



# **Supplemental Environmental Assessment**

**South Siesta Key (Turtle Beach) Beach Renourishment Project**

**FEMA-DR-4280-FL**

**Sarasota County, Florida**

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**FEMA**

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Region IV – Atlanta, GA

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## ACRONYMS AND ABBREVIATIONS

APE	area of potential effect
CEQ	Council on Environmental Quality
CFR	<i>Code of Federal Regulations</i>
EA	Environmental Assessment
EO	Executive Order
FCMP	Florida Coastal Management Program
FDEP	Florida Department of Environmental Protection
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FMSF	Florida Master Site File
FONSI	Finding of No Significant Impact
IPaC	Information for Planning and Consultation
JCP	Joint Coastal Permit
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NRHP	National Register of Historic Places
PA	Public Assistance
PBO	Programmatic Biological Opinion
PL	Public Law
SEA	Supplemental Environmental Assessment
SHPO	State Historic Preservation Office
Stafford Act	Robert T. Stafford Disaster Relief and Emergency Assistance Act
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service

## 1.0 INTRODUCTION

Hurricane Hermine impacted Florida between August 31, 2016 and September 11, 2016, bringing storm surge and strong wave action. President Obama signed a disaster declaration (FEMA-4280-DR-FL) on September 28, 2016, authorizing the Department of Homeland Security's Federal Emergency Management Agency (FEMA) to provide federal assistance to the designated areas of Florida. This assistance is provided pursuant to the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), and Public Law (PL) 93-288, as amended. Section 406 of the Stafford Act authorizes FEMA's Public Assistance (PA) Program to repair, restore, and replace state and local government and certain private nonprofit facilities damaged as a result of the event.

Sarasota County, Florida was designated in Hurricane Hermine to receive federal assistance. Sarasota County has applied through the PA Program to receive funding to restore the eroded shoreline along Turtle Beach on southern Siesta Key. The area of consideration is located between Florida R-67 – 345' and R-77 + 489' (GPS Coordinates: 27.235766, -82.527258 to 27.209918, -82.512842) and was last renourished in 2016 using 713,563 cubic yards (CY) of offshore material. The shoreline is an engineered and maintained beach previously authorized for nourishment and maintenance by the U.S. Army Corps of Engineers (USACE).

The USACE prepared an *Environmental Assessment South Siesta Key Beach Restoration Project (Turtle Beach)* in October 2015 and issued a Finding of No Significant Impact (FONSI) on their proposed action. Any federal agency may adopt another federal or state agency's EA (40 CFR §1500.4(n), §1500.5(h), and §1506.3) providing the original document satisfies the agency's National Environmental Policy Act (NEPA) requirements. FEMA has adopted USACE's EA and has also provided supplemental information. USACE's EA and FONSI are included as Appendix B of this document.

Recent changes to the President's Council on Environmental Quality (CEQ) regulations implementing the NEPA (40 Code of Federal Regulations [C.F.R.] §§ 1500–1508) became effective on September 14, 2020. 85 Fed. R. 43304-76 (July 16, 2020). As stated in 40 C.F.R. § 1506.13, the new regulations apply to any NEPA process begun after September 14, 2020. This Supplemental Environmental Assessment (SEA) substantively commenced prior to that date; therefore, this SEA conforms to the CEQ NEPA implementing regulations that were in place prior to September 14, 2020, and regulations adopted pursuant to Department of Homeland Security Directive 023-01, Rev 01, and FEMA Directive 108-1.

## 2.0 PURPOSE AND NEED

The purpose of this project is to address beach erosion along the existing coastline at Turtle Beach in Sarasota County, as a result of Hurricane Hermine. The need for this project is to improve the capacity of the shoreline to withstand future storm events and protect adjacent infrastructure. Additionally, addressing this erosion issue may create a benefit to the area by providing additional habitat for sea turtles and shorebirds, and enhancing the recreational value of the beach.

## 3.0 ALTERNATIVES

Three alternatives are considered in addressing the purpose and need of the South Siesta Key beach renourishment project. Alternative 1 is the No Action Alternative, Alternative 2 would repair the beach to pre-disaster condition (preferred alternative), and Alternative 3 would repair the beach to pre-disaster condition plus possible background erosion. Reasonable alternatives are those that meet

the underlying purpose of, and need for, the Proposed Action; are feasible from both technical and economic standpoints; and meet reasonable screening criteria (selection standards) that are suitable to a particular action. An alternative that was determined to not meet the purpose and need was eliminated from detailed analysis in this SEA and is discussed below.

### **3.1 Alternative 1 – No Action Alternative**

Under the No Action Alternative, the shoreline would remain in its current state and sand would not be placed on the beach. Consequently, the area would not be protected from future storm events. Ongoing erosion would continue along the shoreline. Benefits to listed species and recreational value would not occur.

### **3.2 Alternative 2 - Repair the Beach to Pre-Disaster Condition (Preferred Alternative)**

Alternative 2 would restore only the amount of sand lost from Hurricane Hermine and any future federally declared disasters, if applicable, as a stand-alone project rather than combined in the next scheduled renourishment. The project has three preferred upland mines including: (1) E.R. Jahna Industries, (2) Garcia Companies, and (3) Stewart Materials. Sand will be obtained from a properly licensed, permitted, and qualified supplier of the material but may require additional environmental review. Sarasota County has submitted applications to FEMA for funding under the PA program to repair damages as a result of FEMA-4280-DR-FL. Approximately 92,505 CY of lost sand attributable to Hurricane Hermine, only, would be placed on South Siesta Key and Turtle Beach between Florida R-67 – 345' and R-77 + 489' (GPS Coordinates: 27.235766, -82.527258 to 27.209918, -82.512842). Additionally, approximately 6,450 dune plants would be replaced. Sand loss in future Presidentially-declared disasters may be included in this Alternative. This Alternative would most immediately increase the level of storm protection to the existing shore, upland habitat, and infrastructure. This Alternative would likely require future renourishments for background sand loss replacement to fill the engineered template.

### **3.3 Alternative 3 - Repair the Beach to Pre-Disaster Condition Plus Possible Background Erosion**

Alternative 3 would restore the amount of sand lost from Hurricane Hermine and any future declared disasters if applicable, plus sand lost from background erosion up to the full engineered template. The sand for this Alternative would be sourced from the same upland mines considered in Alternative 2. The three preferred mines under consideration are: (1) E.R. Jahna Industries, (2) Garcia Companies, and (3) Stewart Materials. Sarasota County has submitted applications to FEMA for funding under the PA program to repair damages as a result of FEMA-4280-DR-FL. Approximately 92,505 CY of lost sand attributable to Hurricane Hermine would be placed on South Siesta Key between Florida R-67 – 345' and R-77 + 489' (GPS Coordinates: 27.235766, -82.527258 to 27.209918, -82.512842). Additionally, approximately 6,450 dune plants would be replaced. Under this Alternative, additional sand and plants needed due to background erosion would be replaced at the same time as the disaster related sand. This Alternative would minimize the need for future renourishments since it would replace sand up to the full engineered template.

### **3.4 Alternative Eliminated from Detailed Analysis**

During early planning, Sarasota County considered other potential alternatives to restore the beach. Discussions included waiting to replace the sand lost from Hurricane Hermine until the next scheduled

comprehensive renourishment project in 2026. This Alternative was removed from consideration as it would not meet the purpose and need of the project, which is to improve the capacity of the shoreline to withstand future storm events and protect adjacent infrastructure within the timelines allowable under the funding grant program. The scope of this alternative is described below.

The comprehensive beach renourishment project would proceed along 2 miles of southern Siesta Key using sand sourced from offshore dredged material. The project would not occur until the next scheduled full-scale renourishment in 2026, at which time it would increase the level of storm protection to the existing shore, upland habitat, and infrastructure. This comprehensive renourishment would result in restoration of approximately 92,505 CY of lost sand attributable to Hurricane Hermine, possible future storms, and all background erosion, to return the beach to its full engineered and designed template. The project is located between Florida R-67 – 345’ and R-77 + 489’ (GPS Coordinates: 27.235766, -82.527258 to 27.209918, -82.512842).

As mentioned, this method of renourishment would not occur until 2026 and would not meet the immediate need to restore sand on the eroded shoreline; therefore, this Alternative was removed from further analysis.

