1991 EIS and the 1992 EA. The current placement area is within the boundaries of the previous placement area, and the effects are anticipated to be similar to those assessed in previous documents. However, updated information regarding the effects of future nourishment activities through the life of the project (2046) are considered in this document where relevant.

### 1.8 PERMITS, LICENSES, AND ENTITLEMENTS.

The City of Venice will obtain a Joint Coastal Permit from the FDEP prior to project construction. Please refer to **Section 5, Compliance with Environmental Requirements**, for additional information on permits, licenses, and entitlements required for this action.

# 2 ALTERNATIVES

The alternatives section is the heart of this EA. This section describes in detail the no-action alternative, the proposed action, and other reasonable alternatives that were studied in detail. Based on the information and analysis presented in the sections on the Affected Environment and the Environmental Effects, this section presents the beneficial and adverse environmental effects of all alternatives in comparative form, providing a clear basis for choice among the options for the decision-makers and the public.

## 2.1 DESCRIPTION OF ALTERNATIVES.

The alternatives under consideration include the No Action alternative, the use of the proposed borrow areas for re-nourishment, the use of other local alternate borrow sites, the use of sand from other sources, and shore protection measures other than beach nourishment.

### 2.1.1 RENOURISHMENT USING THE PROPOSED BORROW AREAS [PREFERRED ALTERNATIVE]

The four proposed borrow areas are located approximately 10.5 miles southwest of the placement site at Venice Beach, near the Sarasota/Charlotte County line (see **Figure 1**). These borrow areas were identified during an extensive sand search, and were found to obtain approximately 1.86 million cy of beach-compatible sand. The sand will be placed along 3.2 miles of shoreline, from FDEP reference monuments R-116 to R-133. Transition sections to natural grade, or tapers, extend approximately 200 feet to the north and to the south of the project. The project is authorized to 2046, and additional nourishments are expected to be necessary at 10-year intervals. The anticipated fill volume for the 2016 nourishment is approximately 791,000 CY. Using a 10-year nourishment interval for planning purposes would require 810,000 CY for nourishment in 2026, and 810,000 CY for nourishment in 2036. These volumes are approximate, and may change based on observed erosion occurring at the project site. A new borrow area for the 2036 renourishment will be required as the estimated volume of beach-compatible sand in the currently identified borrow areas will not be sufficient for the final renourishment.

### 2.1.2 OTHER LOCAL ALTERNATE BORROW SITES [ALTERNATIVE B]

Other proposed sites were eliminated from further consideration for a number of reasons, including: close proximity to the shoreline could increase the rate of erosion; the quality and quantity of sand was not sufficient; distances from the borrow site to the disposal site was too great to be economical; or the proposed sites were discovered to have environmental features (reefs, hard bottoms) which made the removal of sand environmentally unsound.

### 2.1.3 OTHER SAND SOURCES [ALTERNATIVE C]

The use of upland sources, aragonite, and other distant sources are considerations for beach fill. However, their use is not feasible in this project. The most feasible sand sources are the proposed borrow sites. Trip hauling costs and/or bulk purchase prices make these alternative sand sources too expensive to be considered further for this project.

### 2.1.4 NO ACTION [STATUS QUO]

With the no action alternative, the Sarasota County shoreline will continue to erode. The no-action alternative does not provide the benefits needed to protect the coast from the effects of erosion and storm damage.

## 2.2 ISSUES AND BASIS FOR CHOICE.

As mentioned in **Section 1.3**, beach erosion and shoreline recession threaten properties along the sand placement site. Since the sand in the previously used borrow areas is depleted, new sand sources were identified for use in nourishing the beach to protect property and to provide habitat for species utilizing beach and dune systems. Alternative A includes the only sand source that is feasible for use in nourishing this beach.

## 2.3 TYPE OF DREDGING EQUIPMENT.

The U.S. Army Corps of Engineers does not normally specify the type of dredging equipment to be used. This is generally left to the dredging industry to offer the most appropriate and competitive equipment available at the time. Never-the-less, certain types of dredging equipment are normally considered more appropriate depending on the type of material, the depth of the borrow site, the amount of material, the distance to the disposal or placement site, the wave-energy environment, etc. A more detailed description of types of dredging equipment and their characteristics can be found in Engineer Manual, EM 1110-2-5025, *Engineering and Design - Dredging and Dredged Material Disposal*. This Engineer Manual is available on the internet at http://www.usace.army.mil/publications/eng-manuals/em1110-2-5025/toc.htm.

## 2.4 ALTERNATIVES ELIMINATED FROM DETAILED EVALUATION

The 1985 EIS considered a number of alternatives that were ultimately eliminated from detailed evaluation. Alternatives B and C were considered in detail in the 2005 EA, and were eliminated from further consideration in this document for not meeting the project goals. Alternative A (the Preferred Alternative) and the No Action Alternative were carried further in this EA for detailed evaluation.

## 2.5 COMPARISON OF ALTERNATIVES

**Table 2** lists alternatives considered and summarizes the major features and consequences of the proposed action and alternatives. See **Section 4, Environmental Effects** for a more detailed discussion of impacts of alternatives.

## 2.6 MITIGATION

In developing the borrow area design, USACE avoided areas with high potential for hardbottom habitats. Following the identification of the four shoals in the Preferred Alternative, USACE conducted sidescan sonar, multi-beam, and sub-bottom profile surveys to better assess the hardbottom habitats located near the four borrow sites. The surveys did not identify any

habitats considered to be “significant” hardbottoms according to the 2003 NMFS Gulf of Mexico Regional Biological Opinion (as amended in 2005 and 2007). The borrow sites were designed to allow for 400 foot buffers around the existing low-relief hardbottom habitats.

An artificial reef totaling 1.8 acres was constructed in 1997 by the City of Venice as mitigation for hardbottom habitat impacted as part of the initial construction of the project. The artificial reef was constructed offshore of Florida Department of Environmental Protection (FDEP) monument R-130 in water depths from –20 to –22 feet. The City had an extensive amount of concrete material available for construction of the mitigation reef as a result of their 1995 stormwater management system improvements; therefore, a total of 3.14 acres of artificial reef was ultimately constructed.

Between October 2007 and March 2008, the City of Venice Beach also constructed an additional 7.3 acres of artificial reefs to compensate for impacts associated with past nourishment events at the project location. The artificial reefs were constructed of limestone boulders and are located offshore of Venice Beach, with the northern four located between FDEP Reference Monuments R-119 and R-122, and the fifth located at FDEP Reference Monument R-134.

The proposed action will not impact fish and wildlife resources requiring compensatory mitigation.

**Table 1: Summary of direct and indirect impacts.**

| ALTERNATIVE<br><br>ENVIRONMENTAL FACTOR | Renourishment Using the Proposed Borrow Areas (Preferred Alternative) | No Action (Status Quo) |
|---|---|---|
| VEGETATION | No sessile macroalgae was noted during surveys of the borrow areas. Landscape features damaged during construction operations outside the work areas at the beach placement area will be restored. | Possible erosion of dune vegetation, depending upon the extent of the erosion at the placement site. |
| PROTECTED SPECIES | Direct adverse impacts include:<br>• Alteration of the beach face resulting in potential adverse impact to sea turtle nesting and hatching success (including effects from grade changes, sediment material, over-compaction, escarpment formation, artificial lighting during construction) resulting in potential "incidental" take of sea turtles<br>• Potential taking of sea turtles with hopper dredge (if utilized)<br>• Possible encounters with manatees by dredge and support vessels during dredge and disposal operations<br>Direct positive impacts:<br>• Nesting area along project reach would increase with nourishment activities<br>Indirect adverse impacts:<br>• Burial of mitigated nearshore hardbottom habitat that serves as foraging habitat for juvenile sea turtles | Loss of sea turtle nesting and piping plover foraging beach. |
| HARDGROUNDS | A 400-ft. buffer will be established around hardground habitats adjacent to the borrow areas to prevent impacts. Mitigation provided following previous nourishment activities for impacts to nearshore hardgrounds associated with placement activities. | Potential increase in nearshore hardbottom habitat due to continued erosion of nearshore sediments. |

| ALTERNATIVE<br><br>ENVIRONMENTAL FACTOR | Renourishment Using the Proposed Borrow Areas (Preferred Alternative) | No Action (Status Quo) |
|---|---|---|
| FISH AND WILDLIFE RESOURCES | Short-term impact to beach habitat due to burial/disturbance, but long term benefit through increase in beach habitat for nesting shorebirds and benthic fauna. Temporary impact to fish in the water column and benthic resources during dredging activities. | Continued loss of beach habitat. |
| ESSENTIAL FISH HABITAT | A 400-ft. buffer will be established around hardground habitats to prevent impacts to EFH at the borrow area. Short-term turbidity would be present at the borrow area and placement site. | No impacts would occur. |
| COASTAL BARRIER RESOURCES | Coastal barrier resources (FL-71P and P21AP) would be enhanced through restoration of natural habitat. No structural components are proposed with this project. | Continued loss of beach habitat associated with CBRA Unit P21AP. |
| WATER QUALITY | Direct adverse impacts include a temporary increase in turbidity adjacent to the borrow site and beach fill area. Turbidity would be monitored during project construction and work would cease if turbidity is not in compliance with Florida water quality standards. | No impacts to water quality would occur. |
| AIR QUALITY | Direct adverse impacts include small, localized, temporary increases in concentrations of nitrogen dioxide (NO2), SO2, CO, VOCs, and PM mostly associated with the dredge plant. | No impacts would occur. |
| NOISE | Temporary increase in noise at the borrow area and at the placement sites. | No impacts would occur. |

| ALTERNATIVE<br><br>ENVIRONMENTAL FACTOR | Renourishment Using the Proposed Borrow Areas (Preferred Alternative) | No Action (Status Quo) |
|---|---|---|
| AESTHETIC RESOURCES | Temporary decrease in the aesthetic appeal of the beach while placement activities occur; long-term increase in the appearance of the beach. | Long-term decline in appearance of the beach as it continues to erode. |
| RECREATION RESOURCES | Inability to utilize beach during construction; long-term benefit to recreational interests using the beach. Minor temporary impact to recreational boaters required to avoid the dredge and associated vessels during dredging activities. | Long-term decline in beach available for use by recreational interests. |
| NAVIGATION | Temporary impacts to vessels utilizing the Gulf of Mexico near the borrow areas and utilizing the nearshore areas during sand pumpout. | No impacts would occur. |
| HISTORIC AND CULTURAL RESOURCES | No adverse effects to potential historic properties with a minimum 250 foot buffer around significant targets identified within the nearshore placement and offshore borrow areas, per SHPO coordination. | No adverse effects to historic properties. |
| NATIVE AMERICANS | No adverse effects to Native American properties. | No adverse effects to Native American properties. |

# 3 AFFECTED ENVIRONMENT

The Affected Environment section succinctly describes the existing environmental resources of the areas that would be affected if any of the alternatives were implemented. This section describes only those environmental resources that are relevant to the decision to be made. It does not describe the entire existing environment, but only those environmental resources that would affect or that would be affected by the alternatives if they were implemented. This section, in conjunction with the description of the "no-action" alternative forms the base line conditions for determining the environmental impacts of the proposed action and reasonable alternatives.

## 3.1 GENERAL ENVIRONMENTAL SETTING

The preferred borrow areas that would be used for the project are located approximately 8.6 to 11.9 miles southwest of the sand placement site offshore of the Sarasota/Charlotte County line. The submerged terrain of the borrow areas consists of the floor of the Gulf of Mexico. The sea floor at these locations is characterized by the presence of undulating topography with a large sandy shoal rising to an elevation of about 8 to 11 feet above the surrounding terrain (see **Figure 2)**. Depths at the borrow areas range from -27 feet to -52 feet MSL.

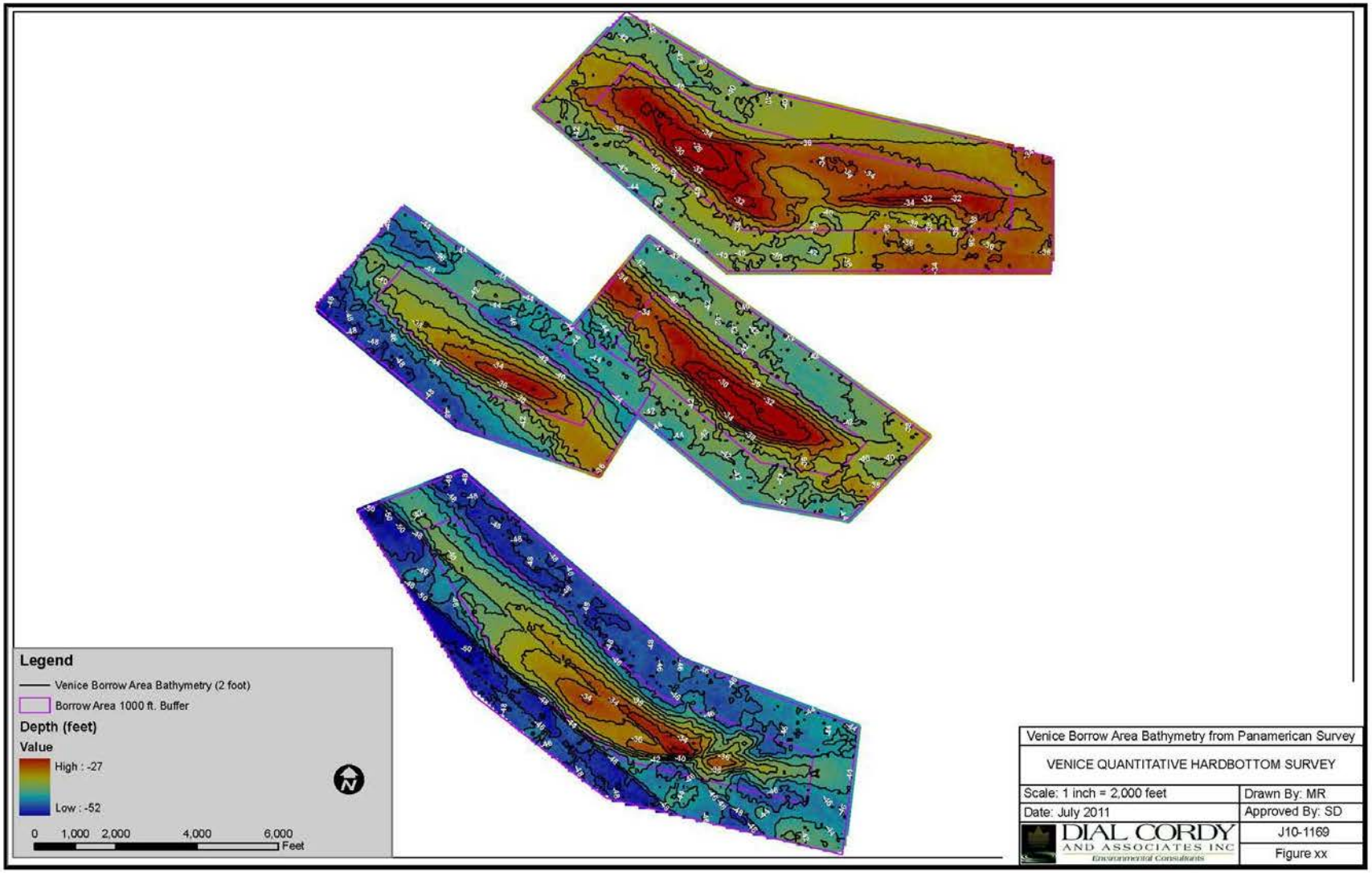



**Figure 2. Bathymetry found at the four borrow areas.**

## 3.2 VEGETATION

Studies conducted in 2010 and 2011 of the hardbottom habitat near the borrow areas found little vegetation was present at any site. Only *Sargassum* sp. and turf algae were documented during the study (DCA 2011).

## 3.3 THREATENED AND ENDANGERED SPECIES

**Table 2** provides listed threatened and endangered species potentially found in the project areas. No critical habitat for the species listed in **Table 2 i**s located in the project area.

**Table 2. Protected species potentially found in the vicinity of the project area.**

| Common Name | Scientific Name | Federal Status |
|---|---|---|
| Right Whale | *Eubalaena glacialis* | Endangered |
| Sei Whale | *Balaenoptrs Borealis* | Endangered |
| Sperm Whale | *Physeter macrocephalus catadon* | Endangered |
| Finback Whale | *Balaenopters physalus* | Endangered |
| Humpback Whale | *Megaptera novaeangliae* | Endangered |
| Hawksbill Turtle | *Eretmochelys imbricata* | Endangered |
| Kemp's Ridley Turtle | *Lepidochelys kempii* | Endangered |
| Green Turtle | *Chelonia mydas* | Endangered |
| Leatherback Turtle | *Dermochelys coriacea* | Endangered |
| Loggerhead Turtle | *Caretta caretta* | Threatened |
| Smalltooth Sawfish | *Pristis pectinata* | Endangered |
| Piping Plover | *Charadrius melodus* | Threatened |

### 3.3.1 SEA TURTLES

Five species of sea turtles are found in the Gulf of Mexico. These species include the leatherback (*Dermochelys coriacea*), hawksbill (*Eretmochelys imbricate*), green (*Chelonia mydas*), loggerhead (*Caretta caretta*), and Kemp's ridley (*Lepidochelys kempii*).

#### 3.3.1.1 Nesting Habitat

Three species of sea turtles are known to nest in the project area: loggerhead, green, and Kemp's ridley. The loggerhead makes up the majority of sea turtle nests at Venice Beach, but greens and Kemp's ridleys also nest there. See **Table 2** for more information.

