



US Army Corps
of Engineers®
Jacksonville District

August 2020

**MANATEE COUNTY, FLORIDA SHORE
PROTECTION PROJECT – Anna Maria Island**
Manatee County, Florida

DRAFT
Supplemental
Environmental Assessment (SEA)

Dune Resilience



**US Army Corps of Engineers
JACKSONVILLE DISTRICT**

PROPOSED FINDING OF NO SIGNIFICANT IMPACT

**Manatee County, Florida Shore Protection Project – Anna Maria Island
Manatee County, Florida
Dune Resilience**

The U.S. Army Corps of Engineers, Jacksonville District (Corps), has prepared a Supplemental Environmental Assessment (SEA) in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended, and its implementing regulations to evaluate design changes to incorporate resiliency features, such as sand dunes, into an existing Federal Shore Protection Project (SPP) located at Anna Maria Island, Manatee County, Florida. In addition to a “no action” alternative, the SEA evaluated various alternative design refinements to increase project robustness, resiliency, and/or reliability. The Preferred Alternative includes changes within the existing project authority as follows:

Design Change	Summary of Recommendation
Dune Incorporation	Dune features would be incorporated into the project as appropriate. Dunes could be constructed as part of the project if existing dunes become eroded. Newly constructed dunes would be planted with appropriate vegetation.
Vehicle Access Modifications	Potential modifications for vehicle access points include measures such as angling accesses, narrowing accesses, and converting them to pedestrian-only access.
Pedestrian Access Modifications	Modifications could include signage, sand fencing, or rope fencing to protect the dunes, as needed.

As described herein, the design changes each have independent utility and can be implemented separately, if needed.

I have reviewed the SEA, incorporated herein by reference. The analysis performed and the information presented in the SEA is summarized below:

- a. The Preferred Alternative shall be in compliance with Section 7 of the Endangered Species Act of 1973, as amended. USACE has determined that the Preferred Alternative may affect endangered or threatened nesting sea turtles. The project is appropriate to apply to the Statewide Programmatic Biological Opinion, and USACE has initiated formal consultation

with the U.S. Fish and Wildlife Service (USFWS) under this opinion. USACE also determined that the Preferred Alternative may affect, but is not likely to adversely affect the threatened piping plover and threatened red knot. USACE has requested USFWS' concurrence with this determination. There is no effect on species under NMFS' jurisdiction.

- b. The Preferred Alternative is being coordinated with the State of Florida, and all applicable water quality standards will be met. There is an existing water quality certification that was obtained from the Florida Department of Environmental Protection pursuant to section 401 of the Clean Water Act (CWA) of 1972, as amended (40 CFR 230), for the project, and it will be modified to include the proposed actions prior to construction.
- c. A determination of consistency with the Florida Coastal Zone Management program pursuant to the Coastal Zone Management Act of 1972 is provided as an appendix to the Supplemental Environmental Assessment. The state's final concurrence is expected to be received from FDEP prior to construction.
- d. The Preferred Alternative does not involve any discharge of dredged or fill materials below the mean high water line subject to the CWA of 1972, as amended. Discharges related to the dredging and beach fill associated with the existing project are evaluated pursuant to 404(b)(1) of the CWA in previous NEPA documents for this project. Specifically, a section 404 (b) evaluation for the borrow area was included in the 2013 EA, and for the beach placement site in the 2000 EA.
- e. Consultation regarding the Preferred Alternative is complete with the Florida State Historic Preservation Officer (SHPO) and the appropriate federally recognized Tribes. Pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended, USACE determined that the Preferred Alternative would have no effect on historic properties and consulted with the certified local government of Manatee County, Florida State Historic Preservation Officer, Miccosukee Tribe of Indians of Florida, Seminole Nation of Oklahoma, Seminole Tribe of Florida, and Thlopthlocco Tribal Town. The Seminole Tribe of Florida provided a letter with no objections to the project on 21 July 2020. All other parties declined to comment.
- f. There are no effects to Essential Fish Habitat. However, the Preferred Alternative is being coordinated with the National Marine Fisheries Service in accordance with the Magnuson-Stevens Fishery Conservation and Management Act.
- g. The Preferred Alternative has been evaluated pursuant to the Migratory Bird Treaty Act. The Jacksonville District's Migratory Bird Protection Procedures will be implemented.
- h. Benefits to the public will include dunes and design refinements that contribute to and supplement the erosion damage reduction provided by the existing project berm.

In view of the above and the attached SEA, and after consideration of public and agency comments received, I conclude that the Preferred Alternative would not result in a significant effect on the quality of the human environment and is not contrary to the public interest, therefore preparation of an Environmental Impact Statement is not required.

Andrew D. Kelly, Jr.
Colonel, U.S. Army
District Commander

Date

TABLE OF CONTENTS

1	PROJECT PURPOSE AND NEED	
1.1	Introduction	1
1.2	Project Authority	2
1.3	Project Location and Description	2
1.4	Project Need or Opportunity	4
1.5	Agency Goal or Objective	4
1.6	Related Documents	5
1.7	Decisions to be Made	5
1.8	Scoping and Issues	5
1.9	Permits, Licenses, and Entitlements	7
2	ALTERNATIVES	8
2.1	Description of Alternatives	8
2.2	Issues and Basis for Choice	14
2.3	Preferred Alternative	14
2.4	Comparison of Alternatives	14
3	AFFECTED ENVIRONMENT	19
3.1	General Physical Features	19
3.2	Vegetation	19
3.3	Threatened and Endangered Species	22
3.4	Migratory Birds	25
3.5	Other Wildlife Resources	25
3.6	Cultural, Historic, and Archaeological resources	25
3.7	Coastal Barrier Resources	26
3.8	Water Quality	27
3.9	Aesthetic Resources	27
3.10	Recreation Resources	27
3.11	Air Quality	27
3.12	Noise	27
3.13	Economic and Social Effects	27
3.14	Native Americans	27
4	ENVIRONMENTAL EFFECTS	28
4.1	General Environmental Effects	28
4.2	Dune Vegetation	30
4.3	Threatened and Endangered Species	31
4.4	Migratory Birds	33
4.5	Other Wildlife Resources	34
4.6	Cultural, Historic, and Archaeological Resources	35

TABLE OF CONTENTS

4.7	Coastal Barrier Resources	37
4.8	Water Quality	37
4.9	Aesthetic Resources	38
4.10	Recreation Resources	40
4.11	Air Quality	41
4.12	Noise	43
4.13	Energy Requirements and Conservation	44
4.14	Natural or Depletable Resources	44
4.15	Economic and Social Effects	46
4.16	Native Americans	47
4.17	Cumulative Effects	47
4.18	Irreversible and Irrecoverable Commitment of Resources	53
4.19	Unavoidable Adverse Environmental Effects	53
4.20	Local Short-term Uses and Maintenance/Enhancement of Long-term Productivity	53
4.21	Indirect Effects	54
4.22	Compatibility with Federal, State, and Local Objectives	54
4.23	Conflicts and Controversy	54
4.24	Uncertain, Unique, or Unknown Risks	54
4.25	Precedent and Principle for Future Actions	54
4.26	Environmental Commitments	54
5	COMPLIANCE WITH ENVIRONMENTAL REQUIREMENTS	56
5.1	National Environmental Policy Act of 1969	56
5.2	Endangered Species Act of 1973	56
5.3	Fish and Wildlife Coordination Act of 1958	56
5.4	National Historic Preservation Act of 1966 (Inter Alia)	56
5.5	Clean Water Act of 1972	56
5.6	Clean Air Act of 1972	57
5.7	Coastal Zone Management Act of 1972	57
5.8	Farmland Protection Policy Act of 1981	57
5.9	Wild and Scenic River Act of 1968	57
5.10	Marine Mammal Protection Act of 1972	57
5.11	Estuary Protection Act of 1968	57
5.12	Federal Water Project Recreation Act	57
5.13	Submerged Lands Act of 1953	57
5.14	Coastal Barrier Resources Act and Coastal Barrier Improvement Act of 1990	58
5.15	Rivers and Harbors Act of 1899	58
5.16	Anadromous Fish Conservation Act	58
5.17	Migratory Bird Treaty Act and Migratory Bird Conservation Act	58
5.18	Marine Protection, Research, and Sanctuaries Act	58
5.19	Magnuson-Stevens Fishery Conservation and Management Act	58
5.20	Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970	59