## **4.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES**

Siesta Key is a barrier island located on the west coast of Florida and is part of Sarasota County Florida. The island spans approximately 7 miles, of which, about 5.5 miles is comprised of sandy beach fronting the Gulf of Mexico. All of the sandy beach is suitable habitat for endangered species such as sea turtles, piping plover, and red knot. The island is bordered to the north by Big Sarasota Pass and on the south end it is connected to Casey Key where Midnight Pass previously existed. The eastern (inland) side of the island is comprised of seagrass and mangrove habitat, although the island is well developed with residential and commercial infrastructure. The total population of Siesta Key is roughly 6,565 and is made up of both year-round and seasonal residents. Turtle Beach is located on the southern portion of the island. The economy of Siesta Key is largely tourism-driven. The island hosts beach resorts, vacation rentals, condominiums, private homes, and parks that facilitate recreational use of the shoreline.

This section addresses the Affected Environment (existing conditions) and Environmental Consequences (potential impacts) of the Proposed Action. The following terms are used to describe the magnitude of impacts in this EA:

- **No Effect:** The action would not cause a detectable change.
- **Negligible:** The impact would be at the lowest level of detection; the impact would not be significant.
- **Minor:** The impact would be slight but detectable; the impact would not be significant.
- **Moderate:** The impact would be readily apparent; the impact would not be significant.
- **Major:** The impact would be clearly adverse or positive; the impact has the potential to be significant. The significance of adverse and positive impacts is subject to interpretation and should be determined based on the final proposal. In cases of adverse impacts, the impact may be reduced to less than significant by mitigations, design features, and other measures that may be taken.

## 4.1 Potential Environmental Consequences

Table 4.1. The potential environmental consequences and required measures and permits required as a result of Alternative 1 and 2 are summarized.

Resource	Environmental Consequences	Environmental Protection Measures and Required Permits
<p><b>Floodplains</b> See Section 4.2 for details</p>	<p>Alternative 1 – No impact. Risk to human life and improved property continues at current level</p> <p>Alternative 2 – Minor beneficial impact as the disaster related sand replacement would reduce flood risk to adjacent communities and preserve the floodplain for open space and recreational use.</p> <p>Alternative 3- Beneficial impact as the full renourishment would reduce flood risk to adjacent communities and preserve the floodplain for open space and recreational use.</p>	<p>Not applicable</p>
<p><b>Coastal Zone Management</b> See Section 4.3 for details</p>	<p>Alternative 1 – No impact</p> <p>Alternative 2 &amp; 3 – Minor beneficial impact due to restoration of the sandy beach along the shoreline</p>	<p>Alternatives 2 &amp; 3 would require an FDEP Joint Coastal Permit (JCP), which would constitute consistency review under the state’s coastal zone management program. On December 18, 2014 Sarasota County obtained FDEP JCP #0240984-004-JC which is valid until December 18, 2029. Sarasota County is required to obtain any permit modifications as needed.</p>
<p><b>Wetlands (Executive Order 11990)</b> See Section 4.4 for details</p>	<p>Alternative 1 – No impact</p> <p>Alternative 2 &amp; 3 – Short term minor impacts from</p>	<p>Alternatives 2 &amp; 3 would require an FDEP JCP and an Individual Permit from the USACE. All conditions must be followed in each respective permit.</p>

Resource	Environmental Consequences	Environmental Protection Measures and Required Permits
	construction. No long-term impacts.	
<p><b>Environmental Justice (Executive Order 12898)</b></p> <p>See Section 4.5 for details</p>	<p>Alternatives 1, 2, and 3 – No impact</p>	<p>Not applicable</p>
<p><b>Threatened and Endangered Species</b></p>	<p>No Change – see USACE EA Sections 3.4 and 4.5.</p> <p>Alternative 1 – No impact, loss of suitable habitat for listed species</p> <p>Alternatives 2 &amp; 3 - Beneficial effects due to increased habitat for sea turtles and shorebirds. Potential for incidental take during construction minimized by application of measures set forth in U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) Programmatic Biological Opinions (PBOs) with the USACE.</p>	<p>Under Alternatives 2 &amp; 3, the following measures would be implemented from the applicable PBOs:</p> <ol style="list-style-type: none"> <li>1. The applicant will comply with the following conditions from the USFWS Statewide Programmatic Biological Opinion for Sand Placement # 41910-2011-F-0170 issued to the U.S. Army Corps of Engineers on March 13, 2015. Since FEMA became involved after the PBO was issued to the Corps, where the following conditions refer to the Corps, it can be assumed that they also apply to FEMA:             <ol style="list-style-type: none"> <li>a) Beach-compatible fill shall be placed on the beach or in any associated dune system. Beach compatible fill must be sand that is similar to a native beach in the vicinity of the site that has not been affected by prior sand placement activity. The fill material must be similar in both coloration and grain size distribution to that native beach. Beach compatible fill is material that maintains the general character and functionality of the material occurring on the beach and in the adjacent dune and coastal system. Fill material shall comply with FDEP requirements pursuant to the Florida Administrative Code (FAC) subsection 62B-41.005(15). If a variance is requested from FDEP, the Service must be contacted to discuss whether the project falls outside of the SPBO. A Quality Control Plan shall be implemented pursuant to FAC Rule 62B-41.008(1)(k)4.b.</li> <li>b) Sand placement shall not occur during the period of peak sea turtle egg laying and egg hatching to reduce the possibility of</li> </ol> </li> </ol>

Resource	Environmental Consequences	Environmental Protection Measures and Required Permits
		<p>sea turtle nest burial, crushing of eggs, or nest excavation.</p> <ul style="list-style-type: none"> <li>i. Sand placement projects in Sarasota County may occur during the sea turtle nesting season except on publicly owned conservation lands such as state parks and areas where such work is prohibited by the managing agency or under applicable local land use codes.</li> <li>c) All derelict concrete, metal, and coastal armoring geotextile material and other debris shall be removed from the beach to the maximum extent possible prior to any sand placement in accordance with the dates in b. If debris removal activities take place during shorebird breeding or peak sea turtle nesting season, the work shall be conducted during daylight hours only and shall not commence until completion of daily seabird, shorebird or marine turtle surveys each day.</li> <li>d) The beach profile template for the sand placement project shall be designed to mimic, the native beach berm elevation and beach slopes landward and seaward of the equilibrated berm crest. Prior to drafting the plans and specifications for a beach nourishment project, the Corps must meet with the Service, Florida Fish and Wildlife Conservation Commission (FWC), and FDEP to discuss the beach profile surveys, dune formation (specifically on high density green turtle nesting beaches), and the sea turtle monitoring reports from previous placement events. The meeting will be used to discuss modifications to the beach profile based on the post-construction monitoring data.</li> </ul> <p>Beach profile may vary depending on location, shoreline dynamics, nature of the fill material, and other factors. If a native</p>

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		<p>beach berm elevation is not possible, due to the beach width, impacts to nearshore hardbottom, or other considerations, as discussed during the meeting, the alternative template shall include features to minimize impacts to sea turtle nesting success and the potential for ponding and escarpment formation for that beach. For all high-density green turtle nesting beaches, the formation of a dune, either through direct creation or natural accretion, will be included in the project design. Dunes and other construction features must be within the scope of the Congressionally-authorized project, if it is a civil works project, and constructible without impacting other resources. If a recommended dune is not possible, the Corps will contact the Service to see if consultation needs to be reinitiated or discuss features incorporated with the profile that will enhance the existing dune. Dune features included in the profile design (or project) shall have a slope of 1.5:1 followed by a gradual slope of 4:1 for approximately 20 feet seaward on a high erosion beach (SPBO Figure 13) or a 4:1 slope (SPBO Figure 14) on a low erosion beach. The Corps must explore options to include a dune system in the project design for existing authorized projects and new non-Federal projects. If another slope is proposed for use, the Corps shall consult the Service. The seaward toe of the dune should be at least 20 feet from the waterline.</p> <p>e) Predator-proof trash receptacles shall be installed and maintained during construction at all beach access points used for the project construction to minimize the potential for attracting predators of sea turtles and beach mice (SPBO Appendix F). The Corps shall provide predator-proof trash receptacles for the construction workers. The Corps shall brief workers on the importance of</p>