**Table 3. Sea turtle nesting data for Venice Beaches, 2001-2010.** Data courtesy of the FWC Fish and Wildlife Research Institute, Statewide Nesting Beach Survey Program. Source: FWC/FWRI Statewide Nesting Beach Survey Program Database as of 9 April 2014.

| | | | | | LOGGERHEAD | | | | GREEN | | | | KEMP'S RIDLEY | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| YEAR | COUNTY | BEACH | SURVEY START DATE | SURVEY END DATE | NEST | FALSE CRAWL | FIRST NEST DATE | LAST NEST DATE | NEST | FALSE CRAWL | FIRST NEST DATE | LAST NEST DATE | NEST | FALSE CRAWL | FIRST NEST DATE | LAST NEST DATE |
| 2001 | Sarasota | Venice Beaches | 5/1/01 | 10/15/01 | 274 | 353 | 5/1/01 | 8/17/01 | 0 | 0 | | | 0 | 0 | | |
| 2002 | Sarasota | Venice Beaches | 5/1/02 | 10/1/02 | 184 | 215 | 5/3/02 | 8/16/02 | 0 | 0 | | | 0 | 0 | | |
| 2003 | Sarasota | Venice Beaches | 5/1/03 | 10/21/03 | 252 | 312 | 5/9/03 | 8/28/03 | 0 | 0 | | | 0 | 0 | | |
| 2004 | Sarasota | Venice Beaches | 5/1/04 | 10/14/04 | 187 | 236 | 5/17/04 | 8/15/04 | 0 | 0 | | | 0 | 0 | | |
| 2005 | Sarasota | Venice Beaches | 4/1/05 | 10/20/05 | 195 | 231 | 5/11/05 | 8/17/05 | 0 | 1 | | | 0 | 0 | | |
| 2006 | Sarasota | Venice Beaches | 5/1/06 | 10/28/06 | 173 | 110 | 5/5/06 | 8/19/06 | 0 | 0 | | | 0 | 0 | | |
| 2007 | Sarasota | Venice Beaches | 5/1/07 | 8/29/07 | 163 | 191 | 5/11/07 | 8/8/07 | 2 | 2 | 6/17/07 | 7/4/07 | 0 | 0 | | |
| 2008 | Sarasota | Venice Beaches | 5/1/08 | 11/6/08 | 240 | 196 | 5/10/08 | 8/29/08 | 1 | 1 | 9/5/08 | 9/5/08 | 0 | 0 | | |
| 2009 | Sarasota | Venice Beaches | 5/1/09 | 9/10/09 | 175 | 130 | 5/10/09 | 8/15/09 | 0 | 0 | | | 1 | 0 | 6/5/09 | 6/5/09 |
| 2010 | Sarasota | Venice Beaches | 5/1/10 | 9/18/10 | 215 | 280 | 5/4/10 | 8/27/10 | 1 | 1 | 6/15/10 | 6/15/10 | 0 | 0 | | |
| 2011 | Sarasota | Venice Beaches | 5/1/11 | 9/8/11 | 268 | 261 | 5/4/11 | 8/17/11 | 0 | 0 | | | 0 | 0 | | |
| 2012 | Sarasota | Venice Beaches | 5/1/12 | 9/26/12 | 424 | 277 | 4/25/12 | 8/14/12 | 0 | 0 | | | 0 | 0 | | |
| 2013 | Sarasota | Venice Beaches | 5/1/13 | 9/26/13 | 316 | 208 | 5/8/13 | 9/12/13 | 1 | 0 | 7/31/13 | 7/31/13 | 0 | 0 | | |

| Boundary Description | Survey Length (km) | Days/Wk Surveyed |
|---|---|---|
| Venice Inlet, RM-115 (27.11249, -82.46758) to Casperson Beach, RM-138 (27.05508, -82.44179) | 7.4 | 7 |

#### 3.3.1.2 Offshore Habitat

All five sea turtle species found in the Gulf of Mexico waters could utilize the waters surrounding the borrow areas. Sea turtles are known to forage on benthic invertebrates at hardground habitats. Hardground habitats located at the borrow areas are discussed in further detail in **Section 3.3.2**.

### 3.3.2 MANATEES

The Florida manatee is a subspecies of the West Indian manatee (*Trichechus manatus*) and can be found in tropical and subtropical coastal waters of the southeastern United States, the Gulf of Mexico, and the Caribbean Sea (Lefebvre and O'Shea 1995), including waters near the project area. Manatees may travel great distances during warm months and have been spotted in Massachusetts and Texas (USFWS 2007). Manatees are a sub-tropical species and are cold intolerant. In Florida, they prefer warm-water sites during the winter, only leaving to feed during warming trends. Manatees congregate near warm water sites, such as natural springs, power plants, and deep canals, when temperatures drop. Florida manatees are found in freshwater, brackish, and marine environments, including coastal tidal rivers and streams, mangrove swamps, salt marshes, freshwater springs, and vegetated bottoms. Manatees are herbivores and feed on aquatic vegetation. Preferred feeding areas in coastal and riverine habitats appear to be shallow grass beds near deep channels. Primary threats include watercraft-related strikes, entanglement in fishing lines and crab pot lines, exposure to cold, and red tide (USFWS 2007).

### 3.3.3 SMALLTOOTH SAWFISH

Smalltooth sawfish are found in peninsular Florida, and are typically found off the extreme southern portion of the state. The current distribution is centered in the Everglades National Park, including Florida Bay. They have been historically caught as bycatch in commercial and recreational fisheries throughout their historic range; however, such bycatch is now rare due to population declines and population extirpations. Between 1990 and 1999, only four documented takes of smalltooth sawfish occurred in shrimp trawls in Florida (Simpfendorfer 2000). The borrow areas are approximately 15 miles from the nearest smalltooth sawfish critical habitat, and the placement site is approximately 20 miles from critical habitat (see **Figure 3**).

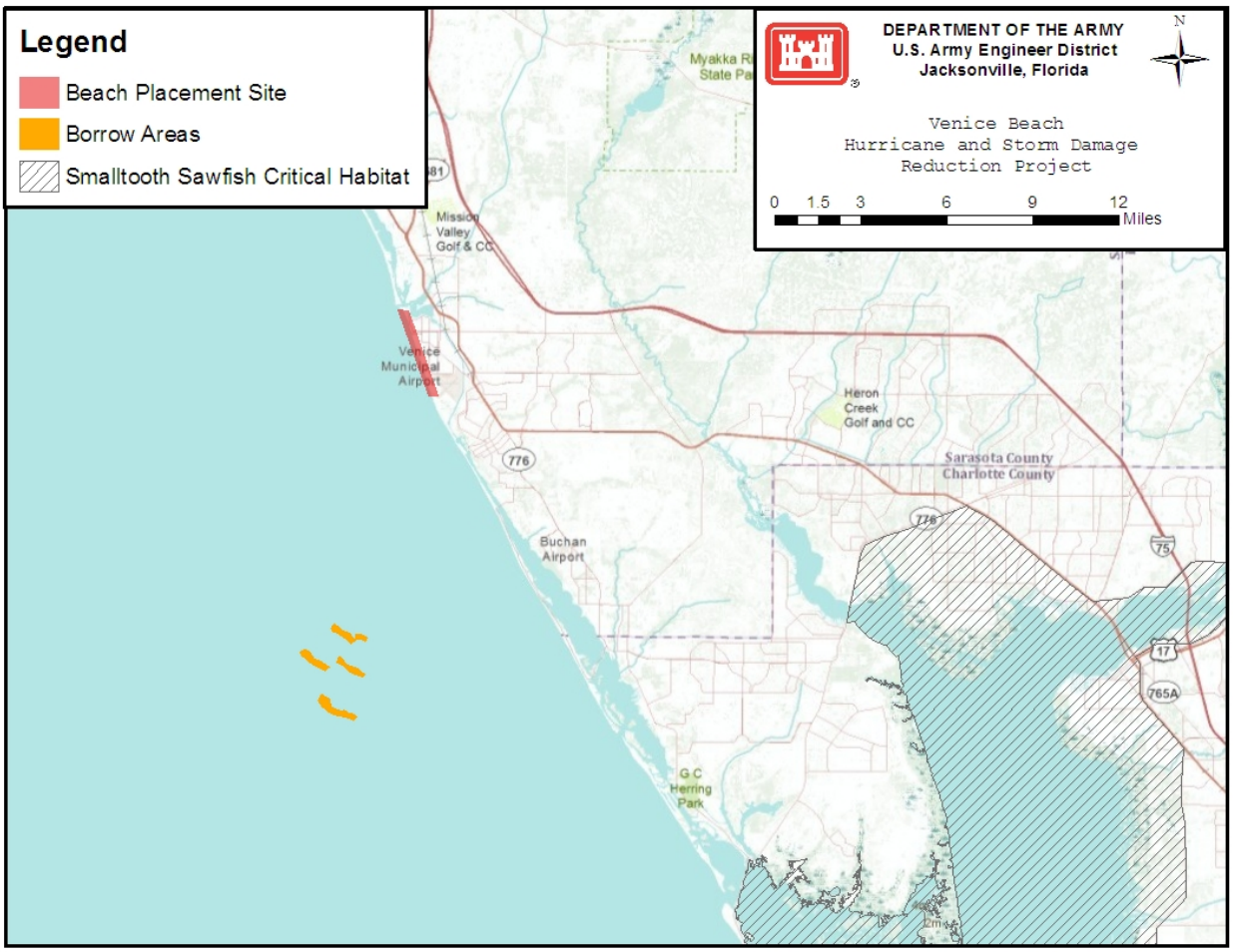



**Figure 3. Smalltooth sawfish critical habitat in the project area**.

### 3.3.4 PIPING PLOVER

Piping plovers (*Charadrius melodus*) are small shorebirds approximately seven inches long, with sand-colored plumage on their backs and crown, and white underparts. During winter, birds lose the black bands, their legs fade to pale yellow, and the bill becomes mostly black. Piping plovers winter along the Gulf Coast of Florida's beaches, primarily on intertidal beaches with sand and/or mud flats with no or very sparse vegetation (USFWS 2011). Piping plovers are also known to utilize inlets as wintering habitat. Wintering populations of piping plover are listed as a threatened species under the Endangered Species Act. The placement site is approximately 28 miles northwest of piping plover critical habitat unit FL-22, Cayo Costa, and approximately 36 miles southeast of critical habitat unit FL-21, Egmont Key (see **Figure 4)**. The northern project limit abuts Venice Inlet, and the southern limit includes the shoreline adjacent to the Venice Municipal Airport. However, there are no publicly owned, natural areas within the project boundaries that exhibit the features associated with optimal piping plover habitat.

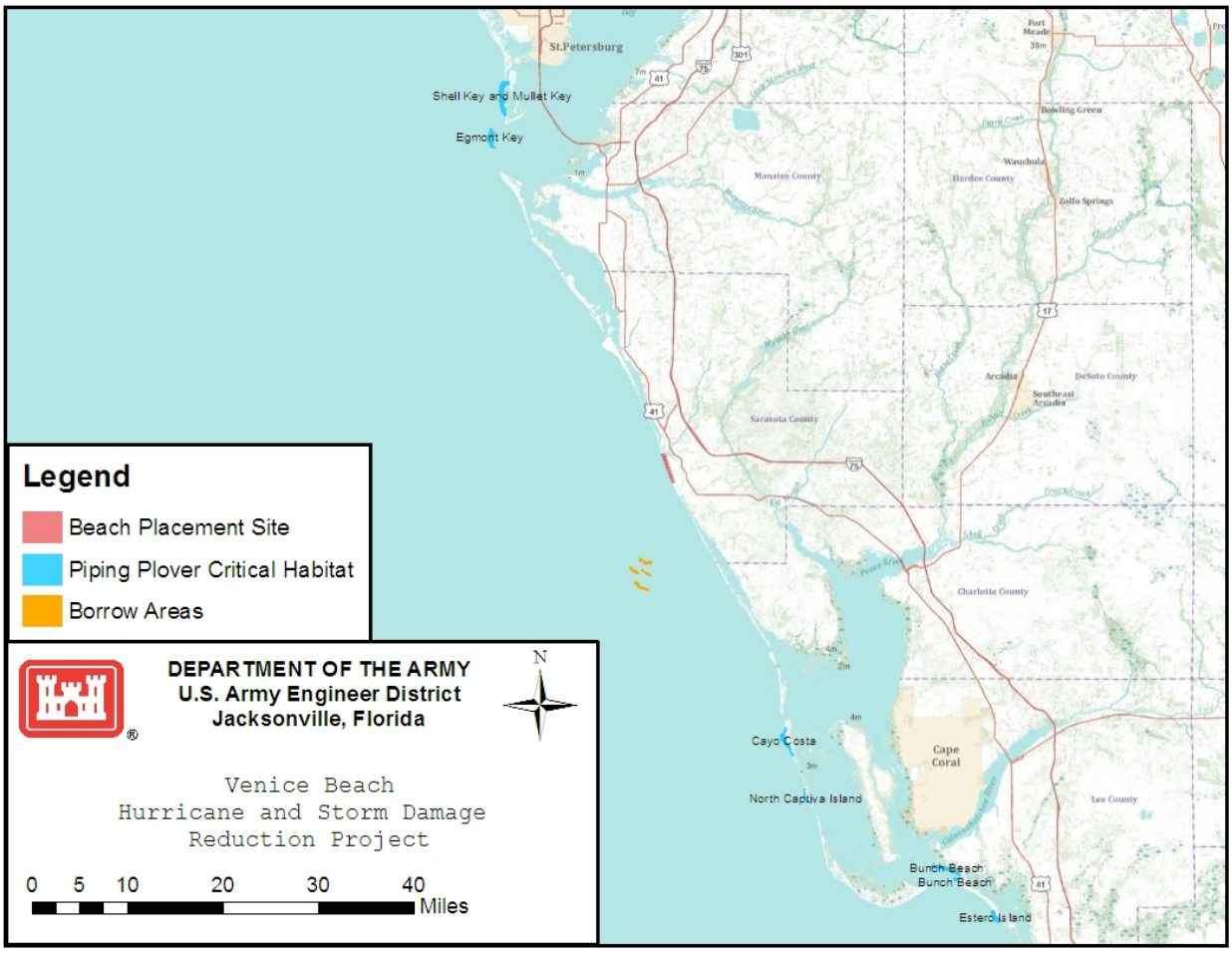



**Figure 4. Location of piping plover critical habitat units in the vicinity of the project area**.

### 3.4 MARINE MAMMALS

The marine mammals of the Gulf of Mexico are represented by members of the taxonomic order Cetacea, which is divided into the suborders Mysticeti (i.e., baleen whales) and Odontoceti (i.e., toothed whales), as well as the order Sirenia, which includes the manatee. Within the Gulf of Mexico, there are 28 species of cetaceans (7 mysticete and 21 odontocete species) and 1 sirenian species, the manatee (Jefferson *et al.* 1992; Davis *et al.* 2000). Bottlenose dolphins (*Tursiops truncatus)* and Atlantic spotted dolphins (*Stenella frontalis*) are common in shallow Gulf waters [up to 656 ft (200 m) deep]. Bottlenose dolphins are frequently observed in the study area and are a common inhabitant of the continental shelf and upper slope waters of the northern Gulf of Mexico. Bottlenose dolphins are opportunistic feeders, taking a wide variety of fishes, cephalopods, and shrimp (Davis and Fargion 1996; Jefferson and Schiro 1997; Wells and Scott 1999). There appears to be two ecotypes of bottlenose dolphins, a coastal form and an offshore form (Hersh and Duffield 1990; Mead and Potter 1990). The Atlantic spotted dolphin is endemic to the Atlantic Ocean in tropical to temperate waters (Perrin *et al.* 1987, 1994a). They are known to feed on a wide variety of fishes, cephalopods, and benthic invertebrates (Leatherwood and Reeves 1983; Jefferson *et al.* 1993; Perrin *et al.* 1994). In the Gulf of Mexico they are commonly found in continental shelf waters less than

6,556.2 ft (200 m) in depth. The sperm whale is common in oceanic waters of the northern Gulf of Mexico and may be a resident species, whereas the baleen whales are considered rare or extralimital in the Gulf (Würsig *et al.* 2000). The Florida manatee (*Trichechus manatus latirostris*) inhabits only coastal marine, brackish, and freshwater areas. Threatened and endangered marine mammals are discussed further in **Section 3.3**.

## 3.5 BIRDS

More than 70 species of birds have been observed in the Gulf of Mexico and the coastal regions of southwest Florida during studies from 1996 to 2005 (Davis and Fargion 1996; Davis *et al.* 2000; Russell 2005). The population status and movements of pelagic bird species are difficult to determine because surveys must be conducted offshore under marine field conditions and bird movement is weather dependent. Very few surveys solely dedicated to bird behavior and populations are conducted in the Gulf of Mexico. Many marine mammal surveys contain ancillary pelagic and migratory bird observations. In the Gulf of Mexico, marine mammal movements and pelagic bird species are often associated with the increased primary productivity of the Loop eddies and cold core currents (Ribic *et al.* 1997; Wursig *et al.* 2000; Russell 2005).

Federal regulatory protection of birds falls under the Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703-712) and the U.S. Endangered Species Act (ESA) 9(a) (1) (B). All birds listed in the Gulf studies are protected under the MBTA. These include members of the seabird guild, which represents a wide range of species dependent on the resources of the pelagic zone in the Gulf of Mexico. Much of their time is spent in or over water and they are capable of staying far from land for long periods. Most of these birds have adaptive salt glands that allow them to regulate the salt content in their blood (Ehrlich *et al.* 1988). Most species in this guild are colonial nesters that leave the nest to venture far from natal areas. Some seabirds spend significant portions of their life cycle offshore and may occur in the project area, such as the magnificent frigatebird (*Fregata magnificens*), greater shearwater (*Puffinus gravis*), sooty shearwater (*P. grisseus*), Audubon's shearwater (*P. lherminieri*), manx shearwater (*P. puffiinus*), masked booby (*Sula dactylatra*), northern gannet (*Morus bassanus*), Wilson's storm-petrel (*Oceanites oceanicus*), and band-rumped storm-petrel (*Oceanodrama castro*). Gulls and terns, pelicans, and cormorants divide their time more or less equally between offshore and coastal waters (Ehrlich *et al.* 1988) and may occur in the project area.

The west Florida coast serves as a principal route of the Atlantic Flyway for more than 60 migratory landbird species. Many of the birds that breed east of the Allegheny Mountains move southward in fall, through northwestern Florida, crossing the Gulf to the coastal regions of central Mexico where they follow a land route for the remainder of the journey to Cuba or South America (Lincoln *et al.* 1998). Many of the migrants that could pass through the project area are unlikely to stop except to rest on a dredge or boat during migration. Under this condition, all are protected by MBTA.

## 3.6 ESSENTIAL FISH HABITAT

Pursuant to the Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), the Gulf of Mexico Fisheries Management Council (GMFMC, 1998) has designated marine areas of non-vegetated bottoms, live bottoms, and water columns within the study area as EFH. The Magnuson-Stevens Fishery Conservation and Management Act requires federal agencies to consult with NMFS on activities that may adversely affect EFH. This EA is prepared consistent with guidance provided by the NMFS Southeast Regional Office to USACE, Jacksonville District regarding coordinating EFH consultation requirements with NEPA (NMFS, 1999).

EFH at the borrow areas consists of a marine water column with an unconsolidated sand substrate. Some scattered, patchy low relief hardgrounds are found within a 1000 foot buffer of the borrow areas. Hardgrounds provide substrate for benthic organisms, crevices where organisms can seek protection, and foraging habitat for a number of aquatic species. USACE contracted sidescan, multibeam, and sub-bottom profile surveys of the borrow areas in 2010. Studies conducted by Panamerican Consultants, Inc., and Dial Cordy and Associates, Inc., in Fall 2010 to Spring 2011 analyzed the sidescan sonar survey data, prepared a mosaic of the substrate features, conducted towed video transects to verify hardbottom, and collected in situ data from representative hardbottom habitats within and/or adjacent to the borrow areas. The hardground habitats near the proposed borrow areas were found to have less than an average of 1.5 feet vertical elevation above the sand over a 150 foot horizontal distance, and they do not have algae growing on them. The relatively low-relief hardgrounds (<40 cm) have a low diversity of scleractinians, octocorals, and sponges common to offshore habitats of the west coast of Florida in the vicinity of the proposed borrow sites. The full report is included in **Appendix E**.