TABLE OF CONTENTS

5.21	E.O. 11990, Protection of Wetlands	59
5.22	E.O. 11988, Flood Plain Management	59
5.23	E.O. 12898, Environmental Justice	60
5.24	E.O. 13089, Coral Reef Protection	62
5.25	E.O. 13112, Invasive Species	62
5.26	E.O. 13186, Migratory Birds	62
6	LIST OF PREPARERS AND REVIEWERS	63
6.1	Preparers	63
6.2	Reviewers	63
7	PUBLIC INVOLVEMENT	64
7.1	Scoping and Draft SEA	64
7.2	Agency Coordination	64
7.3	Comments Received and Response	64
8	REFERENCES	65
9	INDEX	66

LIST OF FIGURES

Figure 1. Location Map for Manatee County, Florida SPP.....	3
Figure 2. Project Location Map: Manatee County Florida SPP.....	4
Figure 3. Adapted Advanced Fill Nourishment Template to Include a Dune.	10
Figure 4. Resilience Profile Demonstrating How a Dune Contributes to Increased Resilience....	11
Figure 5. Example of Typical Dune Vegetation in the Project Area.....	20
Figure 6. Example of Typical Dune Vegetation in the Project Area.....	20
Figure 7. Map of Resources in the Project Area.	21
Figure 8. Monthly Piping Plover Frequency Data, 1900-2020 (Source: Ebird Online Database, July 2020).	24
Figure 9. Monthly Rufa Red Knot Frequency Data for 1900-2020 (Source: Ebird Online Database, July 2020).	25

TABLE OF CONTENTS

LIST OF TABLES

Table 1. Locations of Gaps in the Existing Dunes Along the Project Area 12
Table 2. Design Modifications Recommended as the Preferred Alternative for the Project..... 14
Table 3. Summary of Direct and Indirect Effects Associated with the Action and the "No Action" Alternatives 15
Table 4. Sea Turtle Nesting Data for Anna Maria Island From 2015 Through 2019 (Source: Fwc/Fwri Statewide Nesting Beach Survey Program as of 16 July 2020)..... 22
Table 5. Sea Turtle Species that May Nest Along the Gulf Coast of Anna Maria Island, Manatee County, Florida. Species Are Listed in Order of Relative Abundance..... 22
Table 6. Coastal Barrier Resources System (Cbrs) System Units and Otherwise Protected Areas Located in the Project Area. 26
Table 7. Summary of Cumulative Effects 49
Table 8. USEPA EJAssist Environmental Justice Criteria Percentages for Manatee County Florida SPP – Anna Maria Island. 61
Table 9. Dune Scoping Letter – December 03, 2018 1

APPENDICES

Appendix A: Coastal Zone Management Consistency
Appendix B: Pertinent Correspondence
Appendix C: Manatee County, Florida Shore Protection Project – Anna Maria Island, Engineering Documentation Report (EDR), Dune Resilience

ACRONYM LIST

BEC	Beach Erosion Control
BMP	Best Management Practice
CAA	Clean Air Act
CSRM	Coastal Storm Risk Management
CWA	Clean Water Act
cy	cubic yard
CZMA	Coastal Zone Management Act
EDR	Engineering Documentation Report
EFH	Essential Fish Habitat
ESA	Endangered Species Act
FDEP	Florida Department of Environmental Protection
FWCC	Florida Fish and Wildlife Conservation Commission
HTRW	Hazardous, Toxic, and Radioactive Waste
MHWL	Mean High Water Line
MLLW	Mean Lower Low Water
MSFCMA	Magnuson-Stevens Fisheries Conservation and Management Act
NAVD88	North American Vertical Datum of 1988
NEPA	National Environmental Policy Act
NOA	Notice of Availability
NMFS	National Marine Fisheries Service
ODMDS	Ocean Dredged Material Disposal Site
P&G	Principles and Guidelines
RSM	Regional Sediment Management
SEA	Supplemental Environmental Assessment
SHPO	State Historic Preservation Officer
SLC	Sea Level Change
SLR	Sea Level Rise
SPP	Shore Protection Project
STOF	Seminole Tribe of Florida
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
WRDA	Water Resources Development Act

1 PROJECT PURPOSE AND NEED

1.1 INTRODUCTION

The U.S. Army Corps of Engineers, Jacksonville District (USACE), is considering design changes to increase the robustness, resiliency, and/or reliability of the Manatee County, Florida Federal Shore Protection Project (SPP) – Anna Maria Island.

This Supplemental Environmental Assessment (SEA) considers a range of alternative design modifications that could increase project resiliency, including dune construction with vegetation, vegetation only, sand fencing, pedestrian access modifications, vehicle access modifications, and outfall pipe modifications. To assist in this analysis, USACE evaluated the performance of existing dunes, including their ability to reduce erosion and inundation damages, elongate nourishment intervals, decrease nourishment volumes, and provide other incidental environmental benefits. A generalized dune template was developed for comparison to the existing beach template. This dune template could include elongating existing dunes, closing existing gaps in the dune line, realigning the current dune line, or creating dunes in areas where they do not currently exist. As noted above, USACE also analyzed stand-alone vegetation and sand fencing design alternatives, which can further enhance dune stability and beach accretion rates.

The state of the science of coastal engineering has evolved since the time of authorization to recognize that dunes are integral components of a beach system and play a critical role in landward erosion. Observations of how beaches with dunes have performed during recent storm events, as well as research conducted by USACE's Engineer Research and Development Center (ERDC) and others have led to an improved understanding of how the dune and beach function as one interconnected system and the role that dunes play in storm response and overall beach morphology. It is now understood that dunes not only address storm surge flooding issues, but they contribute to erosion control above and beyond the erosion control provided by a beach berm alone. It is also now understood that vegetated dunes with established root systems better withstand erosion than dunes consisting of sand alone. When the beach is actively eroded during storms, sand removed from the dunes is deposited onto the beach, serving as an immediate natural sand source. They also serve as the ultimate line of defense against storm surge inundation by acting as a natural buffer to protect inland infrastructure. In addition to being integral to a beach's storm damage reduction function, dunes provide important habitat for many plants and animals. The below excerpt from New Jersey Sea Grant Consortium Dune Manual describes how dunes and beaches evolve in response to small and large magnitude storms.