Resource	Environmental Consequences	Environmental Protection Measures and Required Permits
		<p>not littering and keeping the project area trash and debris free.</p> <p>f) A meeting between representatives of the Corps (including the Corps project manager or the managing contractor), the Service, the FWC, the FWC Marine Turtle Permit Holder, and other species surveyors, as appropriate, shall be held prior to the commencement of work on projects. At least 10 business days advance notice shall be provided prior to conducting this meeting. The meeting will provide an opportunity for explanation or clarification of the sea turtle and beach mouse protection measures as well as additional guidelines when construction occurs during the sea turtle nesting season, and will include the following</p> <ul style="list-style-type: none"> <li>i. Staging locations, storing equipment including fuel stations</li> <li>ii. Coordination with the Marine Turtle Permit Holder on nesting surveys and any nighttime work</li> <li>iii. Pipeline placement (between 5 to 10 feet from dune)</li> <li>iv. Minimizing driving</li> <li>v. Egg relocation- permit holder and location (must be approved by FWC)</li> <li>vi. Free-roaming cat observation (for projects in or near beach mouse habitat)</li> <li>vii. Follow up lighting surveys - dates and inspector</li> <li>viii. Follow up coordination during construction and post construction</li> <li>ix. Coordination on construction lighting including dredge lighting and travel within and adjacent to the work area</li> <li>x. Direction of the project including progression of sand placement along the beach</li> </ul>

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		<p>xi. Late season nests present in project area (if any)</p> <p>xii. Plans for compaction monitoring or tilling</p> <p>xiii. Plans for escarpment surveys</p> <p>At the preconstruction meeting, the Corps shall also provide the Service with specific anticipated shoreline lengths and anticipated duration using the form on the following web link:  <a href="http://www.fws.gov/northflorida/SeaTurtles/Docs/Corp%20of%20Engineers%20Sea%20Turtle%20Permit%20Information.pdf">http://www.fws.gov/northflorida/SeaTurtles/Docs/Corp%20of%20Engineers%20Sea%20Turtle%20Permit%20Information.pdf</a>. Only the following information should be filled out: Corps Permit Number, FWS Log Number, Project Location, Construction Activity, Duration of Protect, and Actual Take (linear feet of beach). This form shall be emailed to the Service at <a href="mailto:seaturtle@fws.gov">seaturtle@fws.gov</a>. This form is in addition to the annual report listed below.</p> <p>g) Daily early morning surveys for sea turtle nests shall be required and continue throughout the season as outlined in SPBO Tables 16 and 17 (Nesting Season Monitoring) if construction occurs during the nesting and hatching season. Any known nests recorded just prior to the beginning of Nesting Season Monitoring must be relocated if it will be impacted by the construction activity or marked and avoided if feasible.</p> <p>h) If nests are constructed in the area of anticipated sand placement, the eggs shall be relocated to minimize sea turtle nest burial, crushing of eggs, or nest excavation as outlined in below. If nests are laid on the dune outside of the immediate sand placement area, the Corps</p>

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		<p>must contact the Service to discuss whether relocation or mark and avoidance is required. Any known nests recorded just prior to the beginning of Nesting Season Monitoring must be relocated if it will be impacted by the construction activity or marked and avoided if feasible.</p> <ol style="list-style-type: none"> <li data-bbox="873 512 1377 905">i. For sand placement projects in Sarasota County that occur during the period of sea turtle nest laying (see SPBO Table 17), daily early morning (before 9 a.m.) surveys and egg relocation shall be conducted. If nests are laid in areas where they may be affected by construction activities, eggs shall be relocated per the requirements listed below.</li> <li data-bbox="873 915 1386 1528">ii. Additionally, for Sarasota County, nesting surveys shall be initiated 65 days prior to nourishment or dredged channel material placement activities or by the beginning of the nesting season monitoring indicated in SPBO Table 17 whichever is later. Nesting surveys shall continue through the end of nesting season monitoring, with egg relocation continuing only through the end of fill placement. If nests are laid in areas where they may be affected by construction activities, eggs shall be relocated per the requirements listed below: <ul style="list-style-type: none"> <li data-bbox="889 1539 1365 1929">• Nesting surveys and egg relocations will only be conducted by persons with prior experience and training in these activities and who are duly authorized to conduct such activities through a valid permit issued by FWC, pursuant to FAC 68E-1. Please contact FWC's Imperiled Species Management Section in Tequesta at</li> </ul> </li> </ol>

Resource	Environmental Consequences	Environmental Protection Measures and Required Permits
		<p>mtp@myfwc.com for information on the permit holder in the project area. Relocation cannot begin until the Corps has a copy of the FWC permit authorizing relocation for construction purposes at that particular sand placement project. Nesting surveys shall be conducted daily between sunrise and 9 a.m. (this is for all time zones).</p> <ul style="list-style-type: none"> <li>• Only those nests that may be affected by sand placement activities will be relocated. Nest relocation shall not occur upon completion of the project. Nests requiring relocation shall be moved no later than 9 a.m. the morning following deposition to a nearby self-release beach site in a secure setting where artificial lighting will not interfere with hatchling orientation. Relocated nests shall not be placed in organized groupings. Relocated nests shall be randomly staggered along the length and width of the beach in settings that are not expected to experience daily inundation by high tides or known to routinely experience severe erosion and egg loss, predation, or be subject to artificial lighting. Nest relocations in association with construction activities shall cease when construction activities no longer threaten nests.</li> <li>• Nests deposited within areas where construction activities have ceased or will not occur for 65 days or nests laid in the nourished berm prior to tilling shall be marked and left in situ unless other factors threaten the success of the nest. The turtle permit holder shall install an on-beach</li> </ul>

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		<p>marker at the nest site and a secondary marker at a point as far landward as possible to assure that future location of the nest will be possible should the on-beach marker be lost. No activity will occur within this area nor will any activities occur that could result in impacts to the nest. Nest sites shall be inspected daily to assure nest markers remain in place and the nest has not been disturbed by the project activity.</p> <p>i) Two surveys shall be conducted of all lighting visible from the beach placement area by the Applicant or Corps, using standard techniques for such a survey (SPBO Appendix C), in the year following construction. The first survey shall be conducted between May 1 and May 15 and a fill out FWS Sea Turtle Lighting Survey Form (SPBO Appendix D) and send electronically to <a href="mailto:seaturtle@fws.gov">seaturtle@fws.gov</a>. The second survey shall be conducted between July 15 and August 1. A summary report of the surveys, including any actions taken, shall be submitted to the Service by December 31 of the year in which surveys are conducted.</p> <p>After the annual report is completed, a meeting shall be set up with the Applicant, county or municipality, FWC, Corps, and the Service to discuss the survey report, as well as any documented sea turtle disorientations in or adjacent to the project area. If the project is completed during the nesting season and prior to May 1, the Corps may conduct the lighting surveys during the year of construction.</p> <p>j) Daily nesting surveys shall be conducted for two nesting seasons following construction in accordance with SPBO</p>

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		<p>Table 18 and reported in accordance with SPBO Table 20 by the Corps or the Applicant if placed material still remains on the beach. Post construction year-one surveys shall record the number of nests, nesting success, reproductive success, disorientations, and lost nests due to erosion or inundation. Post construction year- two surveys shall only need to record nest numbers, nesting success, and disorientations (SPBO Table 20). This information will be used to periodically assess the cumulative effects of these projects on sea turtle nesting and hatchling production and monitor suitability of post construction beaches for nesting.</p> <p>k) Sand compaction shall be monitored in the area of sand placement immediately after completion of the project and prior to the dates in SPBO Table 19 for 3 subsequent years.</p> <p>If tilling is needed, the area shall be tilled to a depth of 36 inches. Each pass of the tilling equipment shall be overlapped to allow more thorough and even tilling. All tilling activity shall be completed at least once prior to the nesting season. An electronic copy of the results of the compaction monitoring shall be submitted electronically to <a href="mailto:seaturtle@fws.gov">seaturtle@fws.gov</a> prior to any tilling actions being taken or if a request not to till is made based on compaction results. The requirement for compaction monitoring can be eliminated if the decision is made to till regardless of post construction compaction levels. Additionally, out-year compaction monitoring and remediation are not required if placed material no longer remains on the dry beach.</p> <p>(NOTE: If tilling occurs during shorebird nesting season (February 15-August 31), shorebirds surveys prior to tilling are required per the Migratory Bird Treaty Act. See Appendix E for shorebird conditions recommended by FWC.</p> <p>i. Compaction sampling stations shall be located at 500-foot intervals</p>