Species managed by the National Marine Fisheries Service that may occur within the project area are listed in **Table 4**.

**Table 4. Summary of EFH designation for species in the project area.**

| Species | Scientific Name | Young of Year or Neonate | Juveniles | Adults |
|---|---|---|---|---|
| **Coral Species** | | X | X | X |
| **Shrimp Fishery** | | | | |
| brown shrimp | *Farfantepenaeus aztecus* | X | X | X |
| pink shrimp | *F. duorarum* | X | X | X |
| **Stone Crab Fishery** | | | | |
| Florida stone crab | *Menippe mercenaria* | X | X | X |
| **Spiny Lobster Fishery** | | | | |
| spiny lobster | *Panulirus argus* | X | X | X |
| **Red Drum Fishery** | | | | |
| red drum | *Sciaenops ocellatus* | X | X | X |
| **Reef Fish Fishery** | | | | |

| Species | Scientific Name | Young of Year or Neonate | Juveniles | Adults |
|---|---|---|---|---|
| **Balistidae - Triggerfishes** | | | | |
| Gray triggerfish | *Balistes capriscus* | X | X | X |
| **Carangidae - Jacks** | | | | |
| Greater amberjack | *Seriola dumerili* | X | X | X |
| Lesser amberjack | *Seriola fasciata* | X | X | X |
| Almaco jack | *Seriola rivoliana* | X | X | X |
| Banded rudderfish | *Seriola zonata* | X | X | X |
| **Labridae - Wrasses** | | | | |
| Hogfish | *Lachnolaimus maximus* | X | X | X |
| **Lutjanidae - Snappers** | | | | |
| Queen snapper | *Etelis oculatus* | X | X | X |
| Mutton snapper | *Lutjanus analis* | X | X | X |
| Schoolmaster | *Lutjanus apodus* | X | X | X |
| Blackfin snapper | *Lutjanus buccanella* | X | X | X |
| Red snapper | *Lutjanus campechanus* | X | X | X |
| Cubera snapper | *Lutjanus cyanopterus* | X | X | X |
| Gray (mangrove) snapper | *Lutjanus griseus* | X | X | X |
| Dog snapper | *Lutjanus jocu* | X | X | X |
| Mahogany snapper | *Lutjanus mahogoni* | X | X | X |
| Lane snapper | *Lutjanus synagris* | X | X | X |
| Silk snapper | *Lutjanus vivanus* | X | X | X |
| Yellowtail snapper | *Ocyurus chrysurus* | X | X | X |
| Wenchman | *Pristipomoides aquilonaris* | X | X | X |
| Vermilion snapper | *Rhomboplites aurorubens* | X | X | X |
| **Malacanthidae - Tilefishes** | | | | |
| Goldface tilefish | *Caulolatilus chrysops* | X | X | X |
| Blackline tilefish | *Caulolatilus cyanops* | X | X | X |
| Anchor tilefish | *Caulolatilus intermedius* | X | X | X |
| Blueline tilefish | *Caulolatilus microps* | X | X | X |
| (Golden) Tilefish | *Lopholatilus chamaeleonticeps* | X | X | X |
| **Serranidae - Groupers** | | | | |
| Dwarf sand perch | *Diplectrum bivittatum* | X | X | X |
| Sand perch | *Diplectrum formosum* | X | X | X |
| Rock hind | *Epinephelus adscensionis* | X | X | X |
| Speckled hind | *Epinephelus drummondhayi* | X | X | X |
| Yellowedge grouper | *Epinephelus flavolimbatus* | X | X | X |
| Red hind | *Epinephelus guttatus* | X | X | X |

| Species | Scientific Name | Young of Year or Neonate | Juveniles | Adults |
|---|---|---|---|---|
| Goliath grouper | *Epinephelus itajara* | X | X | X |
| Red grouper | *Epinephelus morio* | X | X | X |
| Misty grouper | *Epinephelus mystacinus* | X | X | X |
| Warsaw grouper | *Epinephelus nigritus* | X | X | X |
| Snowy grouper | *Epinephelus niveatus* | X | X | X |
| Nassau grouper | *Epinephelus striatus* | X | X | X |
| Marbled grouper | *Epinephelus inermis* | X | X | X |
| Black grouper | *Mycteroperca bonaci* | X | X | X |
| Yellowmouth grouper | *Mycteroperca interstitialis* | X | X | X |
| Gag | *Mycteroperca microlepis* | X | X | X |
| Scamp | *Mycteroperca phenax* | X | X | X |
| Yellowfin grouper | *Mycteroperca venenosa* | X | X | X |
| **Coastal Migratory Pelagic Fishery** | | | | |
| bluefish | *Pomatomus saltatrix* | | | X |
| dolphin | *Coryphaena hippurus* | | | X |
| cobia | *Rachycentron canadum* | X | X | X |
| king mackerel | *Scomberomorus cavalla* | X | X | X |
| little tunny | *Euthynnus alletteratus* | X | X | X |
| Spanish mackerel | *Scomberomorus maculatus* | X | X | X |
| **Highly Migratory Pelagic Fishery** | | | | |
| Atlantic sharpnose shark | *Rhizoprionodon terraenovae* | X | X | X |
| blacknose shark | *Carcharhinus acronotus* | | X | X |
| blacktip shark | *Carcharhinus limbatus* | X | X | X |
| bull shark | *Carcharhinus leucas* | | X | X |
| dusky | *Carcharhinus obscurus* | | X | X |
| great hammerhead shark | *Sphyrna mokarran* | X | X | X |
| lemon shark | *Negaprion brevirostris* | | X | X |
| silky shark | *Carcharhinus falciformis* | X | X | X |
| spinner shark | *Carcharhinus brevipinna* | | X | X |
| nurse shark | *Ginglymostoma cirratum* | | X | |
| tiger shark | *Galeocerdo cuvieri* | | X | X |

## 3.7 COASTAL BARRIER RESOURCES

The Coastal Barrier Resources Act (CBRA) of 1982 and the Coastal Barrier Resources Improvement Act (CBRIA) of 1990 limit Federally subsidized development within the CBRA Units to limit the loss of human life by discouraging development in high risk areas, to reduce wasteful expenditures of Federal resources, and to protect the natural resources associated with coastal barriers. CBRIA provides development goals for undeveloped coastal property held in public ownership, including wildlife refuges, parks, and other lands set aside for conservation

("otherwise protected areas," or OPAs). These public lands are excluded from most of the CBRA restrictions, although they are prohibited from receiving Federal Flood Insurance for new structures. The extreme southern portion of the sand placement site is located within OPA Unit P21AP (see **Table 5** and **Figure 5**).

**Table 5. List of Coastal Barrier Resource System OPAs in the project area and their associated acreages.**

| Unit Number | Name | CBRA Unit Type | Acreage |
|---|---|---|---|
| FL-71P | Venice Inlet | Otherwise Protected Area | 123.4 |
| P21AP | Manasota Key | Otherwise Protected Area | 719.1 |


**Figure 5. Map of Coastal Barrier Resources located in the vicinity of the beach placement area**.

### 3.8 WATER QUALITY

The State of Florida lists the areas waters as Class III, which is suitable for recreation and the propagation and management of fish and wildlife.

### 3.9 AIR QUALITY

The proposed borrow areas are approximately 8 to 12 miles offshore of Sarasota and Charlotte Counties. There are no nearby sources of pollution. These areas and the beach placement area are considered to be in attainment with the National Ambient Air Quality Standards under the Clean Air Act.

### 3.10 NOISE

Ambient noise levels in the project area are low to moderate. The major noise producing sources are the breaking surf, adjacent residential areas, and aircraft activities to and from the local airport. Noise levels are typical of the marine and beach environments.

### 3.11 AESTHETIC RESOURCES

The aesthetic environments at the proposed borrow areas and at the beach placement site are typical of marine and beach environments. There are two outfalls that currently carry stormwater runoff from the upland developments to the ocean in the southern end of the project site. The beach is steadily eroding, which could eventually lead to an aesthetically unappealing beach habitat.

### 3.12 RECREATION RESOURCES

The marine environment near the proposed borrow areas is used by snorkelers, recreational fishermen, and scuba divers. The beach placement site is used by local interests and tourists for typical beach-related activities, including swimming, sunbathing, bird watching, athletic events, etc.

### 3.13 NAVIGATION

Recreational boaters and fishermen often use both the offshore and the nearshore areas near the proposed borrow areas and the placement site.

### 3.14 HISTORIC AND CULTURAL RESOURCES

Florida has been inhabited for at least the last 10,000 years, first by Native Americans and then Europeans beginning in the 16$^{th}$ century. The potential exists for both prehistoric and historic cultural resources to occur within the project area. Prehistoric Native American sites are recorded along the coast of the project area that date from 10,000 YBP (years before present) to 1700 AD. Submerged prehistoric sites have also been identified within the vicinity of Tampa Bay and in Sarasota County, resulting from gradual sea level rise that occurred from about 10,000 years ago to 6,000 years ago. Prior to this gradual sea level rise, the continental shelves

were exposed, an area almost twice the width of the current size of the state, and were available for habitation by Native Americans.

The Gulf coast of Florida has been explored by warships, trading vessels, submarines and pleasure craft since the Age of Exploration until the present. While no shipwrecks are recorded in the vicinity of the project area, the potential for their presence both along the coast and offshore exists.

### 3.14.1 SHORELINE SAND OPERATIONS AREA

The Florida Master Site File (FMSF) records five archeological sites within the shoreline sand placement area (8SO26, 8SO432, 8SO435, 8SO442, and 8SO445). Four of these sites date from the Archaic period (10,000 YBP to 3000 YBP) and two have portions that are inundated along the shoreline. The other recorded site is of indeterminate age. Components of 8SO26 possibly extend offshore.

### 3.14.2 NEARSHORE SAND OPERATIONS AREA

No historic properties are recorded within the nearshore sand placement area by the FMSF. Components of 8SO26 possibly extend offshore.

### 3.14.3 OFFSHORE BORROW AREA

No historic properties are recorded within the offshore borrow area by the FMSF. No previous submerged remote sensing cultural resource surveys have been conducted in the project area.

## 3.15 NATIVE AMERICANS

Currently, no portion of the proposed project exists within or adjacent to any Native American properties.

# 4 ENVIRONMENTAL EFFECTS

This section is the scientific and analytic basis for the comparisons of the alternatives. See **Table 1** in **Section 2** for a summary of impacts. The following includes anticipated changes to the existing environment including direct, indirect, and cumulative effects.

## 4.1 GENERAL ENVIRONMENTAL EFFECTS

Dredging in the proposed borrow areas would deplete most of the sand in these shoals over the life of the project; however, the areas do not currently support seagrasses, hardbottoms, or other significant benthic resources that would be altered by the proposed removal of sand. The new borrow areas consist of four locations: 8O, 8P, 8R, and 8S. Area 8O is approximately 162 acres in size, with depths ranging from -35 ft to -42 ft (NAVD 88). The proposed cut depths in 8O range from -37.5 ft to -42 ft. Area 8P is approximately 117 acres in size, with depths ranging from -36 ft to -43 ft. The proposed cut depths in 8P range from -39 ft to -43 ft. Area 8R is approximately 140 acres in size, with depths ranging from -38 ft to -46 ft and proposed cut depths ranging from -41 ft to -48 ft. Area 8S is approximately 194 acres in size, with depths ranging from -40 ft to -50 ft and proposed cut depths ranging from -42 ft to -49.5 ft.

## 4.2 VEGETATION

No macroalgae or submerged aquatic vegetation are found in the project area; therefore, these resources will not be affected by this project. Dune vegetation will be restored to its previous condition following project construction.

## 4.3 THREATENED AND ENDANGERED SPECIES

### 4.3.1 RENOURISHMENT USING THE PROPOSED BORROW AREAS [PREFERRED ALTERNATIVE]

#### 4.3.1.1 Sea Turtles

As the preferred alternative proposes to place sand on the beach, the Corps has determined that it may affect nesting sea turtles. If a hopper dredge is utilized, the project may also affect sea turtles in the marine environment.

##### *4.3.1.1.1 Nesting Habitat*

The construction of a wider beach will ensure that sufficient beach habitat is available for gravid turtles to nest. There are a number of potential impacts to nesting sea turtles as a result of changes in beach characteristics following renourishment. Scarp development could hinder gravid turtles from accessing suitable nesting habitat. Sand compaction could make excavating a proper nest difficult. Changes in sand color or sand chemistry could affect the viability of a clutch.

To minimize these potential effects, geotechnical surveys were conducted of the borrow areas to identify sand that is suitable for placement at this site. The sand grain size and color must meet specific criteria to prevent compaction and to help ensure its acceptability by gravid

turtles. Post-construction surveys will monitor the presence of scarps, and tilling will be conducted if scarps or compaction occur.

*4.3.1.1.2 Offshore Habitat*

The dredging may impact sea turtles due to entrainment, benthic foraging and resting habitat disturbance, noise disruption, and injury from vessels and dredges.

Sidescan sonar surveys did not identify any significant hardbottom areas within 400' of the proposed borrow areas. If a hopper dredge is used for the dredging operations, potential impacts to sea turtles could occur. To minimize the risk to sea turtles, standard sea turtle protection conditions will be implemented such as deflector dragheads, inflow screens, and/or monitoring of the operation. A 400-foot buffer will be maintained around low-relief hardground areas that could serve as attractants to sea turtles for foraging. The project will adhere to all turtle safety precautions outlined in the NMFS Gulf Regional Biological Opinion (GRBO) (November 19, 2003; Revision No 1, June 24, 2005; Revision No. 2, January 9, 2007), as well as implement the NMFS Sea Turtle and Smalltooth Sawfish Construction Conditions during project construction.

4.3.1.2 Manatees

Manatees typically use nearshore waters for migration, and are not typically found in offshore waters. While the dredging operations will not affect manatees, the placement operations have the opportunity to encounter manatees during placement of pipelines or maneuvering of dredge equipment.

The Corps and its contractors will abide by the Standard Manatee Construction Protocol to ensure no adverse impacts to any manatee that may venture into the project area during construction activities. By incorporation of this protocol, the Corps believes that the project may affect, but is not likely to adversely affect, the Florida manatee.

4.3.1.3 Smalltooth Sawfish

Smalltooth sawfish are rare in the action area, and they are not likely to be entrained by a hopper dredge. The NMFS 2003 GMRBO states that:

> *. . .NOAA Fisheries has determined that there has never been a reported take of a smalltooth sawfish by a hopper dredge, and such take is unlikely to occur because of smalltooth sawfishes' affinity for shallow, estuarine systems. Only hopper dredging of Key West channels would have the potential to impact smalltooth sawfish but those channels are not considered in this Opinion. Therefore, NOAA Fisheries believes that smalltooth sawfish are rare in the action area, the likelihood of their entrainment is very low, and that the chances of the proposed action affecting them are discountable. This species will not be discussed further in this Opinion.*

To ensure the protection of smalltooth sawfish, the NMFS Sea Turtle and Smalltooth Sawfish Construction Conditions (2006) will be implemented during project construction. The Corps has determined that the project will not affect smalltooth sawfish.

#### 4.3.1.4 Piping Plover

The Preferred Alternative may affect, but is not likely to adversely affect the piping plover. Any impacts would be temporary in nature, and should have no lasting effects on the wintering piping plover population in Sarasota County. Further, the proposed action will not adversely modify critical habitat.

### 4.3.2 NO ACTION ALTERNATIVE [STATUS QUO]

No impacts would occur to the threatened and endangered species discussed in this section, except for the slow decline in available habitat for nesting sea turtles and the wintering piping plover.

## 4.4 MARINE MAMMALS

### 4.4.1 RENOURISHMENT USING THE PROPOSED BORROW AREAS [PREFERRED ALTERNATIVE]

Borrow area activities are not likely to affect marine mammal species. Any minor impact due to dredging activity at the borrow areas and vessels traversing from the borrow areas to the placement sites would be temporary in nature. Vessels associated with the dredging activities are slow moving, and are not likely to strike marine mammals.

### 4.4.2 NO ACTION ALTERNATIVE [STATUS QUO]

No impacts would occur to marine mammals as a result of the No Action Alternative.

## 4.5 BIRDS

### 4.5.1 RENOURISHMENT USING THE PROPOSED BORROW AREAS [PREFERRED ALTERNATIVE]

Migratory birds would be minimally affected by borrow area activities. Nourishment activities will include specific monitoring measures during construction with regard to migratory birds. For instance, activities at the beach will be monitored at dawn or dusk daily during the nesting season to protect nesting migratory birds. Should nesting activities occur within the construction area, appropriate buffers will be placed around nests to ensure their protection.

The dredging activity may attract some seabirds to the dredge area. Activities such as oil exploration have been shown to attract large numbers of seabirds to an area, possibly because of an increase in food availability as bottom sediments are stirred up by drilling, potentially resulting in an algal bloom, and attracting species preyed on by seabirds (Tasker *et al.* 1986; Herron Baird 1990). Similar processes may occur during the initial stages of aggregate dredging. In addition, some species groups, notably gulls, are attracted by increases in shipping activity, especially at the low speeds associated with dredging (Garthe and Hüppop 1999; Skov and Durinck 2001; Christensen *et al.* 2003).

Vision has been shown to be an important component in the foraging activity of a number of seabird species (Essink 1999; Garthe *et al.* 2000; Gaston 2004; Thaxter *et al.* 2010). As a result, water clarity may play an important role in the foraging success of these, and other, species. Changes to water clarity resulting from the re-suspension of sediments during dredging operations would negatively affect the foraging capabilities of some species. The impact of increases in turbidity is likely to be dependent (both in scale and spatial extent) on initial background levels (Cook 2010).

### 4.5.2 NO ACTION ALTERNATIVE [STATUS QUO]

The No Action Alternative would result in a steadily eroding shoreline that would limit the availability of beach habitat available for nesting, roosting and foraging migratory birds.

## 4.6 ESSENTIAL FISH HABITAT ASSESSMENT

The project description is in **Section 2.1.1**. Mitigation of impacts is in **Section 2.6**. **Section 3.6** describes the "existing conditions" of the Essential Fish Habitat (EFH), Federally managed fisheries, and associate species such as major prey species, including affected life history stages. The following subsections describe the individual and cumulative impacts of the proposed action(s) and alternatives on EFH, Federally managed fisheries, and associate species such as major prey species, including affected life history stages.

### 4.6.1 RENOURISHMENT USING THE PROPOSED BORROW AREAS [PREFERRED ALTERNATIVE]

Marine areas of non-vegetated bottoms, live bottoms, and water columns within the study area have been designated as EFH. Although the hardbottom habitat present in the vicinity of the borrow areas is not considered to be "significant" pursuant to the NMFS Gulf of Mexico Regional Biological Opinion, the USACE will maintain 400 foot buffers. With the establishment of the 400 foot buffer, less impact to reef fish would occur due to their ability to move from the dredging site.