“Coastal sand dunes act as reservoirs of sand that help the beach maintain its equilibrium and preserve the ability of the beach to respond naturally to storm events. Beaches evolve during a storm by taking on a more dissipative state that causes waves to break farther offshore, reducing the wave energy near the shoreline. During this transition, the beach slope is reduced and one or more sand bars may form. The bars are formed as sand is transported offshore during the peak

of the storm and is deposited near the region of most intense wave breaking. During smaller storms, the waves don't reach the base of the dune, and the erosion is limited to the beach face (berm) itself. The dunes only become active during moderate to large storms when the dissipation created by the bars is insufficient to prevent the waves from attacking the base of the dune. As a dune erodes, it releases a portion of its built-up reservoir of sand into the littoral system, where it contributes to bar formation and the development of a more dissipative profile, ultimately reducing damage to inland infrastructure. Larger dunes can withstand more wave activity and therefore provide more protection to areas behind them. In the simplest terms, the sand stored in a dune buys time and provides protection from severe storms.” – (Wooton, et al 2016 New Jersey Sea Grant Consortium Dune Manual).

1.2 PROJECT AUTHORITY

The Manatee County, Florida Shore Protection Project (SPP), Anna Maria Island, was authorized by Section 201 of the Flood Control Act of 1965 (Public Law (PL) 89-298¹) dated 27 October 27 1965, as amended by Section 131 of the Water Resources Development Act (WRDA) of 1976 (PL 94-587) and Section 206 of WRDA 1992 (PL 102-580). Resolutions approving the project under the provisions of Section 201 of Public Law 89-298 were adopted by the Senate Public Works Committee on 20 November 1975. The Chief of Engineers authorized the SPP for Manatee County, Florida on 19 December 1975.

1.3 PROJECT LOCATION AND DESCRIPTION

Manatee County is located on the west coast of Florida, south of the Tampa-St. Petersburg metropolitan area. Manatee County is bordered by Hillsborough County to the north, Hardee and De Soto Counties to the east, Sarasota County to the south, and the Gulf of Mexico to the west. The western limit of Manatee County consists of two Gulf coast barrier islands.

¹ Earlier decision documents incorrectly referenced the Flood Control Act of 1965 as PL 98-298.



Figure 1. Location Map for Manatee County, Florida SPP.

Anna Maria Island is the largest barrier island located entirely within Manatee County. The island is approximately seven miles long and is almost a mile wide at its widest point. Anna Maria Island is separated from the mainland to the east by Tampa Bay, Anna Maria Sound, and Sarasota Bay. The island is bordered by Passage Key Inlet to the north, Longboat Pass to the south, and the Gulf of Mexico to the west. Three municipalities, the City of Anna Maria, Holmes Beach, and Bradenton Beach, are located from north to south on Anna Maria Island.

The authorized project includes the entire 7.5 mile Gulf shoreline of Anna Maria Island. The initial project provided for restoration of 3.2 miles of beach to an elevation of 6.0 feet above mean low water with a 50-foot berm width and a natural slope seaward as would be shaped by wave action. The General Design Memorandum of September 1991 and subsequent 1991 Post Authorization Change Notification Report recommended an increase in project length to 4.2 miles with another 0.5 mile taper and an increase in berm width from 50 to 75 feet. The project fill limits extend from R-12 to R-33.4, including a 0.5 mile taper extending to R-36. The taper is part of the Federal project, but is part of the locally preferred plan and is not cost shared by the Federal government. Figure 2 shows the location of the existing Manatee County, Florida SPP.



Figure 2. Project Location Map: Manatee County Florida SPP.

1.4 PROJECT NEED OR OPPORTUNITY

Dunes are integral components of a beach system and play a critical role in reducing damages to the project and to upland infrastructure. This Supplemental Environmental Assessment is analyzing the opportunity to increase project robustness, resiliency, and reliability through minor design refinements. These design refinements include the incorporation of dunes into the authorized Federal project, vehicle access modifications, and pedestrian access modifications. See Section 2.3 for additional information.

1.5 AGENCY GOAL OR OBJECTIVE

USACE’s objective is to assess proposed alternatives for increasing the resilience of the Manatee County, FL SPP – Anna Maria Island and their potential for effects to the human environment with no addition or change to the authorized project purpose.

1.6 RELATED DOCUMENTS

This EA supplements the National Environmental Policy Act (NEPA) documents referenced below. Please use the following link (and select Manatee County) to access the current environmental documentation for these Federal projects:

<https://www.saj.usace.army.mil/About/Divisions-Offices/Planning/Environmental-Branch/Environmental-Documents/>

2000. Environmental Assessment on First Periodic Renourishment, Manatee County Shore Protection Project, Anna Maria Island, Manatee County, Florida. U.S. Army Corps of Engineers, Jacksonville District. FONSI dated 25 October 2000.

2000. Draft Limited Reevaluation Report with Environmental Assessment, Manatee County, Florida Shore Protection Project. U.S. Army Corps of Engineers, Jacksonville District. This report was not made final.

2013. Environmental Assessment, Anna Maria Island, Shoreline Protection Project – Borrow Area, Manatee County, Florida. U.S. Army Corps of Engineers, Jacksonville District. FONSI dated 25 June 2013.

1.7 DECISIONS TO BE MADE

The decision to be made upon completion of this SEA is whether to incorporate the proposed resiliency design refinements into the existing Federal shore protection project. A report is being prepared by USACE that identifies the decisions/recommended plans for this project. The project specific recommendations are located in Appendix C.

1.8 SCOPING AND ISSUES

1.8.1 ISSUES EVALUATED

The following issues were identified to be relevant to the proposed modification and/or addition of resiliency design refinements to this Federal project:

1. vegetation;
2. threatened and endangered species;
3. migratory birds;
4. other wildlife resources;
5. cultural, historic, and archaeological resources;
6. coastal barrier resources;
7. water quality;
8. aesthetic resources;

9. recreation resources;
10. air quality;
11. noise;
12. economic and social effects;
13. irreversible or irretrievable commitments of resources;
14. energy requirements and conservation potential;
15. natural or depletable resources requirements and conservation potential;
16. reuse and conservation potential; and
17. Native Americans.

1.8.2 ISSUES ELIMINATED FROM DETAILED ANALYSIS

The following issues were not considered important or relevant to the proposed action: hazardous, toxic, and radioactive waste (HTRW) and essential fish habitat (EFH). There are no known HTRW in the project area. The proposed action will occur entirely above the mean high water line; therefore, no essential fish habitat will be affected by the action. EFH associated with the sand sources was evaluated in previous documents, and this information is incorporated by reference.

1.8.3 PUBLIC INTEREST FACTORS

While USACE does not process and issue Federal permits for its own activities pursuant to 33 CFR 336.1, USACE authorizes its own discharges of dredged or fill material by applying all applicable substantive legal requirements, including public notice, opportunity for public hearing, and application of the section 404(b)(1) guidelines. As part of its review, USACE evaluates the probable effects, including cumulative effects, of the proposed activity and its intended use on the public interest. All factors that may be relevant to the proposed action must be considered, including the cumulative effects thereof. The public interest factors are listed in Subsection 1.8.1 and evaluated in Sections 3 and 4. As stated in Section 1.4, the project need or opportunity is to increase project robustness, resiliency, and reliability through minor design refinements. Specifically, the refinements described in this document would help control beach erosion and the landward retreat of the shoreline that would cause property and infrastructure damage. A range of alternatives to accomplish this are described in Section 2. Effects resulting from the proposed alternatives were evaluated and, where appropriate, environmental protection measures shall be implemented to balance the project need with all the stated public interest factors. For the reasons discussed in Sections 3 and 4, USACE concludes that the proposed design refinements are clearly in the public interest.