Resource	Environmental Consequences	Environmental Protection Measures and Required Permits
		<p>along the sand placement template. One station shall be at the seaward edge of the dune/bulkhead line (when material is placed in this area), and one station shall be midway between the dune line and the high water line (normal wrack line).</p> <p>ii. At each station, the cone penetrometer shall be pushed to a depth of 6, 12, and 18 inches three times (three replicates at each depth). Material may be removed from the hole if necessary to ensure accurate readings of successive levels of sediment. The penetrometer may need to be reset between pushes, especially if sediment layering exists. Layers of highly compact material may lie over less compact layers. Replicates shall be located as close to each other as possible, without interacting with the previous hole or disturbed sediments. The three replicate compaction values for each depth shall be averaged to produce final values for each depth at each station. Reports will include all 18 values for each transect line, and the final six averaged compaction values.</p> <p>iii. If the average value for any depth exceeds 500 pounds per square inch (psi) for any two or more adjacent stations, then that area shall be tilled immediately prior to the appropriate date listed in SPBO Table 19.</p> <p>iv. If values exceeding 500 psi are distributed throughout the project area but in no case do those values exist at two adjacent stations at the same depth, then consultation with the Service will be required to determine if tilling is required. If a few values exceeding 500 psi are present</p>

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		<p>randomly within the project area, tilling will not be required.</p> <p>v. Tilling shall occur landward of the wrack line and avoid all vegetated areas 3 square feet or greater with a 3 square foot buffer around the vegetated areas.</p> <p>1) Visual weekly surveys for escarpments along the project area shall be made immediately after completion of the sand placement and within 30 days prior to the start dates for Nesting Season Monitoring in SPBO Table 19 for 3 subsequent years if sand in the project area still remains on the dry beach.</p> <p>Escarpments that interfere with sea turtle nesting or that exceed 18 inches in height for a distance of 100 feet shall be leveled and the beach profile shall be reconfigured to minimize scarp formation by the dates listed in SPBO Table 19. Any escarpment removal shall be reported by location in the annual report. If the project is completed during the early part of the sea turtle nesting and hatching season (March 1 through April 30), escarpments may be required to be leveled immediately, while protecting nests that have been relocated or left in place. If during weekly escarpment surveys, it is found that subsequent reformation of escarpments interferes with sea turtle nesting or that they exceed 18 inches in height for a distance of 100 feet during the nesting and hatching season, the Service shall be contacted immediately to determine the appropriate action to be taken. If it is determined by the Service or FWC that that escarpment leveling is required during the nesting or hatching season the Service, in coordination with the FWC, will provide a brief written authorization within 5 days that describes methods to be used to reduce the likelihood of impacting existing nests. An annual summary of escarpment surveys and actions taken shall be sent electronically to <a href="mailto:seaturtle@fws.gov">seaturtle@fws.gov</a>. A</p>

Resource	Environmental Consequences	Environmental Protection Measures and Required Permits
		<p>summary is required even when no action has been taken (SPBO Table 3).</p> <p>m) Staging areas for construction equipment shall be located off the beach during early (before April 30) and late (after November 1) nesting season for Brevard through Broward counties (see table 14) and peak nesting season (May 1 through October 31) for the remaining counties. Nighttime storage of construction equipment not in use shall be off the beach to minimize disturbance to sea turtle nesting and hatching activities. In addition, all construction pipes placed on the beach shall be located as far landward as possible without compromising the integrity of the dune system. Pipes placed parallel to the dune shall be 5 to 10 feet away from the toe of the dune if the width of the beach allows. Temporary storage of pipes shall be off the beach to the maximum extent possible. If the pipes are stored on the beach, they shall be placed in a manner that will minimize the impact to nesting habitat and shall not compromise the integrity of the dune systems. If the pipes placed parallel to the dune cannot be placed between 5 to 10 feet away from the toe of the dune during nesting and hatching season, the Corps must reinitiate consultation with the Service as this represents adverse effects not addressed in this SPBO. If it will be necessary to extend construction pipes past a known shorebird nesting site or over-wintering area for piping plovers, then whenever possible those pipes shall be placed landward of the site before birds are active in that area. No pipe or sand shall be placed seaward of a shorebird nesting site during the shorebird nesting season.</p> <p>n) Direct lighting of the beach and nearshore waters shall be limited to the immediate construction area during early (before</p>

Resource	Environmental Consequences	Environmental Protection Measures and Required Permits
		<p>April 30) and late (after November 1) nesting season for Brevard through Broward counties (see Table 14) and peak nesting season (May 1 through October 31) for the remaining counties, and shall comply with safety requirements. A light management plan for the dredge and the work site shall be submitted for approval by the Service and FWC prior to the pre-construction meeting. In accordance with this plan, lighting on all equipment shall be minimized through reduction, shielding, lowering, and appropriate placement to avoid excessive illumination of the water's surface and nesting beach while meeting all Coast Guard, Corps EM 385-1- 1, and Occupational Safety and Health Administration (OSHA) requirements. Light intensity of lighting equipment shall be reduced to the minimum standard required by OSHA for General Construction areas, in order not to misdirect sea turtles. Shields shall be affixed to the light housing on dredge and land- based lights and be large enough to block light from all lamps from being transmitted outside the construction area or to the adjacent sea turtle nesting beach in line-of-sight of the dredge (SPBO Figure 15).</p> <p>o) During the early (before April 30) and late (after November 1) nesting season for Brevard through Broward counties (see Table 14) and peak nesting season (May 1 through October 31) for the remaining counties, the Corps shall not extend the beach fill more than 500 feet (or other agreed upon length) along the shoreline between dusk and dawn of the following day until the daily nesting survey has been completed and the beach cleared for fill advancement. An exception to this may occur if there is a permitted sea turtle surveyor present on-site to ensure no nesting and hatching sea turtles are present within the extended work area. If</p>

Resource	Environmental Consequences	Environmental Protection Measures and Required Permits
		<p>the 500 feet is not feasible for the project, an agreed upon distance will be decided on during the preconstruction meeting. Once the beach has been cleared and the necessary nest relocations have been completed, the Corps will be allowed to proceed with the placement of fill during daylight hours until dusk at which time the 500-foot length (or other agreed upon length) limitation shall apply. If any nesting turtles are sighted on the beach within the immediate construction area, activities shall cease immediately until the turtle has returned to the water and the sea turtle permit holder responsible for nest monitoring has relocated the nest.</p> <p>p) All vegetation planting shall be designed and conducted to minimize impacts to sea turtles and beach mice. Dune vegetation planting may occur during the sea turtle nesting season under the following conditions.</p> <p>i. Daily early morning sea turtle nesting surveys (before 9 a.m.) shall be conducted during the Nest Laying period for all counties in Florida where sea turtle nesting occurs (see Tables 16 and 17). Nesting surveys shall only be conducted by personnel with prior experience and training in nesting surveys. Surveyors shall have a valid FWC permit. Nesting surveys shall be conducted daily between sunrise and 9 a.m. (all times). No dune planting activity shall occur until after the daily turtle survey and nest conservation and protection efforts have been completed. Hatching and emerging success monitoring will involve checking nests beyond the completion date of the daily early morning nesting surveys;</p>

Resource	Environmental Consequences	Environmental Protection Measures and Required Permits
		<ul style="list-style-type: none"> <li data-bbox="867 260 1377 1129">ii. Any nests deposited in the dune planting area not requiring relocation for conservation purposes shall be left in place. The turtle permit holder shall install an on-beach marker at the nest site and a secondary marker at a point as far landward as possible to assure that future location of the nest will be possible should the on- beach marker be lost. A series of stakes and highly visible survey ribbon or string shall be installed to establish a 3-foot radius around the nest. No planting or other activity shall occur within this area nor will any activities be allowed that could result in impacts to the nest. Nest sites shall be inspected daily to assure nest markers remain in place and the nest has not been disturbed by the planting activity;</li> <li data-bbox="867 1136 1377 1528">iii. If a nest is disturbed or uncovered during planting activity, the Corps, or the Applicant shall cease all work and immediately contact the project turtle permit holder. If a nest(s) cannot be safely avoided during planting, all activity within 10 feet of a nest shall be delayed until hatching and emerging success monitoring of the nest is completed;</li> <li data-bbox="867 1535 1377 1640">iv. All dune planting activities shall be conducted by hand and only during daylight hours;</li> <li data-bbox="867 1646 1377 1925">v. All dune vegetation shall consist of coastal dune species native to the local area; (i.e., native to coastal dunes in the respective county and grown from plant stock from that region of Florida). Vegetation shall be planted with an appropriate amount of fertilizer</li> </ul>