The water column is a habitat used for foraging, spawning, and migration. Impacts to the water column may have localized effects on marine species. Injury or entrainment due to dredging would most likely affect demersal or less mobile species, such as shellfish. Dredging may temporarily affect feeding success of EFH species due to turbidity and loss of benthic organisms; however, adjacent similar habitat is available for feeding. Other potential adverse effects include: vessel strikes; behavioral alterations due to sound, light, and structure; increased turbidity and sedimentation; changes to soft bottom bathymetry in the borrow area during dredging; and temporary loss of prey items and foraging habitat.

Water quality concerns are of particular importance in the maintenance of this habitat. During dredging, resuspended materials may interfere with the diversity and concentration of phytoplankton and zooplankton, and therefore could affect foraging success and patterns of schooling fishes and other grazers that comprise prey for managed species. Foraging patterns would be expected to return to normal at the end of dredging activities.

An artificial reef totaling 1.8 acres was constructed in 1997 by the City of Venice as mitigation for hardbottom habitat impacted as part of the initial construction of the project. The artificial reef was constructed offshore of Florida Department of Environmental Protection (FDEP) monument R-130 in water depths from –20 to –22 feet. The City had an extensive amount of concrete material available for construction of the mitigation reef as a result of their 1995 stormwater management system improvements; therefore, a total of 3.14 acres of artificial reef was ultimately constructed. The City of Venice also constructed 7.3 acres of artificial reefs to compensate for impacts associated with this project. The artificial reefs were constructed of limestone boulders, and were constructed during the period between October 2007 and March 2008. They are located offshore of Venice Beach, with the northern four located between FDEP Reference Monuments R-119 and R-122, and the fifth located at FDEP Reference Monument R-134.

#### 4.6.2 NO ACTION ALTERNATIVE [STATUS QUO]

No impacts would occur to EFH.

### 4.7 COASTAL BARRIER RESOURCES

The proposed project does not include the construction of structures that would require Federal Flood Insurance; therefore, Federal expenditures for the proposed project are not restricted in Unit FL-P21AP, Manasota Key OPA. Please see also **Section 3.7**, **Section 5.14**, **Table 5** and **Figure 5**.

### 4.8 WATER QUALITY

#### 4.8.1 RENOURISHMENT USING THE PROPOSED BORROW AREAS [PREFERRED ALTERNATIVE]

Construction activities may cause temporary increases in turbidity in the immediate vicinity of construction. These conditions will cause short-term impacts to the area's water quality. The State of Florida water quality regulations require that water quality standards not be violated during construction operations. The standards require that turbidity shall not exceed 29 NTU's above background. Should turbidity exceed State water quality standards as determined by monitoring, the contractors will be required to cease work until conditions return to normal. Increased turbidity at the borrow site during excavation should be minor and less than the turbidity increase along the shore during re-nourishment.

#### 4.8.2 NO ACTION ALTERNATIVE [STATUS QUO]

The No Action Alternative will not deleteriously affect water quality in the action area.

### 4.9 AIR QUALITY

#### 4.9.1 RENOURISHMENT USING THE PROPOSED BORROW AREAS [PREFERRED ALTERNATIVE]

The short-term impact of emissions by the dredge and other construction equipment associated with the project will not significantly impact air quality. Sarasota County is an

attainment area and the Florida Department of Environmental Protection does not regulate marine or mobile emission sources (construction equipment) in attainment areas. No air quality permits will be required for this project.

#### 4.9.2 NO ACTION ALTERNATIVE [STATUS QUO]

The No Action Alternative would not affect air quality in the project area.

## 4.10 NOISE

#### 4.10.1 RENOURISHMENT USING THE PROPOSED BORROW AREAS [PREFERRED ALTERNATIVE]

Dredging noise can affect marine mammals, sea turtles, and fisheries. Possible effects of dredging noise can vary depending on a variety of internal and external factors, and can be divided into masking (obscuring of sounds of interest by interfering sounds, generally at similar frequencies), response, discomfort, hearing loss, and injury (MALSF, 2009). Deeper water operations may propagate sound over greater distances than those in confined nearshore areas (Hildebrandt, 2004).

Dredging to extract marine aggregates produces broadband and continuous sound, mainly at lower frequencies. The little available data indicates that dredging is not as noisy as seismic surveys, pile driving, and sonar; however, it is louder than most shipping, operating, offshore wind turbines, and drilling (MALSF, 2009). Noise associated with dredging activities can be placed into five categories:

> **1. Collection noise –** The noise generated from the collection of material from the sea-floor; for example, the scraping of the buckets on a bucket ladder dredge or the operation of the drag head. This noise is dependent on the structure of the sea floor and the type of dredge used.
> **2. Pump noise –** The noise from the pump driving the suction through the pipe.
> **3. Transport noise -** The noise of the material being lifted from the sea floor to the dredge. For trailing suction hopper and cutter suction dredges, this would be the noise of the material as it passes up the suction pipe. For clamshell dredges, it would be the sound of the crane dropping/lifting the bucket.
> **4. Deposition noise -** This noise is associated with the placement of the material within the barge or hopper.
> **5. Ship/machinery noise** – The noise associated with the dredging ship itself. For stationary dredges, the primary source will be the onboard machinery. Mobile dredges will also have propeller and thruster noise (MALSF, 2009).

Field investigations have been undertaken to characterize underwater sounds typical of bucket, hydraulic cutterhead, and hopper dredging operations (Dickerson *et al.,* 2001). Preliminary findings indicate that cutterhead dredging operations are relatively quiet as compared to other dredging operations in aquatic environments. Hopper dredges produce somewhat more intense sounds similar to those generated by vessels of comparable size. Bucket dredges create

a more complex spectrum of sounds, very different than either cutterhead or hopper dredges. Hopper dredge noises consist of a combination of sounds emitted from two relatively continuous sources: engine and propeller noise similar to that of large commercial vessels, and sounds of dragheads moving in contact with the substrate.

Reported source levels for dredging operations range from 160 to 180 dB re 1 uPa @ 1 m for 1/3 octave bands with peak intensity between 50 and 500 Hz (Greene and Moore, 1995). The intensity, periodicity, and spectra of emitted sounds differ greatly among dredge types. Components of underwater sounds produced by each type are influenced by a host of factors including substrate type, geomorphology of the waterway, site-specific hydrodynamic conditions, equipment maintenance status, and skill of the dredge plant operator (Dickerson *et al.,* 2001).

Noise generated by the dredge will be offshore and will not impact those living on the beaches. Noise generated on the beaches by equipment placing the dredged material will be relatively low level and will be of a short duration. Construction equipment such as booster pumps will be properly maintained to minimize effects of noise. Once dredging and beach placement have concluded, noise levels will drop back to normal levels for the beach area. Since the increases to the current level of noise as a result of this project will be localized and minor, there will only be a temporary reduction in aesthetics and no expectation of adverse effects to the environment as a result of construction-related noise.

#### 4.10.2 NO ACTION ALTERNATIVE [STATUS QUO]

Noise levels in the project area would not be affected by the No Action Alternative.

## 4.11 AESTHETIC RESOURCES

#### 4.11.1 RENOURISHMENT USING THE PROPOSED BORROW AREAS [PREFERRED ALTERNATIVE]

Construction equipment on the beach will be aesthetically unappealing for the duration of construction (less than six months). The project will result in a wider, more aesthetically pleasing beach.

#### 4.11.2 NO ACTION ALTERNATIVE [STATUS QUO]

Beach ecosystems are generally considered to be aesthetically pleasing, and the No Action Alternative may ultimately result in a loss of this ecosystem and a less aesthetically appealing shoreline that may require hard stabilization methods (i.e., revetments or seawalls) to protect upland properties.

## 4.12 RECREATION RESOURCES

### 4.12.1 RENOURISHMENT USING THE PROPOSED BORROW AREAS [PREFERRED ALTERNATIVE]

The current use of the borrow areas for recreation is limited. Recreational fishermen may be required to alter their fishing locations during dredging. At the placement site, additional sand will improve the recreational value of the beach.

### 4.12.2 NO ACTION ALTERNATIVE [STATUS QUO]

The No Action Alternative would result in a loss of recreation resources due to long-term erosion of the recreational beach.

## 4.13 NAVIGATION

### 4.13.1 RENOURISHMENT USING THE PROPOSED BORROW AREAS [PREFERRED ALTERNATIVE]

Recreational boaters frequently use this area. Boating in the area of the dredge equipment will be restricted, but only temporarily while the beach is being re-nourished. Once the project has been completed, navigation will resume unhindered.

### 4.13.2 NO ACTION ALTERNATIVE [STATUS QUO]

There will be no affect on navigation with the No Action Alternative.

## 4.14 HISTORIC AND CULTURAL RESOURCES

### 4.14.1 PROPOSED BORROW AREAS (PREFERRED ALTERNATIVE)

#### 4.14.1.1 Shoreline Operations Area

Because historic properties are recorded by the FMSF within the shoreline operations area and could be damaged by sand placement operations, a cultural resource survey was conducted. A terrestrial cultural resources survey of the shoreline operations area resulted in the report, *Sarasota Beach Erosion Control Cultural Resources Survey: Remote Sensing Survey of Four Offshore Borrow Areas, Nearshore and Shoreline Survey, Sarasota County, Florida* (PCI, 2010). The terrestrial survey did not locate any features associated with recorded or new historic properties along the shoreline. The Corps has determined no adverse effect to historic properties in the shoreline operations area. The Florida State Historic Preservation Officer (SHPO) concurred with this determination on November 2, 2011 (DHR Project File No. 2011-04514B).

#### 4.14.1.2 Nearshore Operations Area

Since the FMSF recorded terrestrial archeological sites along the shoreline, two of which have inundated components which could be damaged by sand placement operations in the nearshore, a submerged cultural resource survey was conducted. In the nearshore operations area, six targets (magnetic, sidescan and subbottom) indicative of potential historic properties

were identified by the survey *Sarasota Beach Erosion Control Cultural Resources Survey: Remote Sensing Survey of Four Offshore Borrow Areas, Nearshore and Shoreline Survey, Sarasota County, Florida* (PCI, 2010). These targets will be buffered with a minimum of a 250 foot buffer zone to avoid impacts by sand placement operations, including anchoring, pipeline and pumpout operations. In the event these targets cannot be avoided, diver identification of the targets will be conducted before construction. The Corps has determined no adverse effect to historic properties in the nearshore operations area. The Florida State Historic Preservation Officer (SHPO) concurred with this determination on November 2, 2011 (DHR Project File No. 2011-04514B).

#### 4.14.1.3 Offshore Borrow Area

The submerged remote sensing cultural resources survey, *Sarasota Beach Erosion Control Cultural Resources Survey: Remote Sensing Survey of Four Offshore Borrow Areas, Nearshore and Shoreline Survey, Sarasota County, Florida* (PCI, 2010) has located three potentially significant targets (magnetic and sidescan) indicative of historic properties within and immediately adjacent to the offshore borrow areas. Unrecorded historic properties could be adversely affected by dredging impacts, including drag arm, cutter suction, and spudding (anchoring). There is a potential to adversely affect unrecorded historic properties within and immediately adjacent to the offshore borrow area. Targets that have been identified as potentially significant historic properties will be buffered with a minimum of a 250 foot buffer zone to prevent damage during dredging operations. In the event these targets cannot be avoided, diver identification of the targets will be conducted before construction. The Corps has determined no adverse effect to historic properties in the offshore borrow area. The Florida State Historic Preservation Officer (SHPO) concurred with this determination on November 2, 2011 (DHR Project File No. 2011-04514B).

Consultation with the Florida State Historic Preservation Officer (SHPO) and appropriate Federally recognized tribes was initiated July 15, 2010. Consultation with the Florida SHPO, appropriate Federally recognized tribes, and other interested parties is ongoing and will continue until completion of the project.

### 4.14.2 NO ACTION ALTERNATIVE [STATUS QUO]

#### 4.14.2.1 Shoreline Sand Operations area

There would be no effects to historic properties.

#### 4.14.2.2 Nearshore Operations Area

There would be no effects to historic properties.

#### 4.14.2.3 Offshore Borrow Area

There would be no effects to historic properties.

## 4.15 NATIVE AMERICANS

Currently, no portion of the proposed project exists within or adjacent to any Native American properties.

## 4.16 NATURAL OR DEPLETABLE RESOURCES

Sand is a natural and depletable resource. Using sand from the proposed borrow areas will deplete the sand source at those sites. Although sand will eventually return to the offshore areas and be redistributed over nearshore areas, it is unlikely that the redistributed sand will be sufficient to refill the borrow area. This would result in a depletion of resources in the borrow areas.

The erosion rate was recalculated in 2011 to be 81,000 cy/yr. This is an increase from the rate of 37,900 cy/yr, which was used for the 1991 General Design Memorandum and the 1992 Post Authorization Change Report. The increase in the erosion rate calculation suggests that greater fill volumes are required to maintain the authorized project than those estimated in previous NEPA documents for this project. While this will result in a greater volumes taken from the proposed borrow areas, the effects of the action are similar. The sand will be depleted from the borrow areas, but will enter into the nearshore sand transport system.

## 4.17 CUMULATIVE IMPACTS

Cumulative impacts are defined in 40 CFR 1508.7 as those effects that result from:

> *…the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.*

**Table 6** summarizes the impact of such cumulative actions by identifying the past, present, and reasonably foreseeable future condition of the various resources which are directly or indirectly impacted by the proposed action and its alternatives. The table also illustrates the with-project and without-project condition (the difference being the incremental impact of the project). Also illustrated is the future condition with any reasonable alternatives (or range of alternatives).

**Table 6. Summary of cumulative effects.**

| | Boundary (time and space) | Past (baseline condition) | Present (existing condition) | Future without project | Future with Proposed Action |
|---|---|---|---|---|---|
| Sand Resources | pre- development to 2046, Sarasota County | more abundant | discrete offshore sand resources are becoming depleted with use for beach placement | offshore sand resources will likely be utilized for shore protection activities in other areas on the Gulf Coast of Florida | offshore sand resources will be depleted over the life of this project |
| Protected Species | pre- development to 2046, Sarasota County | more abundant and widespread | individuals becoming increasingly rare; habitat shrinking | individuals are not acutely affected by dredging; however, beach habitat continues to shrink | individuals may be affected by dredging and placement activities; habitat is sustained for life of project |
| Hardgrounds | pre- development to 2046, Sarasota County | scattered, low-relief hardgrounds in offshore and nearshore areas with low benthic diversity | nearshore hardgrounds may have experienced some burial from past nourishment projects; artificial reefs were constructed as mitigation; benthic habitat fluctuates with sand coverage | nearshore hardgrounds previously buried may be increasingly uncovered as beach sand erodes; benthic habitat fluctuates with sand coverage | nearshore hardgrounds are alternatively covered and uncovered by sand; benthic habitat abundance and diversity fluctuates with sand coverage |
| Water quality | pre- development to 2046, Sarasota County | Pristine | increasingly degraded due to anthropogenic actions | no change to present condition | temporary increases in local turbidity; no long-term change to degraded state |

### 4.17.1 SAND RESOURCES

Because sand resources at offshore sites are not replenished very quickly by natural forces, it is anticipated that the use of the borrow areas for the life of this project would result in the depletion of this sand supply. If the borrow areas identified in this EA are not used for this project, the growing demand for sand to use in protecting Florida shorelines suggests that they would be utilized in the future by other stakeholders.

### 4.17.2 PROTECTED SPECIES

Dredge equipment activities could possibly have an impact on manatees, sea turtles, and smalltooth sawfish, but measures will be taken to prevent these impacts and they are not likely to have a cumulative adverse impact on these species. Long term changes in beach characteristics such as sand color, grain size, etc. could affect the use of the beach by nesting sea turtles. Because the proposed project is not likely to affect protected species, with the exception of listed sea turtles should a hopper dredge be utilized, the project would not contribute to adverse cumulative impacts on protected species. Through the ESA Section 7 consultation process, NMFS has determined that utilization of a hopper dredge is not likely to lead to the extinction of listed sea turtles, providing the reasonable and prudent measures and implementing terms and conditions are followed. The project would restore beach used by nesting sea turtles and migratory birds, which may result in a positive effect on the long-term populations of these species. Protected species would be periodically affected in a manner similar to that described in **Section 4.3** of this EA for each nourishment event through the life of the project.

### 4.17.3 HARDGROUNDS

Sediment transport in the nearshore region is natural and continuous. However, cumulative beach nourishment and other anthropogenic activities can increase rates of nearshore sediment transport, exacerbating background levels and causing stress to nearshore benthic communities (Jordan, Banks et al. 2010).

Dredging of the proposed borrow areas to construct the beach fill project would have temporary impacts to the benthic infaunal communities. Exclusionary buffers would be established around documented hardbottom features within the proposed borrow areas to eliminate any direct or indirect impacts to these features from dredging activities. The proposed action would likely have minimal, temporary adverse impacts to Essential Fish Habitat during each nourishment event over the life of the project.

With the replenishment interval expected to be ten years, and the recovery time of the affected benthic community after sand removal anticipated to be within one to two years, the

potential for significant cumulative benthic biological impacts is remote. No significant cumulative impacts to the pelagic environment, including zooplankton, fishes, sea turtles, and marine mammals, are expected from the use of the borrow areas.

### 4.17.4 WATER QUALITY

Water quality impacts from the proposed action would be temporary in nature. There is some concern that sand movement from nourished beaches can cause increased turbidity in nearshore waters during large storm events. However, barrier islands are dynamic systems with constantly shifting sands. Erosion and accretion of sands occurs naturally in these systems, creating localized turbidity during storm events and in the winter months (Jones and Mangun 2001). An increase in fine sediments following a nourishment event can result in increased turbidity causing a press disturbance that could persist for at least three to ten years (Peterson and Bishop 2005).

### 4.17.5 CONCLUSION

Because sand resources appear to be replenished slowly, the proposed project provides an incremental effect on the depletion of offshore sand resources. The proposed project would not have significant adverse effects on protected species, hardground habitats, or water quality due to protective conditions developed in coordination and consultation with the resource agencies. The proposed project would not provide any known incremental result that would contribute to adverse cumulative impacts of these biological resources.

## 4.18 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

### 4.18.1 IRREVERSIBLE

An irreversible commitment of resources is one in which the ability to use and/or enjoy the resource is lost forever. One example of an irreversible commitment might be the mining of a mineral resource. The use of sand from the proposed borrow areas would, for all practical purposes, irreversibly deplete the suitable sand reserves. The sands would not replenish fast enough to be of much value to future nourishment projects.