1.9 PERMITS, LICENSES, AND ENTITLEMENTS

Water quality certification has already been obtained for the existing project in the form of a joint coastal permit from the Florida Department of Environmental Protection (FDEP). A modification to this permit is being pursued to include the actions proposed as the preferred alternative. Additional information on prior permits, licenses, and entitlements are available in previously referenced environmental documents for the Federally authorized project discussed in Section 1.6.

2 ALTERNATIVES

This section describes the no-action alternative and the various action alternatives. Other reasonable alternatives were evaluated in the environmental documents discussed in Subsection 1.6 and are incorporated herein by reference. The Preferred Alternative was selected based on the information and analysis presented in the Affected Environment and Environmental Effects sections of this SEA.

2.1 DESCRIPTION OF ALTERNATIVES

In accordance with NEPA and its implementing regulations, USACE considered a reasonable range of alternative engineering design refinements, including a no-action alternative.

2.1.1 NO-ACTION ALTERNATIVE (STATUS QUO)

The authorized project would continue to be implemented over the period of Federal participation in accordance with existing authorities. Periodic renourishment of the project's existing design template typically occurs every 10 years. Renourishment could occur more frequently if a major storm event threatens infrastructure as a result of erosion and loss of the beach template.

2.1.2 ALTERNATIVES ELIMINATED FROM FURTHER CONSIDERATION

Alternatives eliminated from consideration included the following:

- *Wooden vehicle ramps* – determined to be more costly than other options, and would require a greater level of design. These structures are also typically less aesthetically pleasing compared to vegetated dunes, and repair costs would likely be more expensive than the other alternatives, both of which are concerns of the local sponsor.
- *Seawalls* – Seawalls used to close gaps in the dune were eliminated from further consideration because they would only provide inundation protection benefits, and they would also require a greater level of design.
- *Gates* – Gates to protect gaps in the existing dune would be designed to close during storm events; however, these were eliminated due to the frequent maintenance required to ensure that they are functioning properly when operated in marine environments.
- *Modifications at Storm Water Outfalls* – There are no outfall pipes that affect dunes in the project area; therefore, this alternative was eliminated from further consideration.

2.1.3 ACTION ALTERNATIVES

To develop action alternatives, USACE evaluated the performance of any existing dunes within the authorized project. This included the dunes' ability to reduce erosion and inundation

damages, elongate nourishment intervals, decrease nourishment volumes, and provide incidental environmental benefits. USACE analyzed implementing a number of engineering design refinements for this project, which are discussed in further detail in the following subsections.

The action alternatives described below describe various methods for incorporating dunes into the existing project. Note that the alternatives described below could be added as standalone design changes, or they could be implemented in combination with each other.

2.1.3.1 Alternative 1: Dune Incorporation

The Dune Incorporation alternative consists of incorporating a dune template as part of the project in future nourishment events. The dune construction template will be considered part of the project's construction template, and the volume of material to construct the dune will be considered part of the project's advanced fill volume. The authorized design template will not be changed by dune construction, nor will the authorized advanced fill volume associated with future periodic nourishments be changed. For future periodic nourishments, the same volume of advanced fill would be placed such that a portion of that volume would be allocated to the dune. Where existing dunes are incorporated as advanced fill, the total advanced fill volume will not change and the berm width will be reduced minimally to account for the volume placed in the dune. Sand sources evaluated as part of previous NEPA documents referenced in Subsection 1.6 would be used for this construction.

Figure 3 shows how the advanced fill placement on a typical nourishment project could be adapted to include a dune feature with the same total advanced fill volume. The resilience profile shown in Figure 4 theoretically demonstrates how a dune would increase project resilience based on the project's function being directly linked to the volume of sand available along the beach profile to maintain the authorized design template and protect upland development over time.

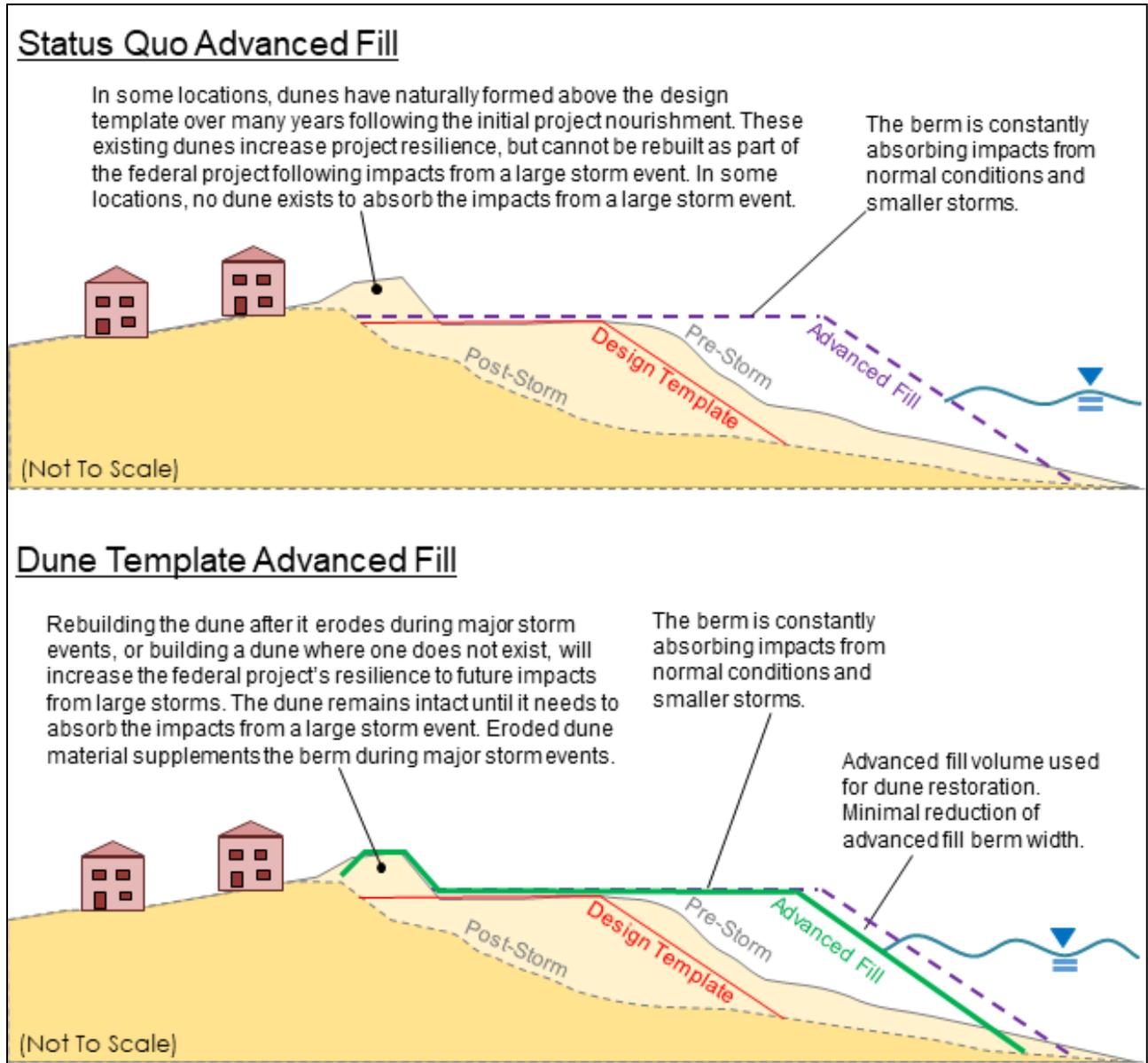


Figure 3. Adapted Advanced Fill Nourishment Template to include a Dune.