Resource	Environmental Consequences	Environmental Protection Measures and Required Permits
		<p>and antidesiccant material for the plant size;</p> <ul style="list-style-type: none"> <li>vi. No use of heavy equipment shall occur on the dunes or seaward for planting purposes. A lightweight (all-terrain type) vehicle, with tire pressures of 10 psi or less may be used for this purpose; and</li> <li>vii. Irrigation equipment, if needed, shall be authorized under a FDEP permit.</li> </ul> <p>q) A report with the information specified in SPBO Tables 20 and 21 shall be submitted to the Service electronically (seaturtle@fws.gov) by December 31 after completion of construction.</p> <p>r) In the event a sea turtle nest is excavated during construction activities, the project turtle permit holder responsible for egg relocation for the project shall be notified immediately so the eggs can be moved to a suitable relocation site. Upon locating a dead or injured sea turtle adult, hatchling, egg, or beach mouse that may have been harmed or destroyed as a direct or indirect result of the project, the Corps, Applicant shall be responsible for notifying FWC Wildlife Alert at 1-888-404-FWCC (3922) and the appropriate Service Field Office immediately (Table 3). Care shall be taken in handling injured sea turtles, eggs or beach mice to ensure effective treatment or disposition, and in handling dead specimens to preserve biological materials in the best possible state for later analysis.</p> <p>s) Manatees</p> <ul style="list-style-type: none"> <li>i. Shall follow the 2011 Standard Manatee In-water Construction Conditions</li> <li>ii. Barges shall install mooring bumpers that provide a minimum 4-foot standoff distance under maximum compression between other moored barges and large vessels, when in the vicinity of inlets, river mouths, and</li> </ul>

Resource	Environmental Consequences	Environmental Protection Measures and Required Permits
		<p>large estuaries where manatees are known to congregate.</p> <ul style="list-style-type: none"> <li>iii. Pipelines shall be positioned such that they do not restrict manatee movement to the maximum extent possible. Plastic pipelines shall be weighted or floated. Pipelines transporting dredged material within the vicinity of inlets, river mouths, and large estuaries where manatees are known to congregate shall be weighted or secured to the bottom substrate as necessary to prevent movement of the pipeline and to prevent manatee entrapment or crushing.</li> <li>iv. In the event that such positioning has the potential to impact submerged aquatic vegetation (SAV) or nearshore hardbottom, the pipeline may be elevated or secured to the bottom substrate to minimize impacts to SAV.</li> </ul> <p>t) Migratory Birds: Applicant shall follow the latest Florida Fish and Wildlife Conservation Commission (FWC) standard guidelines to protect against impacts to nesting shorebirds during implementation of this project during periods from February 15 to August 31.</p> <p>2. The applicant will comply with the following additional conditions from the USFWS Programmatic Piping Plover Biological Opinion #04EF1000-2013-F-0124 dated May 22, 2013:</p> <ul style="list-style-type: none"> <li>a) The Corps or the Permittee must provide the following information to the Service Field Supervisor of the appropriate Field Office at least 10 business days prior to the commencement of work: <ul style="list-style-type: none"> <li>i. Project location (include FDEP Range Monuments and latitude and longitude coordinates);</li> <li>ii. Project description (include linear feet</li> </ul> </li> </ul>

Resource	Environmental Consequences	Environmental Protection Measures and Required Permits
		<p>of beach, actual fill template, access points, and borrow areas);</p> <ul style="list-style-type: none"> <li>iii. Date of commencement and anticipated duration of construction; and</li> <li>iv. Names and qualifications of personnel involved in piping plover surveys.</li> </ul> <p>b) Prior to construction, the Corps shall delineate preferred piping plover habitat (intertidal portions of ocean beaches, ephemeral pools, washover areas, wrack lines) adjacent to or outside of the project footprint that might be impacted by construction activities. Obvious identifiers shall be used (for example, pink flagging on metal poles) to clearly mark the beginning and end points to prevent accidental impacts to use areas.</p> <p>c) Piping plover habitat delineated adjacent to or outside of the project footprint shall be avoided to the maximum extent practicable when staging equipment, establishing travel corridors, and aligning pipeline.</p> <p>d) Driving on the beach for construction shall be limited to the minimum necessary within the designated travel corridor, which will be established just above or just below the primary “wrack” line.</p> <p>e) Educational signs shall be installed at public access points within the project area with emphasis on the importance of the beach habitat and wrack for piping plovers. When the project area has a pet or dog regulation, the provisions of the regulation shall be included on the educational signs.</p> <p>f) For one full piping plover migration and winter season (beginning July 15 to May 15) prior to construction, and 2 years following each dredging and sand placement event, bimonthly (twice-monthly) surveys for piping plovers shall be conducted in the</p>

Resource	Environmental Consequences	Environmental Protection Measures and Required Permits
		<p>beach fill and in any other intertidal or shoreline areas within or affected by the project. If a full season is not available, at least 5 consecutive months with three surveys per month spaced at least 9 days apart are required. During emergency projects, the surveys will begin as soon as possible prior to, and up to implementing the project. Piping plover identification, especially when in non-breeding plumage, can be difficult. If preconstruction monitoring is not practicable, it will be so indicated in the notification to the Service (see P3BO Term and Condition #2) and the Service will decide whether to require a separate individual consultation. See introductory paragraph to Reasonable and Prudent Measures.</p> <p>g) The person(s) conducting the survey must demonstrate the qualifications and ability to identify shorebird species and be able to provide the information listed below. The following will be collected, mapped, and reported:</p> <ul style="list-style-type: none"> <li>i. Date, location, time of day, weather, and tide cycle when survey was conducted;</li> <li>ii. Latitude and longitude of observed piping plover locations (decimal degrees preferred);</li> <li>iii. Any color bands observed on piping plovers;</li> <li>iv. Behavior of piping plovers (<i>e.g.</i>, foraging, roosting, preening, bathing, flying, aggression, walking);</li> <li>v. Landscape features(s) where piping plovers are located (<i>e.g.</i>, inlet spit, tidal creeks, shoals, lagoon shoreline);</li> <li>vi. Habitat features(s) used by piping plovers when observed (<i>e.g.</i>, intertidal, fresh wrack, old wrack, dune, mid-beach, vegetation);</li> <li>vii. Substrata used by piping plovers (<i>e.g.</i>,</li> </ul>

Resource	Environmental Consequences	Environmental Protection Measures and Required Permits
		<p>sand, mud/sand, mud, algal mat);</p> <p>viii. The amount and type of recreational use (e.g., people, dogs on or off leash, vehicles, kite-boarders); and</p> <p>ix. All other shorebirds/waterbirds seen within the survey area.</p> <p>All information shall be provided in an Excel spreadsheet. Monitoring results shall be submitted (datasheets, maps, database) on standard electronic media (e.g., CD, DVD) to the appropriate Field Office by July 31 of each year in which monitoring is completed. If an appropriate web-based reporting system becomes available, it would be used in lieu of hard copy/media.</p> <p>[NOTE: As a condition to a permit from the FDEP, the bird monitor may also be required to report shorebird data to the Florida Fish and Wildlife Conservation Commission (FWC) <a href="https://public.myfwc.com/crossdoi/shorebirds/SigninExploreData.aspx">https://public.myfwc.com/crossdoi/shorebirds/SigninExploreData.aspx</a>.]</p> <p>3. The applicant will comply with the following additional conditions from the USFWS Biological Opinion for red knot #04EF2000-2014-F-0126 dated August 20, 2015:</p> <p>a) Beach compatible fill shall be placed on the beach or in any associated dune system. Beach compatible fill must be sand that is similar to a native beach in the vicinity of the site that has not been affected by prior sand placement activity. The fill material must be similar in both coloration and grain size distribution to that native beach. Beach compatible fill is material that maintains the general character and functionality of the material occurring on the beach and in the adjacent dune and coastal system. Fill material shall comply with the DEP requirements pursuant to the Florida Administrative Code (FAC) subsection 62B-41.005(15). A</p>

Resource	Environmental Consequences	Environmental Protection Measures and Required Permits
		<p>Quality Control Plan shall be implemented pursuant to FAC Rule 62B-41.008(1)(k)4.b.</p> <p>b) The Applicant must provide the following information to the Service's South Florida Ecological Services Office (1339 20th Street, Vero Beach, Florida 32960-3559 (772-562-3909) at least 10 business days prior to the commencement of work:</p> <ul style="list-style-type: none"> <li>i. Project location (include the DEP Range Monuments and latitude and longitude coordinates).</li> <li>ii. Project description (include linear feet of beach, actual fill template, access points, and borrow areas).</li> <li>iii. Date of commencement and anticipated duration of construction.</li> <li>iv. Names and qualifications of personnel involved in red knot surveys</li> </ul> <p>c) The Applicant will protect habitat features by implementing the following:</p> <ul style="list-style-type: none"> <li>i. Prior to construction, the Applicant shall delineate preferred red knot habitat (intertidal portions of Gulf beaches, ephemeral pools, washover areas, wrack lines) adjacent to or outside of the Project area that might be impacted by construction activities. Obvious identifiers shall be used (e.g., pink flagging on metal poles) to clearly mark the beginning and end points to prevent accidental impacts to use areas.</li> <li>ii. Red knot habitat delineated adjacent to or outside of the Project area shall be avoided to the maximum extent practicable when staging equipment, establishing travel corridors, and aligning pipeline.</li> <li>iii. Driving on the beach for construction shall be limited to the minimum necessary within the designated travel corridor, which will be established</li> </ul>