### 4.18.2 IRRETRIEVABLE

An irretrievable commitment of resources is one in which, due to decisions to manage the resource for another purpose, opportunities to use or enjoy the resource as they presently exist are lost for a period of time. An example of an irretrievable loss might be where a type of vegetation is lost due to road construction. Environmental impacts caused by use of the borrow sites would be small since only a featureless, sandy bottom would be impacted.

## 4.19 UNAVOIDABLE ADVERSE ENVIRONMENTAL EFFECTS

Species of relatively non-motile infaunal invertebrates that inhabit the borrow areas and the placement site will unavoidably be lost during dredging. Those species that are not able to escape the construction area are expected to recolonize after project completion.

## 4.20 LOCAL SHORT-TERM USES AND MAINTENANCE/ENHANCEMENT OF LONG-TERM PRODUCTIVITY

Species of motile epifaunal invertebrates may inhabit the borrow areas and placement site. Motile organisms such as fish, crabs, and sand dwelling organisms should be able to escape the area during construction. Many of those species that are not able to escape the construction area are expected to recolonize after project completion.

## 4.21 COMPATIBILITY WITH FEDERAL, STATE, AND LOCAL OBJECTIVES

The Preferred Alternative is compatible with Federal, state, and local objectives of protecting upland properties while maintaining a natural beach. It also provides the most cost-effective option for meeting these objectives. The No Action Alternative does not meet the Federal, state, and local objectives.

## 4.22 CONFLICTS AND CONTROVERSY

No conflicts or controversy regarding this project have been identified.

## 4.23 UNCERTAIN, UNIQUE, OR UNKNOWN RISKS

The direct site-specific impacts of the Preferred Alternative and the No Action Alternative can be predicted with a high degree of certainty; therefore, uncertainty is minimized. However, predictions of cumulative and indirect impacts are, to a degree, inherently uncertain. This project is based on the best available scientific and engineering information, and although no significant adverse impacts are expected, a low probability is always present. The project design is not unique; thus, it should not create unique risks.

## 4.24 PRECEDENT AND PRINCIPLE FOR FUTURE ACTIONS

This project would not establish a precedent for future actions with significant effects or represent a decision in principle for future considerations.

## 4.25 ENVIRONMENTAL COMMITMENTS

The U.S. Army Corps of Engineers and contractors commit to avoiding, minimizing, or mitigating for adverse effects during construction activities. Adequate buffers were established during the borrow site design to ensure that no impacts to resources occur. Environmental commitments resulting from agency comments, public concern, laws and regulations, and permit

requirements will be summarized in **Section 7.4** of the Final EA and included in the contract specifications.

### 4.25.1 PROTECTION OF FISH AND WILDLIFE RESOURCES

The Contractor shall keep construction activities under surveillance, management, and control to minimize interference with, disturbance to, and damage of fish and wildlife. Species that require specific attention along with measures for their protection shall be listed in the Contractor's Environmental Protection Plan prior to the beginning of construction operation.

Although the hardbottom habitat present in the vicinity of the borrow areas is not considered to be "significant" pursuant to the NMFS Gulf of Mexico Regional Biological Opinion, the USACE will maintain 400 foot buffers. This project is not anticipated to result in hardbottom impacts.

### 4.25.2 ENDANGERED SPECIES PROTECTION

The USACE will comply with all requirements of any consultation documents associated with this project provided under the Endangered Species Act from either USFWS or NMFS. USACE will implement the Standard Manatee Construction Protection Specifications to ensure manatee protection.

Buffers will be maintained around significant hardground areas and bottom structures that serve as attractants to sea turtles for foraging or shelter. These buffers and any other turtle safety precautions would be maintained to comply with the NMFS Gulf Regional Biological Opinion (GMRBO) (November 19, 2003; Revision No 1. June 24, 2005; Revision No. 2. January 9, 2007). If a hopper dredge is used for the dredging operations, potential impacts to sea turtles could occur. To minimize the risk to sea turtles, standard sea turtle protection conditions will be implemented such as the use of a state-of-the-art rigid deflector draghead at all times, inflow screens, and/or monitoring of the operation.

### 4.25.3 WATER QUALITY

The USACE Contractor will prevent oil, fuel, or other hazardous substances from entering the air or water. This will be accomplished by design and procedural controls. All wastes and refuse generated by project construction would be removed and properly disposed. The USACE contractor will implement a spill contingency plan for hazardous, toxic, or petroleum material for the borrow area. Compliance with U.S. EPA Vessel General Permits would be ensured, as applicable. The USACE will secure a Section 401 Water Quality Certification prior to construction.

### 4.25.4 DREDGE AND BORROW AREA MONITORING REQUIREMENTS

Electronic positioning information, production, and volume data will be collected. Pre- and post-dredging hydrographic surveys will be conducted to monitor physical changes in the borrow area. The dredge will be equipped with an on-board global positioning system capable of maintaining or recording the location of the dredge, dragarms, and/or cutterhead.

# 5 COMPLIANCE WITH ENVIRONMENTAL REQUIREMENTS

## 5.1 NATIONAL ENVIRONMENTAL POLICY ACT OF 1969

Environmental information on the project has been compiled and this Environmental Assessment has been prepared. Final compliance with the National Environmental Policy Act will occur with the signing of a Finding of No Significant Impact (FONSI). The project is in compliance with this Act.

## 5.2 ENDANGERED SPECIES ACT OF 1973

This project falls under the scope of the USFWS Statewide Programmatic Biological Opinion for Shore Protection Activities along the Coast of Florida (SPBO; issued April 18, 2011, and modified August 22, 2011). The USACE will adhere to the terms and conditions outlined in that document for projects including sand placement from beach nourishment activities primarily for shore protection. The USACE coordinated with USFWS pursuant to the SPBO on November 1, 2011 (see **Appendix C**). This project is also within the scope of the USFWS Piping Plover Programmatic Biological Opinion ($P^3$BO). Based on the description of Optimal Piping Plover Areas in the $P^3$BO, the USACE has determined that no Optimal Piping Plover Areas are located within the project boundaries. The USACE agrees to implement the Conservation Measures outlined in the $P^3$BO.

This project also falls under the scope of the NMFS Gulf of Mexico Regional Biological Opinion (GRBO; issued November 19, 2003, as amended in 2005 and 2007). The GRBO requires a 400-ft buffer surrounding "significant" hardbottoms. For the purposes of the GRBO, a significant hardbottom is "one that, over a horizontal distance of 150 feet, has an average elevation above the sand of 1.5 feet or greater, and has algae growing on it." The study conducted by Dial Cordy and Associates, Inc., in 2011 did not identify any hardground habitats that met this definition. Therefore, the 400-ft buffer requirement is not applicable to hardbottoms proximate to the four borrow areas considered in this EA. However, the borrow areas were designed to include a 400-ft buffer around the identified hardbottoms as a precautionary measure to avoid impacts to these habitats.

This project was fully coordinated under the Endangered Species Act of 1973, as amended, 16 U.S.C. 1531, *et seq.,* P.L. 93-205, and is in full compliance with this Act.

## 5.3 FISH AND WILDLIFE COORDINATION ACT OF 1958

The USACE has and will continue to maintain continuous coordination with the USFWS during all stages of the planning and construction process. A Fish and Wildlife Coordination Act (FWCA) Report was included in the 1992 EA, and the USFWS and USACE coordinated extensively as part of that activity. Re-nourishment of Venice Beach will take place in the same

footprint as covered by the 1992 EA. The USACE consulted with the USFWS pursuant to the FWCA, NEPA, and the ESA. This project is in full compliance with the Act.

### 5.4 NATIONAL HISTORIC PRESERVATION ACT OF 1966 (INTER ALIA)

Consultation with the Florida State Historic Preservation Officer (SHPO) was initiated July 15, 2010, and is ongoing in accordance with the National Historic Preservation Act of 1966, as amended, and as part of the requirements and consultation processes contained within the NHPA implementing regulations of 36 CFR 800. This project is also in compliance, through ongoing consultation with the SHPO and appropriate Federally recognized tribes, with the Archeological Resources Protection Act (96-95), the Abandoned Shipwreck Act of 1987 (PL 100-298; 43 U.S.C. 2101-2106) American Indian Religious Freedom Act (PL 95-341), Executive Orders (E.O) 11593, 13007, and 13175 and the Presidential Memo of 1994 on Government to Government Relations.

The submerged remote sensing cultural resources survey, Sarasota Beach Erosion Control Cultural Resources Survey: Remote Sensing Survey of Four Offshore Borrow Areas, Nearshore and Shoreline Survey, Sarasota County, Florida, has identified nine potentially significant targets indicative of historic properties in the borrow area and the nearshore project area. These targets will be buffered a minimum of 250 feet to prevent damage during dredging and pump out operations. The Corps has determined that the proposed action will have no adverse effect to historic properties included in or eligible for inclusion in the National Register of Historic Places. The Florida State Historic Preservation Officer (SHPO) concurred with this determination on November 2, 2011 (DHR Project File No. 2011-04514B) and found the submitted report complete and sufficient in accordance with Chapter 1A-46, F.A.C. Consultation with the Florida SHPO and appropriate Federally recognized tribes was initiated July 15, 2010, in accordance with the National Historic Preservation Act of 1966, as amended, and as part of the requirements and consultation processes contained within the NHPA implementing regulations of 36 CFR 800. A copy of the letter(s) indicated above has (have) been placed in **Appendix C**.

### 5.5 CLEAN WATER ACT OF 1972

The local sponsor will apply for a permit from the FDEP prior to construction. Final compliance with the Clean Water Act will occur when this Water Quality Certification is received from the State of Florida. All State water quality standards would be met. A Section 404(b) evaluation is included in this report as **Appendix A**. The project is in compliance with this Act.

### 5.6 CLEAN AIR ACT OF 1972

No air quality permits would be required for this project. This Draft EA will be coordinated with U.S. Environmental Protection Agency (EPA) and is in compliance with Section 309 of the Act. Any correspondence received from the EPA will be included in **Appendix C** of the Final EA, and a

discussion of any issues they raise will be included in the Public and Agency Involvement section of the Final EA.

### 5.7 COASTAL ZONE MANAGEMENT ACT OF 1972

A federal consistency determination in accordance with 15 CFR 930 Subpart C is included in this report as **Appendix B**. State consistency review will be performed during the coordination of the draft EA.

### 5.8 FARMLAND PROTECTION POLICY ACT OF 1981

No prime or unique farmland would be impacted by implementation of this project. This Act is not applicable.

### 5.9 WILD AND SCENIC RIVER ACT OF 1968

No designated Wild and Scenic river reaches would be affected by project related activities. This Act is not applicable.

### 5.10 MARINE MAMMAL PROTECTION ACT OF 1972

The project will not adversely affect marine mammal species. Incorporation of safeguards to protect threatened and endangered species during project construction would also protect marine mammals in the area. Therefore, this project is in compliance with this Act.

### 5.11 ESTUARY PROTECTION ACT OF 1968

No designated estuary would be affected by project activities. This Act is not applicable.

### 5.12 FEDERAL WATER PROJECT RECREATION ACT

The principles of the Federal Water Project Recreation Act, (Public Law 89-72) as amended, have been fulfilled by complying with the recreation cost sharing criteria as outlined in Section 2 (a), paragraph (2). Another area of compliance includes the public beach access requirement on which the renourishment project hinges (Section 1, (b)).

### 5.13 SUBMERGED LANDS ACT OF 1953

The project would occur on submerged lands of the State of Florida. The project will be coordinated with the State and is in compliance with the Act.

### 5.14 COASTAL BARRIER RESOURCES ACT AND COASTAL BARRIER IMPROVEMENT ACT OF 1990

The Coastal Barrier Resources Act (CBRA) and the Coastal Barrier Improvement Act of 1990 (CBRIA) limit Federally subsidized development within the CBRA Units to limit the loss of human

life by discouraging development in high risk areas, to reduce wasteful expenditures of Federal resources, and to protect the natural resources associated with coastal barriers. CBRIA provides development goals for undeveloped coastal property held in public ownership, including wildlife refuges, parks, and other lands set aside for conservation (OPAs). These public lands are excluded from most of the CBRIA restrictions, although they are prohibited from receiving Federal Flood Insurance for new structures.

Federal monies can be spent within the CBRA Units for certain activities, including (1) projects for the study, management, protection, and enhancement of fish and wildlife resources and habitats; (2) establishment of navigation aids; (3) projects funded under the Land and Water Conservation Fund Act of 1965; (4) scientific research; (5) assistance for emergency actions essential to saving lives and the protection of property and the public health and safety, if preferred pursuant to the Disaster Relief Emergency Assistance Act and the National Flood Insurance Act and are necessary to alleviate the emergency; (6) maintenance, repair, or reconstruction, but not expansion, of publically owned or publically operated roads, structures, or facilities; (7) nonstructural projects for shoreline stabilization that are designed to mimic, enhance, or restore a natural stabilization system; (8) any use or facility necessary for the exploration, extraction, or transportation of energy resources; (9) maintenance or construction of improvements of existing federal navigation channels, including the disposal of dredge materials related to such projects; and (10) military activities essential to national security.

There are two CBRIA OPAs in the project vicinity (see **Figure 5** and **Table 5**). The proposed project does not include the construction of structures that would require Federal Flood Insurance in any areas designated as "otherwise protected areas" pursuant to the CBRIA; therefore, Federal expenditures for the proposed project are not restricted in these areas. The activities proposed in the remainder of the CBRA units in the project area are consistent with the intent of the Act. The USACE coordinated with the USFWS concerning the CBRIA units in the project area on September 19, 2011 (see **Appendix C**). The project is in compliance with the Act.

### 5.15 RIVERS AND HARBORS ACT OF 1899

The proposed work would not obstruct navigable waters of the United States. The proposed action will be subject to the public notice, public hearing, and other evaluations normally conducted for activities subject to the Act. The project is in full compliance.

### 5.16 ANADROMOUS FISH CONSERVATION ACT

Anadromous fish species would not be affected. The Draft EA will be coordinated with the National Marine Fisheries Service. This project is in compliance with the Act.

## 5.17 MIGRATORY BIRD TREATY ACT AND MIGRATORY BIRD CONSERVATION ACT

Migratory birds would be minimally affected by dredging in the borrow areas. The USACE will include our standard migratory bird protection requirements in the project plans and specifications and will require the contractor to abide by those requirements. Disposal activities at the beach placement site will be monitored at dawn or dusk daily during the nesting season to protect nesting migratory birds. If nesting activities occur within the construction area, appropriate buffers will be placed around nests to ensure their protection (see also **Sections 3.3**, **4.3**, **5.2**, and **5.3** of this document). The project is in compliance with these Acts.

## 5.18 MARINE PROTECTION, RESEARCH AND SANCTUARIES ACT

The term "dumping" as defined in the Act (3[33 U.S.C. 1402](f)) does not apply to the disposal of material for beach nourishment or to the placement of material for a purpose other than disposal (i.e. placement of rock material as an artificial reef or the construction of artificial reefs as mitigation). Therefore, the Marine Protection, Research and Sanctuaries Act does not apply to this project. The disposal activities addressed in this EA have been evaluated under Section 404 of the Clean Water Act (see **Appendix A**).

## 5.19 MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT

This Act requires preparation of an EFH Assessment and coordination with the NMFS. This NEPA document serves as this assessment, and includes these required elements: (1) a description of the proposed action (see **Sections 1** and **2.1.1**); (2) analysis of individual and cumulative effects on EFH, Federally managed fisheries, and associated species such as major prey species, including affected life history stages (see **Section 3.6**); (3) the District's view regarding effects (see **Section 4.5**); and (4) proposed mitigation (see **Sections 4.5** and **4.25.1**).

Comments received from the NMFS as a result of USACE's coordination of this Draft EA and incorporated EFH Assessment will be included in **Appendix C** of the Final EA.

## 5.20 UNIFORM RELOCATION ASSISTANCE AND REAL PROPERTY ACQUISITION POLICIES ACT OF 1970.

The purpose of PL 91-646 is to ensure that owners of real property to be acquired for Federal and Federally assisted projects are treated fairly and consistently and that persons displaced as a direct result of such acquisition will not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole.

This project does not involve any real property acquisition or displacement of property owners or tenants. Therefore, this Act is not relevant to this project.

## 5.21 E.O. 11990, PROTECTION OF WETLANDS

No wetlands would be affected by project activities. This project is in compliance with the goals of this Executive Order.

## 5.22 E.O. 11988, FLOODPLAIN MANAGEMENT

To comply with EO 11988, the policy of USACE is to formulate projects that, to the extent possible, avoid or minimize adverse effects associated with use of the floodplain and avoid inducing development in the floodplain unless there is no practicable alternative. No activities associated with this project are located within a floodplain, which is defined by EO 11988 as an "area which has a one percent or greater chance of flooding in any given year". The project is located within the Coastal High Hazard Area (CHHA), as defined by EO 11988 as an "area subject to inundation by one-percent-annual chance of flood, extending from offshore to the inland limit of a primary frontal dune along an open coast and any other area subject to high velocity wave action from storms". The project shoreline is already completely developed and further development is not possible.

Achieving HSDR project objectives generally cannot avoid locating actions in CHHA's. The primary objective of the Sarasota County (Venice Segment), Florida HSDR is to reduce infrastructure damage and there is no practicable alternative that could be located outside of the CHHA that would achieve this objective. In fact, the need for protection of the infrastructure located along this CHHA shoreline is the reason it was authorized by Congress. The 1984 BEC Feasibility Study evaluated relocation of structures as a preliminary alternative and found that most structures within the area cannot be economically or physically moved from the area and would have to be abandoned with new structures provided for the existing residents.

The Sarasota County Floodplain Management Plan (SCFMP) 2009 Update provides a comprehensive overview of best management practices in the County that impact the quality of flood protection for its citizens. The SCFMP includes participation in two voluntary Federal programs and implementation of several preventative plans, discussed in the following paragraphs.

Sarasota County participates in two voluntary Federal programs to reduce flood loss and risks to the community, the National Flood Insurance Program (NFIP) and the Community Rating System (CRS) program, both administered by the Federal Emergency Management Agency (FEMA). The National Flood Insurance Program (NFIP) was approved by Congress in 1968 and was formed to provide flood insurance that was previously unavailable by any private insurers to community residents that would at minimum, follow the Federal guidelines to prevent flood loss. These guidelines are adopted in the 44 Code of Federal Regulations (CFR) and locally in the County Floodplain Damage Protection Ordinance 2009-063 and Land Development Regulations. Sarasota County first adopted the guidelines and the flood risk studies and maps provided in

December 1971. In 1992, Sarasota County also became accepted in the CRS program which provides citizens with information as to the quality of flood protection provided by the County and provides for discounts on Federal flood insurance.

In addition, Sarasota County has several preventative plans in place.