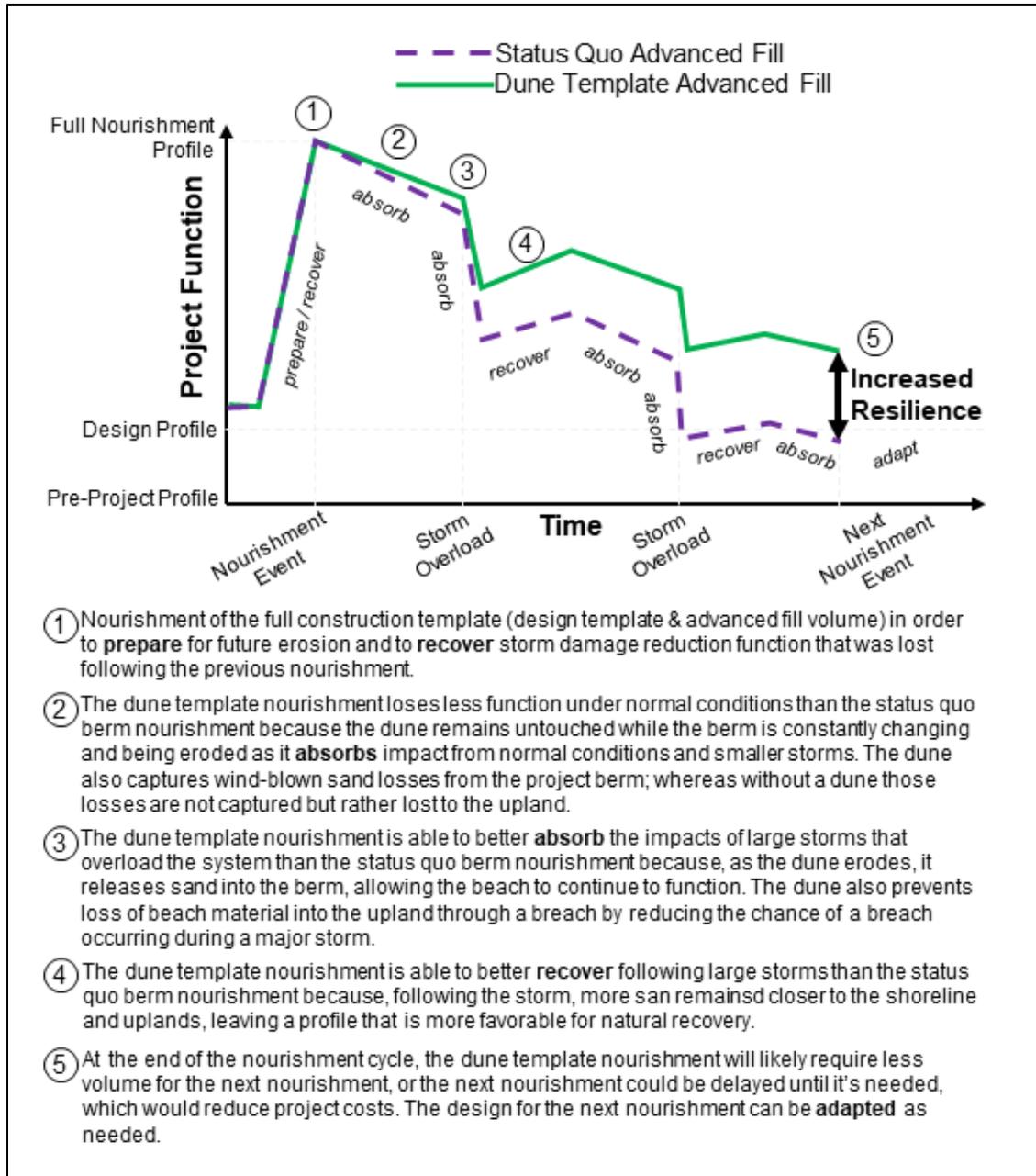


Figure 4. Resilience Profile Demonstrating How a Dune Contributes to Increased Resilience.

The dune construction template may adopt the dimensions of existing dunes, modify the dimensions of existing dunes, or add a new dune where dunes do not currently exist within the existing project footprint.

There are 19 areas with gaps in the dunes in the existing project footprint that are currently recommended to be closed with the proposed template and planted with native dune vegetation; however, only 10 of these are proposed to be closed at this time (see Table 1).

Remaining gaps in the dune feature may be closed in the future to improve resiliency and reduce the potential for storm damage to adjacent structures. Dunes that become eroded or eliminated following storm events (both newly constructed dunes or existing dunes) would be rebuilt to pre-storm conditions. Please see Appendix C for additional information on the screening of the various resiliency measures.

Table 1. Locations of gaps in the existing dunes along the project area.

No.	Location	Length of Gap (ft)	Structures or Sand	Gap Closed by Proposed Dune (Yes or No)?
1	R-13	200	Sand	No
2	R-14	220	Sand	No
3	R-14.5	90	Sand	No
4	R-17.2	150	Sand	Yes
5	R-20.4 (Manatee Public Beach)	1,000	Private concrete patio	Yes
6	R-21.8	100	Sand	No
7	R-22	100	Sand	Yes
8	R-23.2	150	Sand	No
9	R-24	70	Sand	Yes
10	R-24.7	60	Sand	Yes
11	R-24.9	75	Sand	Yes
12	R-25.4	80	Sand	Yes
13	R-26.3	225	Private concrete parking lot	Yes
14	R-27.1	100	Private concrete patio	No
15	R-28.3	150	Seawall	No
16	R-28.7	70	Sand	Yes
17	R-29.2	100	Sand	Yes
18	R-30.8	500	Sand	No
19	R-32.7	150	Sand	No
	Total	3,590		

* Highlighted rows indicate gaps that are currently recommended for closing. The “R” in each location description refers to the FDEP range monuments located along the Florida shoreline.

2.1.3.2 Alternative 2: Dune Vegetation

Planting dune vegetation helps to anchor sand dunes and promotes dune growth. The roots and stems of sea oats and other native coastal plants trap wind-blown sand. As the sand piles up around the plants, new roots develop on the recently buried stems while new stems emerge from the sand's surface. This traps even more sand and grows the dune. This alternative includes both planting dune vegetation on newly constructed dunes and on existing dunes that are not fully vegetated.

2.1.3.3 Alternative 3: Sand Fencing

An additional way to enhance dune growth is through the installation of sand fencing. Sand fencing is a relatively low-cost option that works similarly to dune vegetation to help support dune growth by trapping and collecting wind-blown sand. This alternative would involve placing sand fencing along the seaward side of any existing or constructed dunes to encourage growth.