Resource	Environmental Consequences	Environmental Protection Measures and Required Permits
		<p>just above or just below the primary "wrack" line.</p> <ul style="list-style-type: none"> <li>iv. Predator-proof trash receptacles shall be installed and maintained during construction at all beach access points used for Project construction to minimize the potential for attracting predators of red knots. Workers shall be briefed on the importance of not littering and keeping the Project area trash and debris free.</li> <li>d) Educational signs shall be installed at public access points within the Project area with emphasis on the importance of the beach habitat and wrack for red knots, and minimizing human disturbance. If the Project area has a pet or dog regulation, the provisions of the regulation shall be included on the educational signs.</li> <li>e) The Applicant shall monitor impacts to red knots within the Project area as follows: <ul style="list-style-type: none"> <li>i. For one full red knot migration and winter season (beginning July 15 to May 15) prior to construction, and 2 years following each sand placement event, bimonthly (twice-monthly) surveys for red knots shall be conducted in the beach fill and in any other intertidal or shoreline areas within or affected by the Project. If a full season is not available, at least 5 consecutive months with three surveys per month spaced at least 9 days apart are required. During emergency Project events, the surveys will begin as soon as possible prior to, and up to implementing the Project.</li> <li>ii. The person(s) conducting the survey must demonstrate their qualifications and ability to identify shorebird species and be able to provide the information listed below. The</li> </ul> </li> </ul>

Resource	Environmental Consequences	Environmental Protection Measures and Required Permits
		<p>following will be collected, mapped, and reported:</p> <ul style="list-style-type: none"> <li>• Latitude and longitude of observed red knot locations (decimal degrees preferred).</li> <li>• Any color bands observed on red knots.</li> <li>• Behavior of red knots (e.g., foraging, roosting, preening, bathing, flying, aggression, walking).</li> <li>• Landscape features(s) where red knots are located (e.g., inlet spit, tidal creeks, shoals, lagoon shoreline).</li> <li>• Habitat features(s) used by red knots when observed (e.g., intertidal, fresh wrack, old wrack, dune, mid-beach, vegetation).</li> <li>• Substrata used by red knots (e.g., sand, mud/sand, mud, algal mat).</li> <li>• The amount and type of recreational use (e.g., people, dogs on or off leash, vehicles, kite-boarders) within the survey area.</li> <li>• All other shorebirds/waterbirds seen within the survey area.</li> </ul> <p>All information shall be provided in an Excel spreadsheet. Monitoring results shall be submitted (datasheets, maps, database) on standard electronic media (e.g., CD, DVD) to the South Florida Ecological Services Office by July 31 of each year in which monitoring is completed. If an appropriate web-based reporting system becomes available, it would be used in lieu of hard copy/media.</p> <p>f) The Applicant will contact the Service annually after initiating the project to schedule a meeting to discuss and assess the minimization measures in this Biological Opinion and the monitoring results outlined in Term and Condition 5.</p>

Resource	Environmental Consequences	Environmental Protection Measures and Required Permits
		<p>g) Upon locating a dead, injured, or sick threatened red knot specimen, initial notification shall be made to the Service's Office of Law Enforcement (Groveland, Florida; 352-429-1037). Additional notification shall be made to FWC at 1-888-404-3922 and the Service's South Florida Ecological Services Office (1339 20th Street, Vero Beach, Florida 32960-3559; 772-562-3909). Care should be taken in handling sick or injured specimens to ensure effective treatment and care and in handling dead specimens to preserve biological materials in the best possible state for later analysis of cause of death. In conjunction with the care of sick or injured endangered or threatened species or preservation of biological materials from a dead animal, the finder has the responsibility to ensure evidence intrinsic to the specimen is not unnecessarily disturbed.</p>
<p><b>Cultural Resources</b> See Section 4.6 for details</p>	<p>Updated – See USACE EA Sections 4.3 and 10.3</p> <p>Alternatives 1, 2, and 3 – No impact. Concurrence with SHPO received on May 17, 2021 regarding FEMA’s determination of No Effect on Historic Properties listed, or eligible for listing, in the <i>National Register of Historic Places</i> provided all ground-disturbing activities include FEMA’s Special Conditions</p>	<p>Alternatives 2 &amp; 3 would require the following measures:</p> <ul style="list-style-type: none"> <li>• If human remains or intact archaeological deposits are uncovered, work in the vicinity of the discovery will stop immediately and all reasonable measures to avoid or minimize harm to the finds will be taken. The applicant will ensure that archaeological discoveries are secured in place, that access to the sensitive area is restricted, and that all reasonable measures are taken to avoid further disturbance of the discoveries. The applicant’s contractor will provide immediate notice of such discoveries to the applicant. The applicant shall contact the Florida Division of Historical Resources and FEMA within 24 hours of the discovery. Work in the vicinity of the discovery may not resume until FEMA has completed consultation with SHPO, Tribes, and other consulting parties as necessary. In the event that unmarked human remains are encountered during permitted activities, all work shall stop</li> </ul>

Resource	Environmental Consequences	Environmental Protection Measures and Required Permits
	<p>for fortuitous finds or unexpected discoveries. Additionally, notification was made to 6 Tribal Nations no objections were received during the period of the consultation which ended on 6/11/2021, regarding FEMA’s determination of No Historic Properties Affected.</p>	<p>immediately, and the proper authorities shall be notified in accordance with Florida Statutes, Section 872.05. During the project, construction vehicles and equipment will be stored offsite or at existing access points within the applicant’s right-of-way.</p> <ul style="list-style-type: none"> <li>Any changes to the approved scope of work will require submission to, and evaluation and approval by, the State and FEMA, prior to initiation of any work, for compliance with Section 106.</li> </ul>
<p><b>Geology and Geomorphology</b></p>	<p>Updated – not included in USACE EA</p> <p>Alternative 1 – No impact</p> <p>Alternatives 2 &amp; 3 – No long-term impacts. Beach compatible sand will be used during construction.</p>	<p>Alternatives 2 &amp; 3 would require a JCP from FDEP that requires beach compatible sand to be utilized.</p>
<p><b>Vegetation</b></p>	<p>Updated – not included in USACE EA</p> <p>Alternative 1 – No impact from construction. Continuing erosion could lead to ongoing dune vegetation loss due to escarpment formation.</p> <p>Alternatives 2 &amp; 3 – No impact to dune vegetation during construction, beneficial impact from restored shoreline due</p>	<p>Not applicable</p>

Resource	Environmental Consequences	Environmental Protection Measures and Required Permits
	to buffer from storm surge.	
<b>Fish and Wildlife Resources</b>	<p>No change – see USACE EA Sections 1.5, 4.3, 6.2, and 6.3</p> <p>Alternative 1 – No impact</p> <p>Alternatives 2 &amp; 3 – Short term minor changes in nearshore and offshore softbottom bathymetry in the borrow area. Temporary minor impacts to migratory birds and surf-zone fishes. After construction, fish and wildlife resources are expected to recover.</p>	<p>Alternatives 2 &amp; 3 would require implementation of FDEP JCP and USACE permit conditions regarding nearshore hardbottom and Migratory Bird Treaty Act, including provisions in applicable PBOs regarding sea turtles and shorebirds.</p>
<b>Socioeconomic</b>	<p>No change – see USACE EA Section 6.4</p> <p>Alternative 1 – Impacts could result from future storm damages along the shoreline</p> <p>Alternatives 2 &amp; 3- Minor effects to water related recreation and aesthetics. This area is largely tourism driven but impacts will be minor short term, and beneficial in the long term by restoring the beach.</p>	Not applicable
<b>Coastal Barrier Resources</b>	<p>Updated – not included in USACE EA</p> <p>Alternative 1 – No impact</p>	<p>FEMA requested consultation with USFWS on May 8, 2018. USFWS responded on July 14<sup>th</sup>, 2018 stating that due to competing priorities, the service is unable to provide an opinion on the applicability of CBRA’s exceptions to this action, but FEMA may</p>