- The Sarasota County Comprehensive Plan provides the policy direction used in framing land use to support the NFIP and CRS programs and provisions to address the problems of development in the floodplain and protection of natural drainage features.
- Regulations—Flood Damage Protection Ordinance No. 2009-060 as amended continues to be enforced to ensure proper compliance for the required NFIP and CRS higher regulations.
- Land Development Regulations Ordinance No. 81-12—Surface Water Planning and Regulatory staff are responsible for recommending and monitoring:
  - Other development regulations for 'land uses larger than five acres or 50 structures" and other requirements of the 44 CFR and higher local regulations such as "no adverse impact"
  - Run-off and stormwater that include higher regulations for peak flows and no adverse impacts from development.
- Sarasota County also adheres to the FDEP imposed Coastal Construction Control Line (CCCL) established primarily to prevent beach erosion and has an elevation requirement currently of 19.4 ft.
- The Gulf Coast Setback Line established in 1978, Ordinance No. 2007-023, as amended, was established to preserve and protect the County's coastal barrier island beach and dune system from imprudent construction which would jeopardize the stability of the said system, accelerate erosion, provide inadequate protection to upland properties and endanger adjacent properties.
- The Earth Moving Ordinance No. 2007-091, continues to provide for control where earth may be disturbed and cause or create potential flood hazards to others.
- Drainage System Maintenance—Stormwater Utilities staff provide for a portion of inspections and maintenance monitoring of ponds or other stormwater facilities within the private sector that relate to stormwater utility assessments.
- Flood Risk Maps--Sarasota County uses the SLOSH models for storm surge data and evacuation data as it relates to hurricanes. Citizens can use the website, or maps to identify where a Category 1, 2, 3, 4 or 5 storm surge may impact Sarasota County. The other risk of flooding involves the one to three foot waves that can occur any time in velocity areas along the coastline or intense amounts of rainfall that can cause ponding or sheet flow (flash flooding) that threaten structures. Sarasota County currently has two sources of information to use for identifying the one percent chance of flooding. The first are the 49 Flood Insurance Rate Map (FIRMs) panels adopted locally and administered by FEMA. The second source of identifying the one percent annual chance of flooding is local flood studies.
- Level of Service—Sarasota County works closely with Southwest Florida Water Management District (SWFWMD) and serves as the Cooperative Technical Partner for flood risk mapping (digital flood map updates) and locally adopted flood studies for eventual inclusion.

- The goal of the Sarasota County Repetitive Loss Plan is to reduce the number of repetitive loss properties within the County.
- The Gulf of Mexico Watershed spans a total of 3,242.9 square miles, 14% of which lies within Sarasota County. The area within the County, totaling 451.7 square miles, is the only portion of the watershed for which information is available on the Sarasota County Water Atlas.
- Public Outreach Strategy Plan

For the reasons stated above, the project is in compliance with EO 11988, Floodplain Management.

### 5.23 E.O. 12898, ENVIRONMENTAL JUSTICE

This action would not result in adverse human health or environmental effects that would be disproportionately higher towards minority or low-income populations. The activities will not affect subsistence consumption of fish and wildlife. This project is in compliance with the goals of this Executive Order.

### 5.24 E.O. 13089, CORAL REEF PROTECTION

This EO refers to "those species, habitats, and other natural resources associated with coral reefs." This project may affect U.S. coral reef ecosystems as defined by this EO. The borrow areas were designed with 400-foot buffers around all hardbottom areas to prevent impacts (see **Section 4.25.1**). Precautions would be implemented during construction to minimize impacts.

### 5.25 E.O. 13112, INVASIVE SPECIES

The proposed action will require the mobilization of dredge equipment from other geographical regions. Dredge equipment has the potential to transport species from one region to another, introducing them to new habitats where they are able to out-compete native species. The benefits of the proposed project outweigh the risks associated with the very slight potential for introducing non-native species to this region. The action takes place solely in ocean waters, minimizing risk to more sheltered coastal habitats.

This Draft EA will be coordinated with the Invasive Species Council, and is consistent with the Florida Invasive Species Strategic Plan.

### 5.26 E.O. 13186, MIGRATORY BIRDS

This Executive Order requires, among other things, a Memorandum of Understanding (MOU) between the Federal Agency and the U.S. Fish and Wildlife Service concerning migratory birds. No final MOU exists between the USACE and the USFWS pursuant to this Executive Order; however, there is an MOU between the Department of Defense and the USFWS, and there is a draft MOU between the USACE and the USFWS. Neither the Department of Defense MOU nor the USACE Draft MOU clearly address migratory birds on lands not owned or controlled by the

USACE, as is the case with the project area. For many Corps civil works projects, the real estate interests are provided by the non-Federal sponsor. Control and ownership of the project lands remain with a non-Federal interest. The Corps will include our standard migratory bird protection requirements in the project plans and specifications and will require the contractor to abide by those requirements. Measures to avoid the destruction of migratory birds and their eggs or hatchlings are described in a section above on the Migratory Bird Treaty Act.

### 5.27 E.O. 13045, PROTECTION OF CHILDREN

A growing body of scientific knowledge demonstrates that children may suffer disproportionately from environmental health risks and safety risks. These risks arise because: children's neurological, immunological, digestive, and other bodily systems are still developing; children eat more food, drink more fluids, and breathe more air in proportion to their body weight than adults; children's size and weight may diminish their protection from standard safety features; and children's behavior patterns may make them more susceptible to accidents because they are less able to protect themselves. This Executive Order requires Federal agencies to make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children.

This project will not negatively impact the food supplies, drinking water, or air quality to which children are exposed. The construction site will be hazardous to children, but the project specifications include a number of protocols intended to designate the work area and prevent non-authorized personnel from entering the site. These protocols include the installation of orange safety fencing and danger signs, functioning back-up warning signals on all construction equipment, and providing site security when on-site construction activities have temporarily ceased. The project specifications also require Contractors to adhere to the provisions outlined in Engineering Manual 385-1-1 (15 September 2008).

# 6 LIST OF PREPARERS

## 6.1 PREPARERS

| | |
|---|---|
| Aubree Gallaher Hershorin, Biologist | USACE |
| Wendy Weaver, Archaeologist | USACE |

## 6.2 REVIEWERS

| | |
|---|---|
| Paul DeMarco, Biologist | USACE |
| Jason Spinning, Supervisory Biologist | USACE |

# 7 PUBLIC INVOLVEMENT

## 7.1 SCOPING AND DRAFT EA

The draft EA and Finding of No Significant Impact (FONSI) will be made available to the public by Notice of Availability.

## 7.2 AGENCY COORDINATION

Agency coordination letters and pertinent correspondence are found in **Appendix C**. The mailing list for the Notice of Availability is included as **Appendix D**, and the draft EA will be posted to the USACE website at http://www.saj.usace.army.mil/Divisions/Planning/Branches/Environmental/DocsNotices_OnLine_SarasotaCo.htm.

## 7.3 LIST OF RECIPIENTS

The Notice of Availability of the draft EA will be mailed to the parties listed on the mailing list, included as **Appendix D**.

## 7.4 COMMENTS RECEIVED AND RESPONSES

Any comments received as a result of the circulation of the draft EA will be addressed in this section of the Final EA.

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# 9 INDEX

# APPENDIX A - SECTION 404(B) EVALUATION

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**SECTION 404(b) EVALUATION**

**BEACH NOURISHMENT**
**HURRICANE AND STORM DAMAGE REDUCTION PROJECT**
**VENICE BEACH, SARASOTA COUNTY, FLORIDA**

I. Project Description

a. Location. The project is located on the west coast of Florida, approximately 55 miles south of Tampa. It is situated on Manasota Key, a barrier island in Sarasota County separated from the mainland by tidal inlets. The Florida Department of Environmental Protection (FDEP) reference monuments are R-116 to R-133, for a total project length of 3.2 miles.

b. General Description. The project proposes to utilize sand from one of four offshore borrow areas for renourishment of critically eroded beach.

c. Authority and Purpose. Local interests in Sarasota County have explored comprehensive solutions to shoreline erosion problems since the early 1960s. The U.S. Senate and the U.S. House of Representatives adopted resolutions in 1964 requesting the Secretary of the Army, acting through the Chief of Engineers, to survey the Sarasota County shoreline and adjacent shorelines in support of beach erosion control, hurricane protection, and related efforts. In 1984, the *Beach Erosion Control Study for Sarasota County, Florida, with Environmental Impact Statement* recommended a plan for constructing a protective beach and/or periodic nourishment along 2.4 miles of shoreline on Longboat Key, and initial construction of 4.0 miles with periodic nourishment of 5.6 miles of shoreline on Manasota Key, in the vicinity of Venice, Florida. Congress authorized this plan in the Water Resources Development Act (WRDA) of 1986 at an estimated total project cost of $30,100,000. The project is authorized for 50 years of federal participation from the completion of the initial construction in 1996 through 2046. The cost apportionment for the project included Section 111 considerations for erosion resulting from the Caseys Pass Federal Navigation project constructed in 1937.

The project was modified in 1991/1992 to reduce the length of shoreline to 3.2 miles of shoreline on Manasota Key, to re-evaluate the volume requirements, and to address physical changes in the placement area. These changes are described in the *1992 Sarasota County, Florida Shore Protection Project Post Authorization Change* (PAC) *Report*. The segment of the project referred to as Brohard Beach (R-129 to R-133) was only barely justified with a 20 foot berm width because of protection provided for the wastewater treatment plant located between R-132 and R-133.

The wastewater treatment facility was removed in 2005 and in 2010 a public park used for recreation opened up in its place. The Brohard segment was previously incrementally justified based upon the wastewater treatment plant. Because this expensive piece of infrastructure has been removed from the project area, the southern segment of the project from R-129 to R-133 is no longer incrementally justified based on HSDR purposes. Engineering Regulation (ER) 1105-2-100 requires that each reach of a project be incrementally justified. The non-Federal sponsor desires the Brohard segment remain in future nourishments at 100 percent non-Federal cost. The project footprint and beach fill design from R-116 to R-133 remain the same as previously authorized.

This project is now referred to as the Hurricane and Storm Damage Reduction (HSDR) Project. The non-Federal sponsor for this project is the City of Venice.

d. General Description of Dredged or Fill Material.

(1) *General Characteristics of Material.* The excavated material to be placed on the beach is sandy material that meets the requirements outlined in F.A.C. 62B-41.007(2)(j).

(2) *Quantity of Material.* Future nourishments are anticipated to require 810,000 cubic yards of sand to be placed on the beach every ten years to maintain the authorized profile.

(3) *Source of Material.* The material will be dredged from one of four borrow areas shown in Figure 1.

e. Description of the Proposed Discharge Site(s).

*(1) Location.* The material will be placed on the beach using a pipeline system.

*(2) Size. The* material will be placed along approximately 3.2 miles of beach.

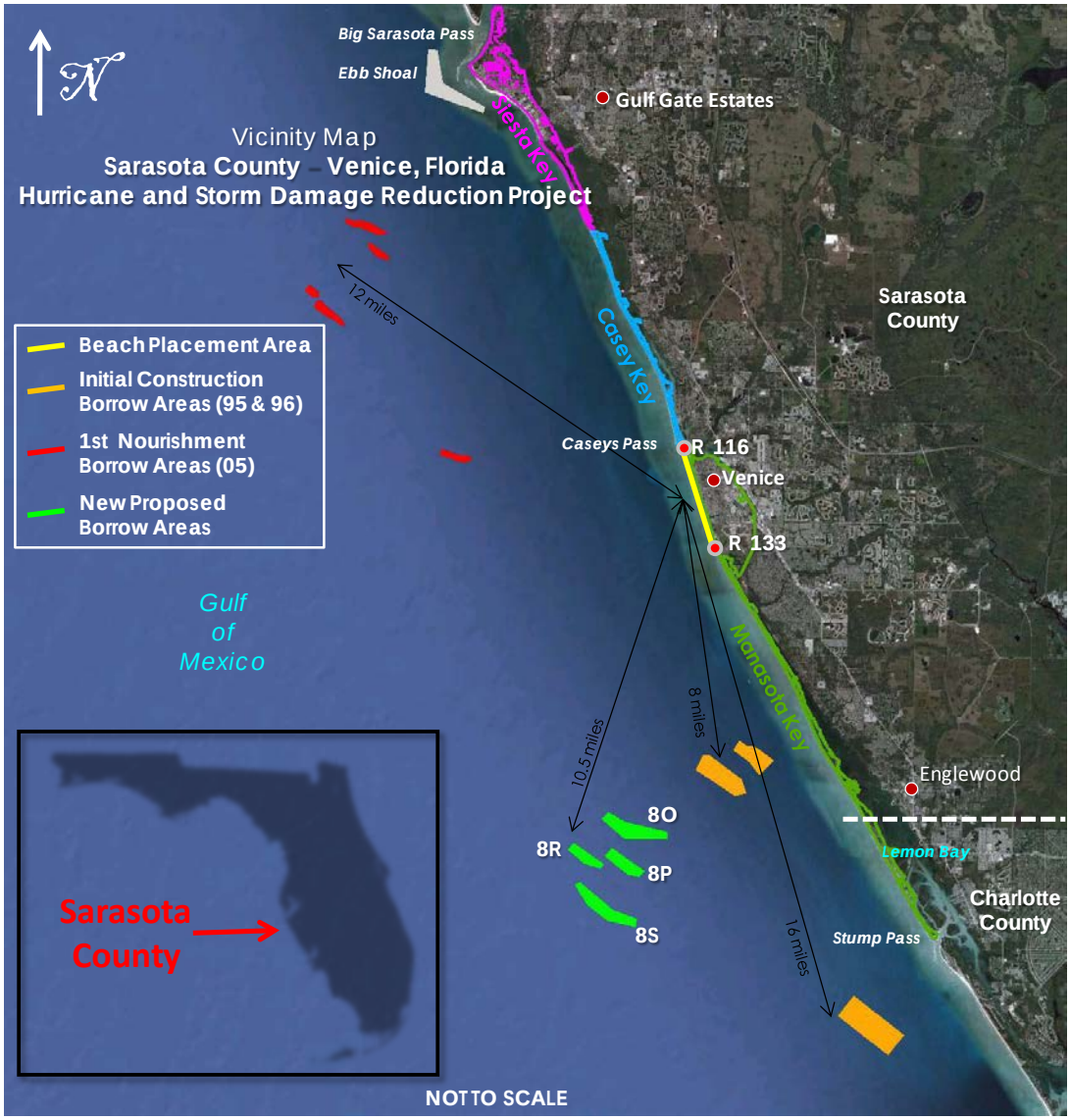
*(3) Type of Site*. The material will be placed directly on the beach and manipulated with bulldozers and other machinery to establish the designed profile.

*(4) Type(s) of Habitat.* Beach habitat with sandy substrate.

*(5) Timing and Duration of Discharge.* Beach placement could occur year-round, at any time of day.

f. Description of Disposal Method. Due to the distance of the borrow areas from the beach, a hopper dredge is the most likely dredge type to construct this project. However, a cutter-suction or mechanical dredge using a barge/scow with pump-out

capabilities could also effectively conduct this work. The material would be piped from the nearshore area onto the beach.




Source: Google Aerial, 2010.

**Figure 1. Project Location Map**.

II. Factual Determinations

a. Physical Substrate Determinations.

*(1) Substrate Elevation and Slope.* The sea floor at the borrow areas is characterized by the presence of undulating topography with a large sandy shoal rising to an elevation of about 8 to 11 feet above the surrounding terrain (see **Figure 2**). Depths at the borrow areas range from -27 feet to -52 feet MSL.

*(2) Sediment Type.* The material within the proposed dredge limits generally consists of poorly-graded, fine to medium-grained quartz sand with an average visual shell content of 36.4 percent. The mean grain size is 0.43 mm with a standard deviation of 1.14. All samples within the area contain less than 5 percent silt with an average silt content of 2.01 percent. Based on the above criteria, the borrow area material is suitable for beach placement based on the Florida "Sand Rule" (F.A.C. 62B-41.007(j)) which requires beach compatible fill to contain less than 5 percent silt.

*(3) Dredged/Fill Material Movement.* The dredged material placed on the beach will become part of the littoral drift system, moving offshore and onshore with seasonal wave action, and also southward as part of the longshore sediment transport processes.

(4) *Physical Effects on Benthos*. Benthic organisms would be temporarily impacted by beach placement operations; however, they should begin to recolonize in less than one year. Full recovery is anticipated over several years.

(5) *Actions Taken to Minimize Impacts.* Beach placement activities will be monitored to ensure that turbidity levels do not exceed allowable levels, and that sand is constrained to the project profile. Post-construction monitoring will also be conducted to survey for compaction and performance.

b. Water Circulation, Fluctuation, and Salinity Determinations.

(1) *Water Column Effects*.

(i) Salinity: No significant effect.

Water Chemistry: No significant effect.

(ii) Clarity: A temporary increase in turbidity would reduce water clarity in the nearshore area.

Color: Temporary turbidity would alter the water color.

(iii) Odor: No significant effect.

(iv) Taste: No significant effect.

(v) Dissolved Gas Levels: No significant effect.

(vi) Nutrients: No significant effect.

(vii) Eutrophication: No significant effect.

*(2) Current Flow and Water Circulation.*

(i) Current Patterns and Flow. Currents in the project area are primarily tidal. The project is not anticipated to alter tidal patterns or local water circulation.

(ii) Velocity. No significant effect.

(iii) Stratification. No significant effect.

(iv) Hydrologic Regime. No significant effect.

(3) *Normal Water Level Fluctuations.* Tides in the project area are semi-diurnal with varying levels throughout the year. The project would not affect normal water level fluctuations.

(4) *Salinity Gradients*. The project would not affect salinity gradients.

(5) *Actions That Will Be Taken to Minimize Impacts*. As previous mentioned, turbidity will be monitored during project construction. No other significant effects to water circulation, fluctuation, or salinity are anticipated to occur.

c. Suspended Particulate/Turbidity Determinations.

(1) *Expected Changes in Suspended Particulates and Turbidity Levels in Vicinity of Disposal Site.* There will be a temporary increase in suspended particulates and turbidity levels in the vicinity of the disposal site.

(2) *Effects (degree and duration) on Chemical and Physical Properties of the Water Column*.

(i) Light Penetration. Light penetration would temporarily decrease during beach placement operations.
(ii) Dissolved Oxygen. No significant effect.
(iii) Toxic Metals and Organics. No significant effect.
(iv) Pathogens. No significant effect.
(v) Aesthetics. Turbidity would temporarily decrease the aesthetic value of the nearshore waters. The turbidity is expected to return to pre-construction levels shortly after construction is complete.

(3) *Effects on Biota*

(i) Primary Production, Photosynthesis. No significant effect.
(ii) Suspension/Filter Feeders. Turbidity would temporarily affect filter feeders during construction.
(iii) Sight Feeders. Turbidity would temporarily affect sight feeders during construction.

(4) *Actions taken to Minimize Impacts*. As previous mentioned, turbidity will be monitored during project construction to ensure that levels do not exceed authorized levels. Should turbidity levels exceed authorized levels, construction activities would cease until turbidity could be maintained at appropriate levels.

d. Contaminant Determinations. Levels of contaminants are not expected to have a significant impact on plankton, benthos, nekton, or the aquatic food web.

e. Aquatic Ecosystem and Organism Determinations.