2.1.3.4 Alternative 4: Vehicle Access Modifications

Vehicle access points that create gaps in the dunes are more susceptible to erosion and landward material losses that reduce project resilience. There are currently five vehicular access points in the Manatee County SPP, Anna Maria Island Segment area that could be modified to improve resilience. Their locations (both street address and approximate FDEP reference monument) are provided below:

1. 67th Street (R-14.3)
2. 46th Street (R-19)
3. Manatee Public Beach (R-20.5)
4. 30th Street (R-24)
5. 3rd Street South (R-33.1)

Proposed modifications to vehicle access points to increase resiliency include angling accesses, narrowing accesses, and converting accesses to pedestrian-only access. These are general recommendations, and do not constitute full designs. The specific designs for these recommendations may change during the pre-construction engineering and design phase based on the existing conditions at the time of design and on engineering judgment. See Appendix C for additional information on the specific locations of proposed modifications.

2.1.3.5 Alternative 5: Pedestrian Access Modifications

Pedestrian access modifications could include signage encouraging beachgoers to stay off dunes and to use designated access points, sand or rope fencing to keep people out of the dunes, or dune walkovers to allow beach access without affecting the dune. These measures prevent dune vegetation, and the dune itself, from being trampled and degraded by foot traffic that could harm the dune or reduce its functionality.

2.2 ISSUES AND BASIS FOR CHOICE

While all of the proposed action alternatives would increase project resilience, the Preferred Alternative was selected based on the potential for environmental effects and on an evaluation of the performance of existing dunes, including their ability to reduce erosion and inundation damages, to elongate nourishment intervals, to decrease nourishment volumes, and to provide incidental environmental benefits. As each of the modifications that are part of the preferred alternative could be implemented on their own, their effects are described separately throughout this SEA.

2.3 PREFERRED ALTERNATIVE

The Preferred Alternative includes dune incorporation, dune vegetation (for newly constructed dunes), vehicle access modifications, and pedestrian access modifications. Table 2 includes a description of the modifications.

Table 2. Design modifications recommended as the preferred alternative for the project.

Design Change	Summary of Recommendation
Dune Incorporation	Dune features would be incorporated into the project as appropriate. Dunes could be constructed as part of the project if existing dunes become eroded. Newly constructed dunes would be planted with appropriate vegetation.
Vehicle Access Modifications	Potential modifications for vehicle access points include measures such as angling accesses, narrowing accesses, and converting them to pedestrian-only access.
Pedestrian Access Modifications	Modifications could include signage, sand fencing, or rope fencing to protect the dunes, as needed.

2.4 COMPARISON OF ALTERNATIVES

Table 3 provides a summary of the environmental effects of the action alternatives considered compared to the no-action alternative based on the issues identified in Subsection 1.8.1. Section 4, Environmental Effects, contains more detailed discussions of potential effects associated with the proposed action.

Table 3. Summary of direct and indirect effects associated with the action and the "no action" alternatives.

ENVIRONMENTAL FACTOR	Dune Incorporation	Dune Vegetation	Sand Fencing	Vehicle Access Modifications	Pedestrian Access Modifications	No Action (Status Quo)
Vegetation	Temporary adverse effect to existing vegetation during construction; long-term increase in dune vegetation due to increase in dry dune habitat for vegetation to colonize	If implemented in combination with dune construction, the effect to vegetation resulting from construction would be shortened. Vegetation planted not in conjunction with dune construction would enhance dune vegetation and provide consistent habitat throughout the dune system.	Potential temporary adverse effect to existing vegetation during construction; long-term benefit through increased habitat for vegetation	Temporary adverse effect on existing vegetation during construction; long-term increase in dune vegetation due to increase in dry dune habitat for vegetation to colonize	Temporary adverse effect to existing vegetation during construction; long-term increase in dune vegetation due to increase in dry dune habitat for vegetation to colonize	While vegetation will naturally recruit with the addition of sand to the beach berm as part of the existing project, the vegetation would not be as consistent throughout the project area. Pedestrian traffic can also degrade vegetation.
Threatened and Endangered Species	Temporary adverse effect on nesting turtles and to shorebirds during construction; long-term benefit due to enhanced dune habitat for species	Temporary adverse effect on nesting turtles and to shorebirds during construction; long-term benefit due to enhanced dune habitat for species	Temporary adverse effect on nesting turtles and to shorebirds during construction; long-term benefit due to enhanced dune habitat for species; long-term potential for fencing to impede nesting and hatchling turtles	Temporary adverse effect on nesting turtles and to shorebirds during construction (as necessary); long-term benefit due to enhanced dune habitat for species	Temporary adverse effect on nesting turtles and to shorebirds during construction (as necessary); long-term benefit due to enhanced dune habitat for species	Temporary adverse effect on nesting sea turtles and protected shorebirds during construction (discussed in previous NEPA documents). No additional benefit to these species from added dune habitat.
Migratory Birds	Temporary adverse effect to shorebirds during	Temporary adverse effect to shorebirds during	Temporary adverse effect to shorebirds	Temporary adverse effect to shorebirds	Temporary adverse effect to shorebirds	Temporary adverse effect during

Section 2: Alternatives

ALTERNATIVE	Dune Incorporation	Dune Vegetation	Sand Fencing	Vehicle Access Modifications	Pedestrian Access Modifications	No Action (Status Quo)
ENVIRONMENTAL FACTOR						
	construction; long-term benefit due to enhanced dune habitat for species	construction (as necessary); long-term benefit due to enhanced dune habitat for species	during construction (as necessary); long-term benefit due to enhanced dune habitat for species	during construction (as necessary); long-term benefit due to enhanced dune habitat for species	during construction (as necessary); long-term benefit due to enhanced dune habitat for species	construction (discussed in previous NEPA documents). No additional benefit from added dune habitat.
Other Wildlife Resources	Temporary adverse effect to shorebirds during construction; long-term benefit due to enhanced dune habitat for species	Minor temporary adverse effect to shorebirds during construction (as necessary); long-term benefit due to enhanced dune habitat for species	Minor temporary adverse effect to shorebirds during construction (as necessary); long-term benefit due to enhanced dune habitat for species	Minor temporary adverse effect to shorebirds during construction (as necessary); long-term benefit due to enhanced dune habitat for species	Minor temporary adverse effect to shorebirds during construction (as necessary); long-term benefit due to enhanced dune habitat for species	Temporary adverse effect during construction (discussed in previous NEPA documents). No additional benefit from added dune habitat.
Cultural, Historic, and Archaeological Resources	No adverse effects to cultural, historic, or archaeological resources.	No adverse effects to cultural, historic, or archaeological resources.	No adverse effects to cultural, historic, or archaeological resources.	No adverse effects to cultural, historic, or archaeological resources.	No adverse effects to cultural, historic, or archaeological resources.	No adverse effects to cultural, historic, or archaeological resources.
Water Quality	No additional effect to water quality	Potential for beneficial effect to nearshore water quality through filtering of contaminants from upland sources	Potential for minor beneficial effect to nearshore water quality through expansion of vegetation that filters contaminants from upland sources	No effect to water quality	No effect to water quality	Effects are similar to those discussed in previous NEPA documents for dredging and beach placement.