Resource	Environmental Consequences	Environmental Protection Measures and Required Permits
	<p>Alternatives 2 &amp; 3 – A very small portion at the southernmost point of the beach restoration project is located within Coastal Barrier Resource System unit P22</p>	<p>elect to proceed with the action/project if it has determined that the action/project is allowable under the CBRA. FEMA determined that South Siesta Key Beach is a public facility, per the definition of 44 CFR §206.342 (e), and meets the general exception of 44 CFR §206.345(a) (1) and 16 U.S.C. 3505(a)(3): The maintenance, replacement, reconstruction, or repair, but not the expansion, of publicly owned or publicly operated roads, structures, or facilities that are essential links in a larger network or system.</p>
<p><b>Hazardous, Toxic, and Radioactive Waste</b></p>	<p>No change – see USACE EA Section 6.1.3</p> <p>Alternative 1 - No impact</p> <p>Alternatives 2 &amp; 3- Minor short term impact due to potential for spills during construction</p>	<p>Potential for spills from construction equipment will be minimized and handled in accordance with applicable regulations. The contractor shall perform all maintenance of equipment, including but not limited to refueling, filter changes, and replacement of hydraulic lines in a manner so as not to contaminate soils, ground or surface waters, or any other natural resources.</p>
<p><b>Air Quality</b></p>	<p>Updated – not included in USACE EA</p> <p>Alternative 1 – No impact</p> <p>Alternatives 2 &amp; 3 – Minor short term impacts to air quality due to exhaust from construction equipment</p>	<p>Not applicable</p>
<p><b>Noise</b></p>	<p>Updated – not included in USACE EA</p> <p>Alternative 1 – No impact</p> <p>Alternatives 2 &amp; 3 – Minor short term impacts from construction equipment</p>	<p>Not applicable</p>

Resource	Environmental Consequences	Environmental Protection Measures and Required Permits
<p><b>Cumulative Impacts</b> See Section 5.0 for details</p>	<p>No change – see USACE EA Section 9.0 Alternatives 1, 2, and 3 are not expected to have significant adverse cumulative impacts on any resource</p>	<p>Not applicable</p>

## 4.2 Floodplain Management (Executive Order 11988)

Executive Order (EO) 11988 requires federal agencies to take action to minimize occupancy and modification of the floodplain. Specifically, EO 11988 prohibits federal agencies from funding construction in the 100-year floodplain unless there are no practicable alternatives. FEMA’s regulations for complying with EO 11988 are promulgated in 44 CFR Part 9. Based on the current FEMA Flood Insurance Rate Map (FIRM), the project area is located within the coastal high hazard area (VE Zone) (Appendix A).

### Alternative 1 – No Action Alternative

Under the no action alternative, no construction would occur and there would be no effect to the floodplain. Improved property adjacent to the project area would remain at risk from future flooding events.

### Alternatives 2 & 3 – Repair the Beach to Pre-Disaster Condition (Preferred) & Repair the Beach to Pre-Disaster Plus Possible Background Erosion

Under Alternatives 2 & 3, construction to restore the facility would occur within the floodplain. The reconstructed engineered beach would serve to reduce the flood risk to adjacent improved property. The facility is functionally dependent upon its location within the floodplain and facilitates open space use of the floodplain for recreational value. An 8-step checklist, as required by 44 CFR Part 9, has been completed for this alternative (Appendix A).

## 4.3 Coastal Zone Management

The Florida Coastal Management Program (FCMP) is a network of statutes that protect Florida’s coastal resources. FDEP implements federal consistency reviews through the Florida State Clearinghouse or its permitting process.

An FDEP Joint Coastal Permit (JCP) is required for activities located on Florida’s natural sandy beaches that extend seaward of the mean high water line, extend into sovereign submerged lands, and are likely to affect the distribution of sand along the beach.

### Alternative 1 – No Action Alternative

Under the no action alternative, no work would occur and there would be no impact to the coastal zone.

### Alternatives 2 & 3 – Repair the Beach to Pre-Disaster Condition (Preferred) & Repair the Beach to Pre-Disaster Plus Possible Background Erosion

Under the preferred alternative and Alternative 3, activity and construction would occur in the coastal zone. The project would restore eroded areas of the shore by replacing beach compatible sand to a designed beach profile meant to mimic the natural dune system. The applicant has obtained a Joint Coastal Permit from FDEP and must adhere to the construction conditions and monitoring requirements. Issuance of this permit constitutes consistency review.

#### **4.4 Wetlands (Executive Order 11990)**

EO 11990, Protection of Wetlands, requires federal agencies to take action to minimize the loss of wetlands. The NEPA compliance process requires federal agencies to consider direct and indirect impacts to wetlands, which may result from federally funded actions.

##### Alternative 1 – No Action Alternative

Under the no action alternative, no impacts to wetlands are anticipated.

### Alternatives 2 & 3 – Repair the Beach to Pre-Disaster Condition (Preferred) & Repair the Beach to Pre-Disaster Plus Possible Background Erosion

Under the preferred alternative and Alternative 3, short-term impacts are anticipated. The action will involve placing sand in the near and foreshore environment. Temporary increases to turbidity could be expected due to sand placement; however, no long-term impacts are expected due to the lack of estuarine or marshy wetlands in the project vicinity. Short-term minor negative impacts would also be expected to commercial and recreational fisheries near the shoreline, but impacts are expected to be limited to the construction timeframe. Impact would include the higher turbidity in the habitat causing species to move from the area and reducing the number of catch available for a short period of time. Turbidity is expected to be minimal since sand is being sourced from an upland mine and would only occur during placement and not dredging. The long-term impacts to the marine wetlands would be beneficial for preserving habitat and recreational value as well as reducing rates of sand loss and erosion from future storms. The applicant has obtained an FDEP JCP and USACE Individual Permit and will be required to follow the permit conditions to minimize impacts from construction.

#### **4.5 Environmental Justice (Executive Order 12898)**

On February 11, 1994, President Clinton signed EO 12898, entitled, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations”. The EO directs federal agencies, “to make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States.”

The total population within a half-mile buffer of the Turtle Beach Study Area is 943 according to the EJSCREEN Standard Report, accessed August 26, 2020. The area has a minority population of 4% and a low-income population of 14%, both of which are lower than the State’s average of 46% and 36% respectively.

##### Alternative 1 – No Action Alternative

Under the no action alternative, no disproportionate impacts on minority or low-income populations are anticipated.

## Alternatives 2 & 3 – Repair the Beach to Pre-Disaster Condition (Preferred) & Repair the Beach to Pre-Disaster Plus Possible Background Erosion

Under the preferred alternative, no disproportionate impacts, adverse impacts to minority or low-income populations are anticipated. The beach will be restored to its engineered beach profile with no changes to the existing design and footprint. The project benefits would be to all population members.

### **4.6 Threatened and Endangered Species**

In accordance with Section 7 of the Endangered Species Act (ESA) of 1973, the project was evaluated for the potential occurrences of federally listed threatened and endangered species. The ESA requires any federal agency that funds, authorizes or carries out an action to ensure that their action is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of designated critical habitats.

#### **4.6.1 Existing Conditions**

Potential threatened and endangered species that may be present in the project area were identified in the previous USACE EA. The species were verified by accessing the USFWS Information for Planning and Consultation (IPaC) database in May 2019 to identify species that may occur in Sarasota County. The species likely to occur in the project area are the green sea turtle (*Chelonia mydas*), hawksbill sea turtle (*Eretmochelys imbricate*), leatherback sea turtle (*Dermochelys coriacea*), loggerhead sea turtle (*Caretta caretta*), Kemp's ridley sea turtle (*Lepidochelys kempii*), red knot (*Calidris canutus rufa*), piping plover (*Charadrius melodus*), manatee (*Trichechus manatus latirostris*), and Aboriginal Prickly-apple (*Harrisia aboriginum*). The shoreline of the project area is suitable sea turtle nesting habitat for listed sea turtles as well as foraging habitat for the piping plover and red knot. Critical habitat for the loggerhead sea turtle and Aboriginal Prickly-apple exists in or near the project area.

#### Alternative 1 – No Action Alternative

Alternative 1 does not include any FEMA undertaking and no construction, therefore there would be no potential for effects and no further responsibility under the ESA. Suitable sea turtle nesting habitat may continue to be reduced in the project area due to coastal erosion.