*(1) Effects on Plankton.* No significant effect.

*(2) Effects on Benthos.* Benthic invertebrates would be affected by the project, but they would be expected to begin recovery within one year.

*(3) Effects on Nekton.* No significant effect.

*(4) Effects on Aquatic Food Web.* Although benthic invertebrates would be affected, significant affects on the aquatic food web are not anticipated.

*(5) Effects on Special Aquatic Sites.*

(i) Sanctuaries and Refuges. The project area is located south of the Little Sarasota Bay Manatee Refuge. No other sanctuaries or refuges are known to be found in the project area.
(ii) Wetlands. No significant effect.
(iii) Mud Flats. No significant effect.
(iv) Vegetated Shallows. No significant effect.
(v) Coral Reefs. There are no coral reefs located in the project area. Impacts to nearshore hardbottom habitats were mitigated through the construction of artificial reefs as part of previous nourishments of this project.
(vi) Riffle and Pool Complexes. No significant effect.

*(6) Threatened and Endangered Species.* The project would not have a significant impact on threatened and endangered species. Standard protection measures for in-water work would be implemented to protect listed species in the project area, including manatees, sea turtles, and smalltooth sawfish. Measures to protect the wintering piping plover would also be implemented.

*(7) Other Wildlife.* Other wildlife would not be able to utilize the beach during project construction, which could cause a temporary adverse impact.

*(8) Actions to Minimize Impacts.* Measures will be taken to avoid and/or minimize impacts to protected species and other wildlife. Please see **Sections 4.3** and **4.4** of the Environmental Assessment for additional information.

f. Proposed Disposal Site Determinations.

(1) *Mixing Zone Determination.* The mixing zone determination will be in accordance with the Water Quality Certification issued for this project.

(2) *Determination of Compliance with Applicable Water Quality Standards.* The work will be conducted in accordance with the Water Quality Certification issued for this project.

*(3) Potential Effects on Human Use Characteristic.*

(i) Municipal and Private Water Supply. No effects are anticipated.

(ii) Recreational and Commercial Fisheries. No significant effect.

(iii) Water Related Recreation. Temporary impacts to water related recreation would occur during project construction.

(iv) Aesthetics. The aesthetic appeal of the beach and nearshore area would be impacted during project construction.

(v) Parks, National and Historical Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar Preserves. No parks, national or historic monuments, national seashores, wilderness areas, research sites, or similar preserves would be affected by the project.

g. Determination of Cumulative Effects on the Aquatic Ecosystem. The cumulative effect of the project would be a beneficial, long-term increase in sediment to the littoral drift system. However, sediment may enter the nearshore area and cause sedimentation on hardbottom communities. These communities are typically ephemeral communities that experience sedimentation on a seasonal basis, and significant impacts are not anticipated.

h. Determination of Secondary Effects on the Aquatic Ecosystem. Adding sand to the system at the project location will provide a source of sand for downdrift beaches, potentially decreasing erosion rates there.

III. Findings of Compliance or Non-Compliance With the Restrictions on Discharge

a. Adaptation of the Section 404(b)(l) Guidelines to this Evaluation. No significant adaptations of the guidelines were made relative to this evaluation.

b. Evaluation of Availability of Practicable Alternatives to the Proposed Discharge Site Which Would Have Less Adverse Impact on the Aquatic Ecosystem. Twenty-four alternatives were initially developed for consideration as part of the 1984 Environmental Impact Statement. Of these alternatives (11 nonstructural, 12 structural, and No Action), six alternatives (one nonstructural, four structural, and No Action) were retained for further detailed study in that document. The current discharge site was identified as the Preferred Alternative as a result of that analysis.

The current EA evaluates the proposed discharge site and the no action alternative. The no action alternative does not meet project needs, and would allow continued erosion of the shoreline.

c. Compliance with Applicable State Water Quality Standards. Beach placement activities would be performed in compliance with the Water Quality Certification issued by the State of Florida.

d. Compliance with Applicable Toxic Effluent Standard or Prohibition Under Section 307 Of the Clean Water Act. The discharge operation would not violate the Toxic Effluent Standards of Section 307 of the Clean Water Act.

e. Compliance with Endangered Species Act of 1973 (ESA). The project has been coordinated with both the U.S. Fish and Wildlife Service and the National Marine Fisheries Service. The proposed project would not jeopardize the continued existence of any species listed under the ESA, nor would it result in the destruction or adverse modification of any critical habitat as specified by the Act.

f. Compliance with Specified Protection Measures for Marine Sanctuaries Designated by the Marine Protection, Research, and Sanctuaries Act of 1972. There are no national marine sanctuaries located in the project area; therefore, this Act does not apply to this project.

g. Evaluation of Extent of Degradation of the Waters of the United States

*(1) Significant Adverse Effects on Human Health and Welfare*

(i) Municipal and Private Water Supplies. No significant effect.
(ii) Recreation and Commercial Fisheries. Recreational and commercial fishing interests would not be able to use the area surrounding the borrow sites or the nearshore area for fishing during project construction. No other impact is anticipated.
(iii) Plankton. No substantial adverse effects are anticipated.
(iv) Fish. No substantial adverse effects are anticipated.
(v) Shellfish. No substantial adverse effects are anticipated.
(vi) Wildlife. No substantial adverse effects are anticipated.
(vii) Special Aquatic Sites. No substantial adverse effects are anticipated.

*(2) Significant Adverse Effects on Life Stages of Aquatic Life and Other Wildlife Dependent on Aquatic Ecosystems.* Most impacts would not be significant, and would be short-term in duration.

(3) *Significant Adverse Effects on Aquatic Ecosystem Diversity, Productivity and Stability.* No significant adverse effects on aquatic ecosystem diversity, productivity and stability are anticipated.

*(4) Significant Adverse Effects on Recreational, Aesthetic, and Economic Values.* Recreation and aesthetic values would be temporarily disrupted due to construction activity, but significant effects are not anticipated.

h. Appropriate and Practicable Steps Taken to Minimize Potential Adverse Impacts of the Discharge on the Aquatic Ecosystem. Appropriate and practicable steps will be taken during project construction to minimize the potential adverse impacts of the discharge on the aquatic ecosystem. As was previously mentioned, turbidity monitoring will occur during project construction to ensure recommended levels are not exceeded. For more information, see **Section 4** of the EA.

i. On the basis of the guidelines, the proposed disposal site(s) for the discharge of dredged or fill material is specified as complying with the requirements of these guidelines, with the inclusion of appropriate and practical conditions to minimize pollution or adverse effects on the aquatic ecosystem.

**FINDING OF COMPLIANCE**
**FOR**
**VENICE BEACH HURRICANE AND STORM DAMAGE REDUCTION PROJECT**
**SARASOTA COUNTY, FLORIDA**

1. No significant adaptations of the guidelines were made relative to this evaluation.

2. Four borrow areas are identified as sand sources for this project. Neither the dredging of sand from these four sites, nor the placement of sand on the beach, will have a significant effect on water levels, fluctuation, circulation, or currents.

3. The planned disposal of dredged material would not violate any applicable State water quality standards with the possible exception of turbidity. Turbidity standards would be monitored pursuant to the Water Quality Certification issued by the State of Florida. If a violation is observed, disposal operations will cease until turbidity levels can be maintained at authorized levels. The disposal operation will not violate the Toxic Effluent Standards of Section 307 of the Clean Water Act.

4. The proposed discharge of sandy material on the beach will not harm any endangered species or their critical habitat.

5. The proposed disposal of dredged material will not result in significant adverse effects to human health and welfare, including municipal and private water supplies, recreation and commercial fishing, plankton, fish, shellfish, wildlife, and special aquatic sites. The life stages of aquatic life and other wildlife will not be significantly adversely affected. Significant adverse effects on aquatic ecosystem diversity, productivity and stability, and recreational, aesthetic and economic values will not occur.

6. The proposed project has been determined to be consistent to the maximum extent practicable with the Florida Coastal Zone Management Program.

7. Appropriate steps will be taken to minimize potential adverse impacts of the discharge on aquatic systems.

8. On the basis of these guidelines, the proposed disposal site for the discharge of dredged material is specified as complying with the inclusion of appropriate and practical conditions to minimize pollution or adverse effects to the aquatic ecosystem.

# APPENDIX B - COASTAL ZONE MANAGEMENT CONSISTENCY

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**FLORIDA COASTAL ZONE MANAGEMENT PROGRAM**
**FEDERAL CONSISTENCY EVALUATION PROCEDURES**

**BEACH NOURISHMENT**
**HURRICANE AND STORM DAMAGE REDUCTION PROJECT**
**VENICE BEACH, SARASOTA COUNTY, FLORIDA**

**Enforceable Policy.** Florida State Statues considered "enforceable policy" under the Coastal Zone Management Act (www.dep.state.fl.us/cmp/federal/24_statutes.htm ).

**Applicability of the Coastal Zone Management Act.**

The following table summarizes the process and procedures under the Coastal Zone Management Act for Federal Actions and for non-Federal Applicants*.

| Item | Non-Federal Applicant (15 CFR 930, subpart D) | Federal Action (15 CFR 930, subpart C) |
|---|---|---|
| Enforceable Policies | Reviewed and approved by NOAA (in FL www.dep.state.fl.us/cmp/federal/24_statutes.htm ) | Same |
| Effects Test | Direct, Indirect (cumulative, secondary), adverse or beneficial | Same |
| Review Time | 6 months from state receipt of Consistency Certification (30-days for completeness notice) Can be altered by written agreement between State and applicant | 60 Days, extendable (or contractible) by mutual agreement |
| Consistency | Must be Fully Consistent | To Maximum Extent Practicable** |
| Procedure Initiation | Applicant provides Consistency Certification to State | Federal Agency provides "Consistency Statement" to State |
| Appealable | Yes, applicant can appeal to Secretary (NOAA) | No (NOAA can "mediate") |
| Activities | Listed activities with their geographic location (State can request additional listing within 30 days) | Listed or Unlisted Activities in State Program |
| Activities in Another State | Must have approval for interstate reviews from NOAA | Interstate review approval NOT required |
| Activities in Federal Waters | Yes, if activity affects state waters | Same |

* There are separate requirements for activities on the Outer Continental Shelf (subpart E) and for "assistance to an applicant agency" (subpart F).

** Must be fully consistent except for items prohibited by applicable law (generally does not count lack of funding as prohibited by law, 15 CFR 930.32).

**Coastal Zone Consistency Statement by Statute/Enforceable Policy.**

## Chapter 161, F.S., Beach and Shore Preservation

Coastal areas are among the state's most valuable natural, aesthetic, and economic resources; and they provide habitat for a variety of plant and animal life. The state is required to protect coastal areas from imprudent activities that could jeopardize the stability of the beach-dune system, accelerate erosion, provide inadequate protection to upland structures, endanger adjacent properties, or interfere with public beach access. Coastal areas used, or likely to be used, by sea turtles are designated for nesting, and the removal of vegetative cover that binds sand is prohibited. This statute provides policy for the regulation of construction, reconstruction, and other physical activities related to the beaches and shores of the state. Additionally, this statute requires the restoration and maintenance of critically eroding beaches.

**Response:** The proposed plans and information will be submitted to the State by the City of Venice in compliance with this chapter.

## Chapter 163, Part II, F.S., Intergovernmental Programs: Growth Policy, County and Municipal Planning: Land Development Regulation

The purpose of this statute is to provide for the implementation of comprehensive planning programs to guide and control future development in the state. The comprehensive planning process encourages units of local government to preserve, promote, protect, and improve the public health, safety, comfort, good order, appearance, convenience, law enforcement and fire prevention, and general welfare; prevent the overcrowding of land and avoid undue concentration of population; facilitate the adequate and efficient provision of public facilities and services; and conserve, develop, utilize, and protect natural resources within their jurisdictions.

Chapter 163 , Part II Intergovernmental Programs: Growth Policy; County and Municipal Planning; Land Development Regulation

Enforceable policy includes only:

Sections 163.3164 Local Government Comprehensive Planning and Land Development Regulation Act; definitions;

.3177(6)(a) requiring a future land use plan element designating proposed future general distribution, location, and extent of the uses of land for residential uses, commercial uses, industry, agriculture, recreation, conservation, education, public buildings and grounds, other public facilities, and other categories of the public and private uses of land.

(10)(h). public facilities and services needed to support development shall be available concurrent with the impacts of such development in accordance with s. 163.3180. [see .3180(2)(a-c), (5)(a&c), (6), and (8); below].

(10)(l). consider land use compatibility issues in the vicinity of all airports in coordination with the Department of Transportation and adjacent to or in close proximity to all military installations in coordination with the Department of Defense.

(11)(a). innovative approaches to development which may better serve to protect environmentally sensitive areas, maintain the economic viability of agricultural and other predominantly rural land uses, and provide for the cost-efficient delivery of public facilities and services.

(11)(c). maximize the use of existing facilities and services through redevelopment, urban infill development, and other strategies for urban revitalization.

.3178(1) local government comprehensive plans restrict development activities where such activities would damage or destroy coastal resources, and that such plans protect human life and limit public expenditures in areas that are subject to destruction by natural disaster.

(2)(d-j); studies, surveys, and data; be consistent with coastal resource plans prepared and adopted pursuant to general or special law; and contain:

(d) A component which outlines principles for hazard mitigation and protection of human life against the effects of natural disaster, including population evacuation, which take into consideration the capability to safely evacuate the density of coastal population proposed in the future land use plan element in the event of an impending natural disaster. The Division of Emergency Management shall manage the update of the regional hurricane evacuation studies, ensure such studies are done in a consistent manner, and ensure that the methodology used for modeling storm surge is that used by the National Hurricane Center.

(e) A component which outlines principles for protecting existing beach and dune systems from human-induced erosion and for restoring altered beach and dune systems.

(f) A redevelopment component which outlines the principles which shall be used to eliminate inappropriate and unsafe development in the coastal areas when opportunities arise.

(g) A shoreline use component that identifies public access to beach and shoreline areas and addresses the need for water-dependent and water-related facilities, including marinas, along shoreline areas. Such component must include the strategies that will be used to preserve recreational and commercial working waterfronts as defined in s. 342.07.

(h) Designation of coastal high-hazard areas and the criteria for mitigation for a comprehensive plan amendment in a coastal high-hazard area as defined in subsection (9). The coastal high-hazard area is the area below the elevation of the category 1 storm surge line as established by a Sea, Lake, and Overland Surges from Hurricanes (SLOSH) computerized storm surge model. Application of mitigation and the application of development and redevelopment policies, pursuant to s. 380.27(2), and any rules adopted thereunder, shall be at the discretion of local government.

(i) A component which outlines principles for providing that financial assurances are made that required public facilities will be in place to meet the demand imposed by the completed development or redevelopment. Such public facilities will be scheduled for phased completion to coincide with demands generated by the development or redevelopment.

(j) An identification of regulatory and management techniques that the local government plans to adopt or has adopted in order to mitigate the threat to human life and to control proposed development and redevelopment in order to protect the coastal environment and give consideration to cumulative impacts.

.3180(2)(a-c), (a) Consistent with public health and safety, sanitary sewer, solid waste, drainage, adequate water supplies, and potable water facilities shall be in place and available to serve new development no later than the issuance by the local government of a certificate of occupancy or its functional equivalent. Prior to approval of a building permit or its functional equivalent, the local government shall consult with the applicable water supplier to determine whether adequate water supplies to serve the new development will be available no later than the anticipated date of issuance by the local government of a certificate of occupancy or its functional equivalent. A local government may meet the concurrency requirement for sanitary sewer through the use of onsite sewage treatment and disposal systems approved by the Department of Health to serve new development.

(b) Consistent with the public welfare, and except as otherwise provided in this section, parks and recreation facilities to serve new development shall be in place or under actual construction no later than 1 year after issuance by the local government of a certificate of occupancy or its functional equivalent. However, the acreage for such facilities shall be dedicated or be acquired by the local government prior to issuance by the local government of a certificate of occupancy or its functional equivalent, or funds in the amount of the developer's fair share shall be committed no later than the local government's approval to commence construction.

(c) Consistent with the public welfare, and except as otherwise provided in this section, transportation facilities needed to serve new development shall be in place or under actual construction within 3 years after the local government approves a building permit or its functional equivalent that results in traffic generation.

(5)(a&c),

(a) … planning and public policy goals may come into conflict with the requirement that adequate public transportation facilities and services be available concurrent with the impacts of such development. … in urban centers transportation cannot be effectively managed and mobility cannot be improved solely through the expansion of roadway capacity, that the expansion of roadway capacity is not always physically or financially possible, and that a range of transportation alternatives is essential to satisfy mobility needs, reduce congestion, and achieve healthy, vibrant centers.

(c) … developments located within urban infill, urban redevelopment, urban service, or downtown revitalization areas or areas designated as urban infill and redevelopment areas under s. 163.2517, which pose only special part-time demands on the transportation system, are exempt from the concurrency requirement for transportation facilities. A special part-time demand is one that does not have more than 200 scheduled events during any calendar year and does not affect the 100 highest traffic volume hours.

(6) a de minimis impact [on a transportation facility] is consistent with this part.

(8) When assessing the transportation impacts of proposed urban redevelopment within an established existing urban service area, 110 percent of the actual transportation impact caused by the previously existing development must be reserved for the redevelopment…

.3194(1)(a); After a comprehensive plan, or element or portion thereof, has been adopted in conformity with this act, all development undertaken by, and all actions taken in regard to development orders by, governmental agencies in regard to land covered by such plan or element shall be consistent with such plan or element as adopted.

.3202(2)(a-h); Local land development regulations shall contain specific and detailed provisions necessary or desirable to implement the adopted comprehensive plan and shall as a minimum:

(a) Regulate the subdivision of land.

(b) Regulate the use of land and water for those land use categories included in the land use element and ensure the compatibility of adjacent uses and provide for open space.

(c) Provide for protection of potable water wellfields.

(d) Regulate areas subject to seasonal and periodic flooding and provide for drainage and stormwater management.

(e) Ensure the protection of environmentally sensitive lands designated in the comprehensive plan.

(f) Regulate signage.

(g) Provide that public facilities and services meet or exceed the standards established in the capital improvements element required by s. 163.3177 and are available when needed for the development, or that development orders and permits are conditioned on the availability of these public facilities and services necessary to serve the proposed development. Not later than 1 year after its due date established by the state land planning agency's rule for submission of local comprehensive plans pursuant to s. 163.3167(2), a local government shall not issue a development order or permit which results in a reduction in the level of services for the affected public facilities below the level of services provided in the comprehensive plan of the local government.

(h) Ensure safe and convenient onsite traffic flow, considering needed vehicle parking.

.3220(2)&(3).