ALTERNATIVE	Dune Incorporation	Dune Vegetation	Sand Fencing	Vehicle Access Modifications	Pedestrian Access Modifications	No Action (Status Quo)
ENVIRONMENTAL FACTOR						
Aesthetic Resources	Temporary adverse effect during construction and for a period following construction; potential for permanent effects to viewshed, which could be perceived as either beneficial or adverse	Minor temporary adverse effect during construction; generally beneficial long-term effect	Minor temporary adverse effect during construction; minor long-term effects due to presence of fence structures along the shoreline; long-term effect from increased dunes	Minor temporary adverse effect during construction	Minor temporary adverse effect during construction	Effects are similar to those discussed in previous NEPA documents for dredging and beach placement.
Recreation Resources	Minor temporary adverse effect during construction; long term minor adverse effect to available beach berm available for recreating	Minor temporary adverse effect during construction	Minor temporary adverse effect during construction	Minor temporary adverse effect during construction	Minor temporary adverse effect during construction	Effects are similar to those discussed in previous NEPA documents for dredging and beach placement.
Air Quality	Minor temporary adverse effect during construction	No effect	No effect if constructed without the use of heavy machinery; minor temporary adverse effect during construction if heavy machinery were used	Minor temporary adverse effect during construction	No effect if constructed without the use of heavy machinery; minor temporary adverse effect during construction if heavy machinery were used	Effects are similar to those discussed in previous NEPA documents for dredging and beach placement

ALTERNATIVE	Dune Incorporation	Dune Vegetation	Sand Fencing	Vehicle Access Modifications	Pedestrian Access Modifications	No Action (Status Quo)
ENVIRONMENTAL FACTOR						
Noise	Minor temporary adverse effect during construction	No effect	No effect	Minor temporary adverse effect during construction; potential beneficial long-term effect through decreased vehicular traffic in areas where vehicle access points are closed	Minor temporary adverse effect during construction	Effects are similar to those discussed in previous NEPA documents for dredging and beach placement
Economic and Social Effects	Dunes would add resiliency to the existing project and reduce costs from damaged infrastructure following coastal storms.	Vegetation would stabilize the dune system, providing resiliency to the project and resulting in higher net benefits to the project in the form of storm damage reduction benefits	Beneficial effects through growth of the dune system, providing resiliency to the project and resulting in higher net benefits to the project in the form of storm damage reduction benefits	Beneficial effects through growth of the dune system as the number of access points and direct damage to the existing dune system would be reduced	Beneficial effects through growth of the dune system as the number of access points and direct damage to the existing dune system would be reduced	Effect would be similar to those discussed in previous NEPA documents for the existing project
Native Americans	No adverse effects to Native American lands or resources	No adverse effects to Native American lands or resources	No adverse effects to Native American lands or resources	No adverse effects to Native American lands or resources	No adverse effects to Native American lands or resources	No adverse effects to Native American lands or resources

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 be affected by the alternatives if they were implemented. This section, in conjunction with the description of the "no-action" alternative, forms the baseline conditions for determining the environmental effects of the proposed action and reasonable alternatives.

3.1 GENERAL PHYSICAL FEATURES

The Manatee County, Florida SPP Anna Maria Island Segment (R-12 to R-33 with a taper to R-36) has large portions of naturally occurring, vegetated dunes along most of the project. From R-12 to R-27, the vegetated portion of the beach is 40 to 70 ft wide. South of R-27, the vegetated dunes are narrower (30-50 ft wide). The dune crest along the length of the project is typically 10 to 15 ft wide at an elevation of 8 ft NAVD88.

Throughout the project footprint, there are scattered areas where dunes have not formed; therefore, there are currently 19 gaps in the dune system. The largest gap is approximately 1,000 ft wide and is located at Manatee Public Beach (R-20 to R-21). The remaining 18 gaps in dunes are each less than 500 ft wide.

3.2 VEGETATION

Dune vegetation is well established along the existing dune in the project area. The coastal strand dunes in the project area are typically vegetated with sea oats (*Uniola paniculata*), dune grass (*Ammophila breviligulata*), sea grape (*Coccoloba uvifera*), sea rocket (*Cakile edentula*), cacti (*Opuntia compressa*), croton (*Croton punctatus*), pennywort (*Hydrocotyle bonariensis*), beach elder (*Iva imbricate*), sea purslane (*Sesuvium portulacastrum*), wild bean (*Strophostyles helvola*), and morning glory (*Ipomea purpurea*); see Figure 5 and Figure 6). Additional information on dune vegetation has been described in prior NEPA documents for the Manatee County, Florida SPP, and this information is incorporated herein by reference.

Section 3: Affected Environment



Figure 5. Example of typical dune vegetation in the project area.



Figure 6. Example of typical dune vegetation in the project area.