## Alternatives 2 & 3 – Repair the Beach to Pre-Disaster Condition (Preferred) & Repair the Beach to Pre-Disaster Plus Possible Background Erosion

Alternatives 2 & 3 are expected to have impacts to species along the shoreline and in the nearshore environment due to sand placement. If sand placement and renourishment of the engineered beach occurs during sea turtle nesting season, the action may adversely affect nesting sea turtles and hatchlings. Short-term adverse impacts may be expected to the red knot and piping plover due to disruption in foraging habitat during construction. Sand placement activities may affect, and are likely to adversely affect, sea turtles in the nearshore environment, therefore the applicant has agreed to follow the Reasonable and Prudent Measures, and Terms and Conditions outlined in the SPBO listed below. USFWS determined that the West Indian manatee is not likely to be adversely affected and the applicant agrees to follow the Standard Manatee Conditions for In-Water Work (FWC 2011a). Whale species are unlikely to be in the nearshore area of the project and therefore, are not likely to be adversely affected. The Aboriginal Prickly-apple is present just landward of the open-beach in the protected dune area. This species is only found on the southern portion of the project and its location in the dune will protect it from adverse effects of the project.

The project will be required to meet the terms and conditions of these three applicable USACE programmatic biological opinions to minimize impacts to listed species: the USFWS Statewide Sand Placement Biological Opinion (Service Log 41910-2011-F-0170, dated March 13, 2015), the USFWS Programmatic Piping Plover Biological Opinion (Service Log 04EF1000-2013-F-0124, dated May 22, 2013), and the USFWS Biological Opinion for red knot (Service log 04EF2000-2014-F-0126, dated August 20, 2015). The project will also adhere to the Florida Standard Manatee Conditions as required by the PBOs. The terms and conditions of these documents can be found in Table 4.1.

## 4.7 Cultural Resources

Consideration of impacts to cultural resources is mandated by Section 106 of the National Historic Preservation Act (NHPA) as implemented by CFR Part 800. Requirements include identifying historic properties that may be impacted by the proposed action or alternatives within the area of potential affect (APE). Historic properties may be archaeological sites, structures, historic districts, or other historic resources listed in or determined eligible for listing in the National Register of Historic Places (NRHP). If adverse effects on historic, archaeological, or cultural properties are identified, federal agencies must attempt to avoid, minimize, or mitigate the impacts to these resources.

FEMA, the Florida State Historic Preservation Office (SHPO), the Florida Division of Emergency Management, the Choctaw Nation of Oklahoma, and the Advisory Council on Historic Preservation have executed a Statewide Programmatic Agreement dated September 10, 2014 to streamline the Section 106 review process.

### 4.7.1 Existing Conditions

FEMA evaluated potential resources in the project area and consulted with the State Historic Preservation Office (SHPO). Concurrence was received on May 17, 2021 that the proposed project will have *no effect on historic properties listed, or eligible for listing, on the National Register of Historic Places*. Additionally, FEMA consulted with six Tribes including the Alabama-Quassarte Tribal Town of the Creek Nation, Miccosukee Tribe of Indians of Florida, Muscogee Creek Nation, Poarch Band of Creek Indians, Seminole Tribe of Florida, and Seminole Nation of Oklahoma. One of the tribes (Seminole Tribe of Florida) provided concurrence with FEMA's finding of *No Historic Properties Affected* and the five other tribes did not express any objections to the proposed project.

#### Alternative 1 – No Action Alternative

Alternative 1 does not include any FEMA undertaking and no construction, therefore there would be no potential for effects and no further responsibility under Section 106.

#### Alternatives 2 & 3 – Repair the Beach to Pre-Disaster Condition (Preferred) & Repair the Beach to Pre-Disaster Plus Possible Background Erosion

Alternatives 2 & 3 would include renourishing the beach utilizing sand from three possible upland mines. It is not anticipated for the work along the shoreline to have an impact as renourishment activities have occurred in this area previously. Activities will not disturb sand and shoreline below the depth where sand has been placed previously.

The following conditions will be applied to the project:

Alternatives 2 & 3 would require the following measures:

- If human remains or intact archaeological deposits are uncovered, work in the vicinity of the discovery will stop immediately and all reasonable measures to avoid or minimize harm to the

finds will be taken. The applicant will ensure that archaeological discoveries are secured in place, that access to the sensitive area is restricted, and that all reasonable measures are taken to avoid further disturbance of the discoveries. The applicant's contractor will provide immediate notice of such discoveries to the applicant. The applicant shall contact the Florida Division of Historical Resources and FEMA within 24 hours of the discovery. Work in the vicinity of the discovery may not resume until FEMA has completed consultation with SHPO, Tribes, and other consulting parties as necessary. In the event that unmarked human remains are encountered during permitted activities, all work shall stop immediately, and the proper authorities notified in accordance with Florida Statutes, Section 872.05.

- During the project, construction vehicles and equipment will be stored offsite or at existing access points within the applicant's right-of-way.
- Any changes to the approved scope of work will require submission to, and evaluation and approval by, the State and FEMA, prior to initiation of any work, for compliance with Section 106.

## **5.0 CUMULATIVE IMPACTS**

Per the Council on Environmental Quality (CEQ) regulations, cumulative impacts is the impact on the environment that "results 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" (40 CFR 1508.7). In accordance with NEPA, this SEA considered the combined effect of the preferred alternative and other actions occurring or proposed in the vicinity of the proposed project site.

The shoreline along Siesta Key, particularly Turtle Beach, is vulnerable to coastal erosion and expected to be subject to damages from future tropical storms and hurricanes, which may result in presidential declarations. As an engineered and maintained facility, future renourishments due to storm or background erosion are expected. The previous USACE EA issued in 2015 identified cumulative impacts from ongoing shoreline stabilization efforts. The renourishment efforts identified in the EA were expected to occur at that time and as an ongoing maintenance requirement upon constructing the engineered and maintained beach.

The shoreline of the project area is largely developed with residential housing and resorts. An undeveloped area at the southern end of the project is protected from development as a Coastal Barrier Resources System Unit P22. It is not anticipated that the proposed project or future maintenance actions will have an impact on development due to the nature of the existing area. The continued existence of improved property and redevelopment of that property may be associated with the continued maintenance and renourishment of Turtle Beach.

The project and anticipated future actions in the area will have short-term impacts to commercial and recreational usage of the shoreline and associated borrow area due to construction efforts. However, it is anticipated there will be no long-term impact to commercial fisheries and beneficial long-term impacts to recreational usage of the shoreline as a result of the continued existence of the engineered beach. The shoreline in this area is a large component of the economy as a component of tourism – continued maintenance of the engineered beach will continue its benefit for tourism and recreational value. Based on the review conducted, when added to past, present, and reasonably foreseeable actions, the proposed action is not expected to have significant adverse cumulative impacts on any resource.

## **6.0 PUBLIC INVOLVEMENT**

USACE is the lead federal agency that conducted the original NEPA analysis and issued a statement of finding in January 2016. FEMA issued a disaster-wide initial public notice for Hurricane Hermine on November 21, 2016 to notify the public of projects under the Public Assistance program that may be occurring within floodplains. For environmentally sensitive projects such as beach renourishments, Sarasota County has various methods of informing the public. Sarasota County typically hosts town hall meetings for members of the public to voice concerns or support of the projects. For the renourishment project detailed here, Sarasota County plans to host meetings with community associations and public workshops. Additionally, the county will post project specific information on their website and in news releases.

The public has been notified of the availability of this SEA for review and comment by posting of the public notice (Appendix C) and SEA on FEMA's website and Sarasota County's website. Additionally, a hard copy of this SEA was made available at the Sarasota County Administration Building at 1660 Ringling Boulevard, Sarasota, Florida 34236 during normal business hours. The public comment period ended on November 5, 2021 after 30 days from the date of initial posting (October 6, 2021) with no comments received.

## **7.0 AGENCY COORDINATION**

Several of the findings of the USACE were adopted per Unified Federal Review. The following agencies and organizations were contacted by USACE or FEMA:

- U.S. Fish and Wildlife Service (North Florida Ecological Services Field Office)
- National Marine Fisheries Service (NMFS)
- U.S. Army Corps of Engineers, Jacksonville District
- Florida Division of Historical Resources (SHPO)
- Alabama-Quassarte Tribal Town of the Creek Nation
- Miccosukee Tribe of Indians of Florida
- Muscogee Creek Nation
- Poarch Band of Creek Indians
- Seminole Tribe of Florida
- Seminole Nation of Oklahoma

## 8.0 LIST OF PREPARERS

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## 9.0 REFERENCES

USACE, 2015. Department of the Army Environmental Assessment and Statement of Finding for Permit Application SAJ-2004-12003(SP-MEP).

**Appendices available upon request to FEMA  
Region IV EHP (FEMA-R4EHP-  
FLORIDA@fema.dhs.gov)**