(2) (a) The lack of certainty in the approval of development can result in a waste of economic and land resources, discourage sound capital improvement planning and financing, escalate the cost of housing and development, and discourage commitment to comprehensive planning.

(b) Assurance to a developer that upon receipt of his or her development permit or brownfield designation he or she may proceed in accordance with existing laws and policies, subject to the conditions of a development agreement, strengthens the public planning process, encourages sound capital improvement planning and financing, assists in assuring there are adequate capital facilities for the development, encourages private participation in comprehensive planning, and reduces the economic costs of development.

(3) In conformity with, in furtherance of, and to implement the Local Government Comprehensive Planning and Land Development Regulation Act and the Florida State Comprehensive Planning Act of 1972, it is the intent of the Legislature to encourage a stronger commitment to comprehensive and capital facilities planning, ensure the provision of adequate public facilities for development, encourage the efficient use of resources, and reduce the economic cost of development.

**Response:** The proposed project has been coordinated with various Federal, State and local agencies during the planning process. The project meets the primary goal of the State Comprehensive Plan through preservation and protection of the shorefront development and infrastructure.

## Chapter 186, F.S., State and Regional Planning

The state comprehensive plan provides basic policy direction to all levels of government regarding the orderly social, economic, and physical growth of the state. The goals, objectives, and policies of the state comprehensive plan are statewide in scope and are consistent and compatible with each other. The statute provides direction for the delivery of governmental services, a means for defining and achieving the specific goals of the state, and a method for evaluating the accomplishment of those goals.

**Response:** The proposed project has been coordinated with various Federal, State and local agencies during the planning process. The project meets the primary goal of the State Comprehensive Plan through preservation and protection of the shorefront development and infrastructure.

## Chapter 252, F.S., Emergency Management

The state of Florida is vulnerable to a wide range of emergencies, including natural, technological, and manmade disasters and this vulnerability is exacerbated by the tremendous growth in the state's population, especially the growth in the number of persons residing in coastal areas, in the elderly population, in the number of seasonal vacationers, and in the number of persons with special needs. This statute directs the state to reduce the vulnerability of its people and property to natural and manmade disasters; prepare for, respond to and reduce the impacts of disasters; and decrease the time and resources needed to recover from disasters. Disaster mitigation is necessary to ensure the common defense of Floridians' lives and to protect the public peace, health, and safety. The policies provide the means to assist in the prevention or mitigation of emergencies that may be caused or aggravated by the inadequate planning or regulation of facilities and land uses. State agencies are directed to keep land uses and facility construction under continuing study and identify areas that are particularly susceptible to natural or manmade catastrophic occurrences.

**Response:** The proposed project involves the placing of beach compatible material onto an eroding beach as a protective means for residents, development and infrastructure located along the Gulf shoreline in Sarasota County. Therefore, this project would be consistent with the efforts of Division of Emergency Management.

### Chapter 253, F.S., State Lands

The Board of Trustees of the Internal Improvement Trust Fund (Trustees) is vested and charged with the acquisition, administration, management, control, supervision, conservation, protection, and disposition of all lands owned by the state. Lands acquired for preservation, conservation and recreation serve the public interest by contributing to the public health, welfare and economy. In carrying out the requirements of this statute, the Trustees are directed to take necessary action to fully: conserve and protect state lands; maintain natural conditions; protect and enhance natural areas and ecosystems; prevent damage and depredation; and preserve archaeological and historical resources. All submerged lands are considered single-use lands to be maintained in natural condition for the propagation of fish and wildlife and public recreation. Where multiple-uses are permitted, ecosystem integrity, recreational benefits and wildlife values are conserved and protected.

Not approved as enforceable policy: Section 253.61(1)(d). … no lease of the type covered by this law shall be granted, sold, or executed south of 26° north latitude off Florida's west coast and south of 27° north latitude off Florida's east coast…. After July 31, 1990, no oil or natural gas lease shall be granted, sold, or executed covering lands located north of 26°00'00" north latitude off Florida's west coast to the western boundary of the state bordering Alabama … or located north of 27°00'00" north latitude off Florida's east coast to the northern boundary of the state bordering Georgia ….

**Response:** The proposed beach nourishment would create increased recreational beach and potential sea turtle nesting habitat. No seagrass beds are located within the area proposed to receive fill. The proposed project would comply with the intent of this chapter.

### Chapter 258, F.S., State Parks and Preserves

The statute addresses the state's administration of state parks, aquatic preserves, and recreation areas, which are acquired to emblemize the state's natural values and to ensure that these values are conserved for all time. Parks and preserves are managed for the non-depleting use, enjoyment, and benefit of Floridians and visitors and to contribute to the state's tourist appeal. Aquatic Preserves are recognized as having exceptional biological, aesthetic, and scientific value and are set aside for the benefit of future generations. Disruptive physical activities and polluting discharges are highly restricted in aquatic preserves. State managed wild and scenic rivers possess exceptionally remarkable and unique ecological, fish and wildlife, and recreational values and are designated for permanent preservation and enhancement for both the present and future.

**Response:** The proposed project is not located in the vicinity of a State Park or Aquatic Preserve. The project is consistent with this chapter.

### Chapters 259, F.S., Land Acquisition for Conservation or Recreation

The statute addresses public ownership of natural areas for purposes of maintaining the state's unique natural resources; protecting air, land, and water quality; promoting water resource development to meet the needs of natural systems and citizens of this state; promoting restoration activities on public lands; and providing lands for natural resource based recreation. Lands are managed to protect or restore their natural resource values, and provide the greatest benefit, including public access, to the citizens of this state.

**Response:** This project will be coordinated with the State of Florida. It will be consistent with this chapter.

### Chapters 260, F.S., Florida Greenways and Trails Act

A statewide system of greenways and trails is established in order to conserve, develop, and use the natural resources of Florida for healthful and recreational purposes. These greenways and trails provide open space benefiting environmentally sensitive lands and wildlife and provide people with access to healthful outdoor activities. The greenways and trails serve to implement the concepts of ecosystem management while providing, where appropriate, recreational opportunities such as horseback riding, hiking, bicycling, canoeing, jogging, and historical and archaeological interpretation.

**Response:** The proposed project will be coordinated with the State of Florida. It will be consistent with this chapter.

### Chapter 267, F.S., Historical Resources

The management and preservation of the state's archaeological and historical resources are addressed by this statute. This statute recognizes the state's rich and unique heritage of historic resources and directs the state to locate, acquire, protect, preserve, operate and interpret historic and archeological resources for the benefit of current and future generations of Floridians. Objects or artifacts with intrinsic historic or archeological value located on, or abandoned on, state-owned lands or state-owned submerged lands belong to the citizens of the state. The state historic preservation program operates in conjunction with the National Historic Preservation Act of 1966 to require state and federal agencies to consider the effect of their direct or indirect actions on [significant] historic and archeological resources. These resources cannot be destroyed or altered unless no prudent alternative exists. Unavoidable impacts must be mitigated.

**Response:** This project has been coordinated with the State Historic Preservation Officer (SHPO). Historic Property investigations were conducted in the project area. An archival and literature search, in addition to a magnetometer survey of the proposed borrow sites, were conducted. The SHPO concurred with the Corps determination that the proposed project will not adversely affect any significant cultural or historic resources. The project will be consistent with the goals of this chapter.

### Chapter 288, F.S., Commercial Development and Capital Improvements

The framework to promote and develop general business, trade, and tourism components of the state economy are established in this statute. The statute includes requirements to protect and promote the natural, coastal, historical, and cultural tourism assets of the state; foster the development of nature-based tourism and recreation;

and upgrade the image of Florida as a quality destination. Natural resource-based tourism and recreational activities are critical sectors of Florida's economy. The needs of the environment must be balanced with the need for growth and economic development.

**Response:** The proposed beach nourishment would provide more space for recreation and the protection of recreational facilities along the receiving beach. This would be compatible with tourism in this area. Therefore, this project is consistent with the goals of this chapter.

### Chapter 334, F.S., Transportation Administration

The statute addresses the state's policy concerning transportation administration. It establishes the responsibilities of the state, the counties, and the municipalities in the planning and development of the transportation systems serving the people of the state and to assure the development of an integrated, balanced statewide transportation system. This is necessary for the protection of public safety and general welfare and for the preservation of all transportation facilities in the state.

**Response:** No public transportation systems would be impacted by this project.

### Chapter 339, F.S., Transportation Finance and Planning

The statute addresses the finance and planning needs of the state's transportation system.

**Response:** No public transportation systems would be impacted by this project.

### Chapter 373, F.S., Water Resources

The waters in the state of Florida are managed and protected to conserve and preserve water resources, water quality, and environmental quality. This statute addresses sustainable water management; the conservation of surface and ground waters for full beneficial use; the preservation of natural resources, fish, and wildlife; protecting public land; and promoting the health and general welfare of Floridians. The state manages and conserves water and related natural resources by determining whether activities will unreasonably consume water; degrade water quality; or adversely affect environmental values such as protected species habitat, recreational pursuits, and marine productivity.

Specifically, under Part IV of Chapter 373, the Department of Environmental Protection, water management districts, and delegated local governments review and take agency action on wetland resource, environmental resource, and stormwater permit applications, which address the construction, alteration, operation, maintenance, abandonment, and removal of any stormwater management system, dam, impoundment, reservoir, or appurtenant work or works, including dredging, filling and construction activities in, on, and over wetlands and other surface waters.

**Response:** The proposed beach nourishment will not adversely affect water quality, and does not affect the management of water resources used for consumption. The proposed project is consistent with the purposes of this chapter.

## Chapter 375, F.S., Outdoor Recreation and Conservation Lands

The statute addresses the development of a comprehensive multipurpose outdoor recreation plan. The purpose of the plan is to document recreational supply and demand, describe current recreational opportunities, estimate the need for additional recreational opportunities, and propose the means to meet the identified needs.

**Response:** The project will provide increased recreational beach for sunbathers and beachgoers. It is consistent with this chapter.

## Chapter 376, F.S., Pollutant Discharge Prevention and Removal

Regulating the transfer, storage, and transportation of pollutants, and the cleanup of pollutant discharges is essential for maintaining the coastal waters, estuaries, tidal flats, beaches, and public lands adjoining the seacoast in as close to a pristine condition as possible. The preservation of the seacoast as a source of public and private recreation and the preservation of water and certain lands are matters of the highest urgency and priority. This statute provides a framework for the protection of the state's coastline from spills, discharges, and releases of pollutants as a result of the transfer, storage, and transportation of such products. The discharge of pollutants into or upon any coastal waters, estuaries, tidal flats, beaches, and lands adjoining the seacoast of the state is prohibited. The statute provides for hazards and threats of danger and damages resulting from any pollutant discharge to be evaluated; requires the prompt containment and removal of pollution; provides penalties for violations; and ensures the prompt payment of reasonable damages from a discharge. Portions of Chapter 376, F.S., serve as a complement to the national contingency plan portions of the federal Water Pollution Control Act.

**Response:** The construction contract specifications will prohibit the contractor from dumping oil, fuel, or hazardous wastes in the work area and will require that the contractor to adopt safe and sanitary measures for the disposal of solid wastes. A spill prevention plan will be required.

## Chapter 377, F.S., Energy Resources

The statute addresses the regulation, planning, and development of the energy resources of the state. The statute provides policy to conserve and control the oil and gas resources in the state, including products made therefrom and to safeguard the health, property and welfare of Floridians. The Department of Environmental Protection (DEP) is authorized to regulate all phases of exploration, drilling, and production of oil, gas, and other petroleum products in the state. The statute describes the permitting requirements and criteria necessary to drill and develop for oil and gas. DEP rules ensure that all precautions are taken to prevent the spillage of oil or any other pollutant in all phases of extraction and transportation. The state explicitly prohibits pollution resulting from drilling and production activities. No person drilling for or producing oil, gas, or other petroleum products may pollute land or water; damage aquatic or marine life, wildlife, birds, or public or private property; or allow any extraneous matter to enter or damage any mineral or freshwater-bearing formation. Penalties for violations of any provisions of this chapter are detailed.

Not approved as enforceable policy: Sections 377.06, .24(9), and .242(1)(a)5. All deal with regulation of oil and gas resources.

**Response:** The contract specifications will prohibit the contractor from dumping oil, fuel, or hazardous wastes in the work area and will require that the contractor adopt safe and sanitary measures for the disposal of solid wastes. A spill prevention plan will be required.

### Chapter 379, F.S., Fish and Wildlife Conservation

The framework for the management and protection of the state of Florida's wide diversity of fish and wildlife resources are established in this statute. It is the policy of the state to conserve and wisely manage these resources. Particular attention is given to those species defined as being endangered or threatened. This includes the acquisition or management of lands important to the conservation of fish and wildlife. This statute contains specific provisions for the conservation and management of marine fisheries resources. These conservation and management measures permit reasonable means and quantities of annual harvest, consistent with maximum practicable sustainable stock abundance, as well as ensure the proper quality control of marine resources that enter commerce.

Additionally, this statute supports and promotes hunting, fishing and the taking of game opportunities in the State. Hunting, fishing, and the taking of game are considered an important part in the state's economy and in the conservation, preservation, and management of the state's natural areas and resources.

Not approved as enforceable policy: Sections 379.2551 and .362.

379.2511? [no 379.2551 shown] Lease of state-owned water bottoms for growing oysters and clams.

379.362 Wholesale and retail saltwater products dealers; regulation.

**Response:** The proposed beach fill may represent a temporary short-term impact to infaunal invertebrates by burying these organisms. However, these organisms are highly adapted to the periodic burial by sand in the intertidal zone. These organisms are highly fecund and are expected to return to pre-construction levels within six months to one year after construction. Nourishment activities are not located on a high nesting density beach, and it is not expected that sea turtles would be significantly impacted by this project. In addition, the project will have no effect on freshwater aquatic life or wild animal life. Based on the overall impacts of the project, the project is consistent with the goals of this chapter.

### Chapter 380, F.S., Land and Water Management

Land and water management policies are established to protect natural resources and the environment; and to guide and coordinate local decisions relating to growth and development. The statute provides that state land and water management policies, to the maximum possible extent, be implemented by local governments through existing processes for the guidance of growth and development and that all the existing rights of private property be preserved in accord with constitutions of this state and of the United States. The chapter establishes the Areas of Critical State Concern designation, the Florida Communities Trust as well as the Florida Coastal Management Act. The Florida Coastal Management Act provides the basis for the Florida Coastal Management Program which seeks to protect the natural, commercial, recreational, ecological, industrial, and aesthetic resources of Florida's coast.

Not approved as enforceable policy: Section 380.23(3)(d). [consistency review of] Federal activities within the territorial limits of neighboring states when the Governor and the department determine that significant individual or cumulative impact to the land or water resources of the state would result from the activities.

**Response:** The proposed work will be coordinated with the local regional planning commission. Therefore, the project will be consistent with the goals of this chapter.

### Chapter 381, F.S., Public Health: General Provisions

The statute establishes public policy concerning the state's public health system, which is designated to promote, protect, and improve the health of all people in the state.

Chapter 381 Public Health: General Provisions
Enforceable policy includes only Sections 381.001, .0011, .0012, .006, ,0061, .0065, .0066, and .0067.
381.001 Legislative intent; public health system.
381.0011 Duties and powers of the Department of Health.
381.0012 Enforcement authority.
381.006 Environmental health.
381.0061 Administrative fines.
381.0065 Onsite sewage treatment and disposal systems; regulation.
381.0066 Onsite sewage treatment and disposal systems; fees.
381.0067 Corrective orders; private and certain public water systems and onsite sewage treatment and disposal systems.

**Response:** This project will not affect public health systems.

### Chapter 388, F.S., Mosquito Control

Mosquito control efforts of the state are to achieve and maintain such levels of arthropod control as will protect human health and safety and foster the quality of life of the people, promote the economic development of the state, and facilitate the enjoyment of its natural attractions by reducing the number of pestiferous and disease-carrying arthropods. It is the policy of the state to conduct arthropod control in a manner consistent with protection of the environmental and ecological integrity of all lands and waters throughout the state.

**Response:** The proposed project will not cause an increase in the propagation of mosquitoes or other pest arthropods.

### Chapter 403, F.S., Environmental Control

Environmental control policies conserve state waters; protect and improve water quality for consumption and for the propagation of fish and wildlife; and maintain air quality to protect human health and plant and animal life. This statute provides wide-ranging authority to address various environmental control concerns, including air and water pollution; electrical power plant and transmission line siting; the Interstate Environmental Control Compact; resource recovery and management; solid and hazardous waste management; drinking water protection; pollution prevention; ecosystem management; and natural gas transmission pipeline siting.

Not approved as enforceable policy: Section 403.7125(2) and (3).

(2) The owner or operator of a landfill …shall establish a fee, or a surcharge on existing fees or other appropriate revenue-producing mechanism, to ensure the availability of financial resources for the proper closure of the landfill.

(3) An owner or operator of a landfill … may provide financial assurance to the department in lieu of the requirements of subsection (2).

**Response:** An Environmental Assessment that addresses project impacts has been prepared and will be reviewed by the appropriate resource agencies, including the Florida Department of Environmental Protection. Environmental protection measures will be implemented to ensure that no lasting adverse effects on water quality, air quality, or other environmental resources will occur. Water Quality Certification will be sought from the State prior to construction. The project complies with the intent of this chapter.

### Chapter 553, F.S., Building and Construction Standards

The statute addresses building construction standards and provides for a unified Florida Building Code.

Enforceable policy includes only Sections 553.73 and .79.

553.73 Florida Building Code.

553.79 Permits; applications; issuance; inspections.

**Response:** The proposed project does not involve the construction of any buildings; therefore, this chapter does not apply.

### Chapter 582, F.S., Soil and Water Conservation

It is the state's policy to preserve natural resources; control and prevent soil erosion, prevent floodwater and sediment damages and to further the conservation, development and use of soil and water resources, and the disposal of water. Farm, forest, and grazing lands are among the basic assets of the state; and the preservation of these lands is necessary to protect and promote the health, safety, and general welfare of its people. These measures help to preserve state and private lands, control floods, maintain water quality, prevent impairment of dams and reservoirs, assist in maintaining the navigability of rivers and harbors, preserve wildlife and protect wildlife habitat, protect the tax base, protect public lands, and protect and promote the health, safety, and general welfare of the people of this state.

**Response:** The proposed project is not located near or on agricultural lands; therefore, this chapter does not apply.

**Chapter 597, F.S., Aquaculture**

The statute establishes public policy concerning the cultivation of aquatic organisms in the state. The intent is to enhance the growth of aquaculture, while protecting Florida's environment. This includes a requirement for a state aquaculture plan which provides for the coordination and prioritization of state aquaculture efforts, the conservation and enhancement of aquatic resources and which provides mechanisms for increasing aquaculture production for the creation of new industries, job opportunities, income for aquaculturists, and other benefits to the state.

**Response:** The proposed project does not involve aquaculture or waters used for aquaculture; therefore, this chapter does not apply.

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