Section 3: Affected Environment

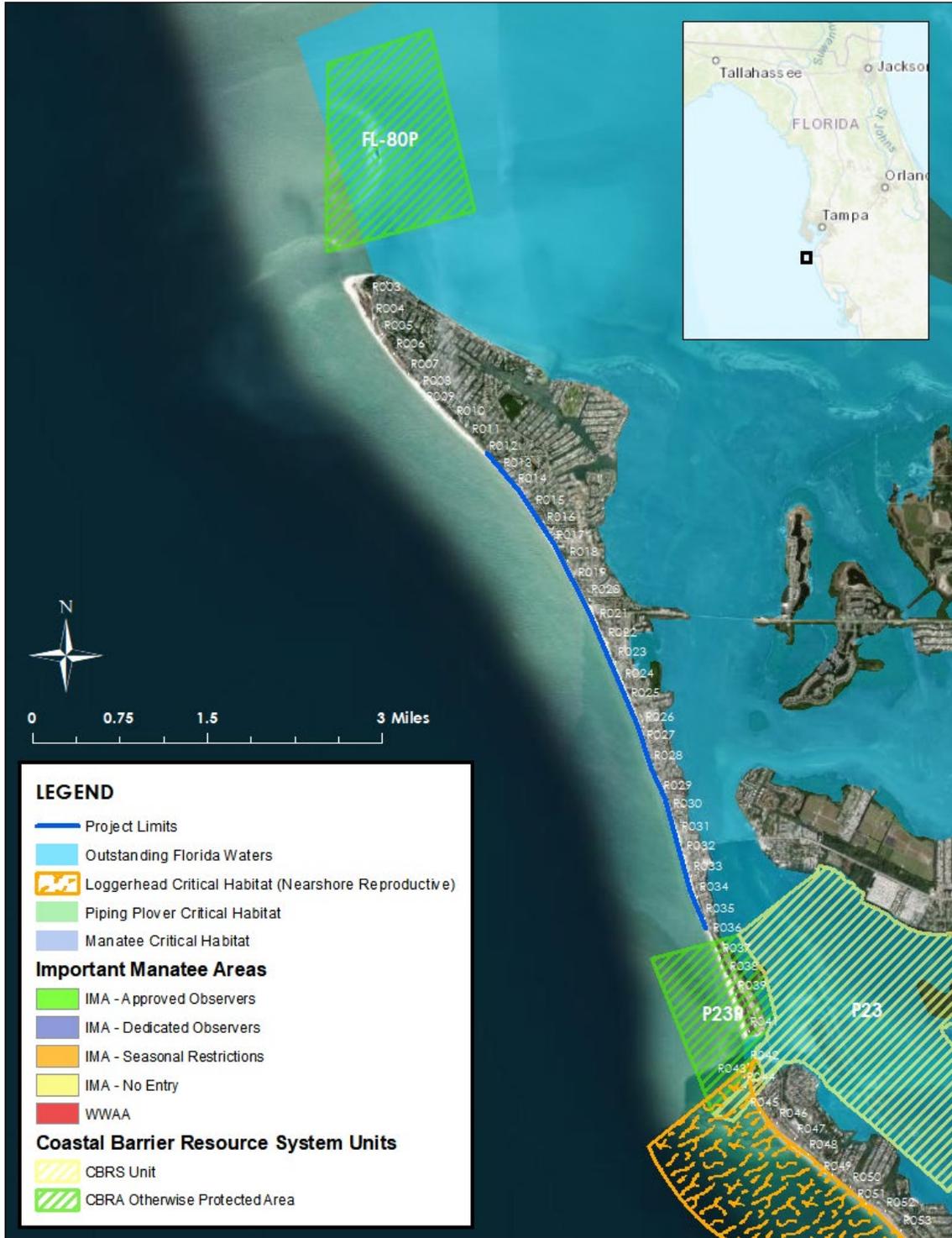


Figure 7. Map of resources in the project area.

3.3 THREATENED AND ENDANGERED SPECIES

3.3.1 SEA TURTLES

Loggerhead, green, and Kemp’s ridley sea turtles are known to nest in the project area; however, no Kemp’s ridley nests were observed in the last five years of monitoring. The affected environment for the proposed action is limited to the nesting beach and dry berm above the mean high water line; sea turtle habitat below the mean high water line is discussed in previous NEPA documents, which are incorporated herein by reference. In addition to these species, leatherback and hawksbill turtles are also known to occur in coastal waters off the Gulf Coast of Florida. Sea turtle nesting data have been described in prior NEPA documents, and current data are included in Table 4 from 2015 through 2019 for the project.

Table 4. Sea turtle nesting data for Anna Maria Island from 2015 through 2019 (Source: FWC/FWRI Statewide Nesting Beach Survey program as of 16 July 2020).

Year	Start Boundary	End Boundary	Length (km)	Loggerhead Nests	Green Turtle Nests
2015	Bimini Inlet (27.52717, -82.71978)	Longboat Pass (27.44445, -82.69043)	11.7	353	3
2016	Bimini Inlet (27.52717, -82.71978)	Longboat Pass (27.44445, -82.69043)	11.7	434	1
2017	Bimini Inlet (27.52717, -82.71978)	Longboat Pass (27.44445, -82.69043)	11.7	483	5
2018	Bimini Inlet (27.52717, -82.71978)	Longboat Pass (27.44445, -82.69043)	11.7	534	0
2019	Bimini Inlet (27.52717, -82.71978)	Longboat Pass (27.44445, -82.69043)	11.7	534	9

All sea turtles found in state and Federal waters are Federally protected under the Endangered Species Act. A summary of their status under the Act is provided in Table 5.

The U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration (NOAA) designated critical habitat to support the recovery of the threatened Northwest Atlantic Ocean population of loggerhead sea turtles in 2014. There is no critical habitat in the project area; the closest designated critical habitat is at Longboat Key south of the project area, which is designated as critical nearshore reproductive habitat (see Figure 7).

Table 5. Sea turtle species that may nest along the Gulf Coast of Anna Maria Island, Manatee County, Florida. Species are listed in order of relative abundance.

Common and Scientific Names	Status ^a	Life Stages Present	Abundance within the Project Area
Loggerhead sea turtle (<i>Caretta caretta</i>)	T	Adults, subadults, juveniles, and hatchlings	Abundant
Green sea turtle (<i>Chelonia mydas</i>)	T	Adults, subadults, juveniles, and hatchlings	Common
Kemp’s ridley sea turtle (<i>Lepidochelys kempii</i>)	E	Adults, subadults, juveniles, and hatchlings	Rare

^a Status: E = endangered, T = threatened under the Endangered Species Act of 1973.

3.3.2 PIPING PLOVER

The piping plover (*Charadrius melodus*) is a small shorebird that occurs along the Gulf Coast of Florida during spring and fall migrations. Wintering habitats are important to piping plover as foraging habitats to gain sufficient energy stores to fuel their long migrations. Piping plover forage on marine worms, crustaceans, and other marine invertebrates along beaches and coastal systems. Optimal habitat is sustained by unimpeded coastal processes where features such as emergent nearshore sand bars, washover fans, and shoals can form and migrate. The highest frequency of piping plover observance in the project area occurs in September and October, when their presence stabilizes over the winter months through April. Piping plover are typically not present in the project area during the months of May through early August (see Figure 8).

The piping plover is listed as a threatened species under the Endangered Species Act. USFWS designated critical habitat for this species, but it does not overlap with the project area. The closest critical habitat in the region is located at Egmont Key (see Figure 7). Further, the project area is in the center of Anna Maria Island, which does not exhibit the optimal habitat features described above.

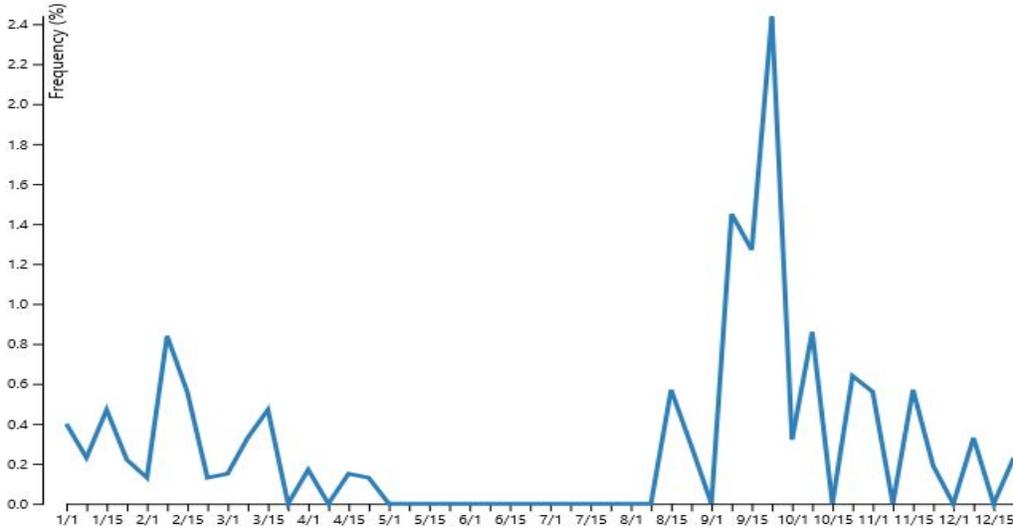


Figure 8. Monthly piping plover frequency data, 1900-2020 (Source: eBird online database, July 2020).

3.3.3 RED KNOT

The red knot (*Caladris canutus rufa*) is a small shorebird that is federally threatened. Similar to the piping plover, the red knot utilize the Gulf Coast of Florida during spring and fall migrations. Red knot occurrences vary slightly from those observed for the piping plover. While peak usage also occurs in September and October, red knot can be found sporadically in the region throughout the year (see Figure 9). Forage and optimal habitat features are similar to the piping plover.

While USFWS has not yet designated critical habitat for this species, the project area does not contain the optimal habitat features described above.

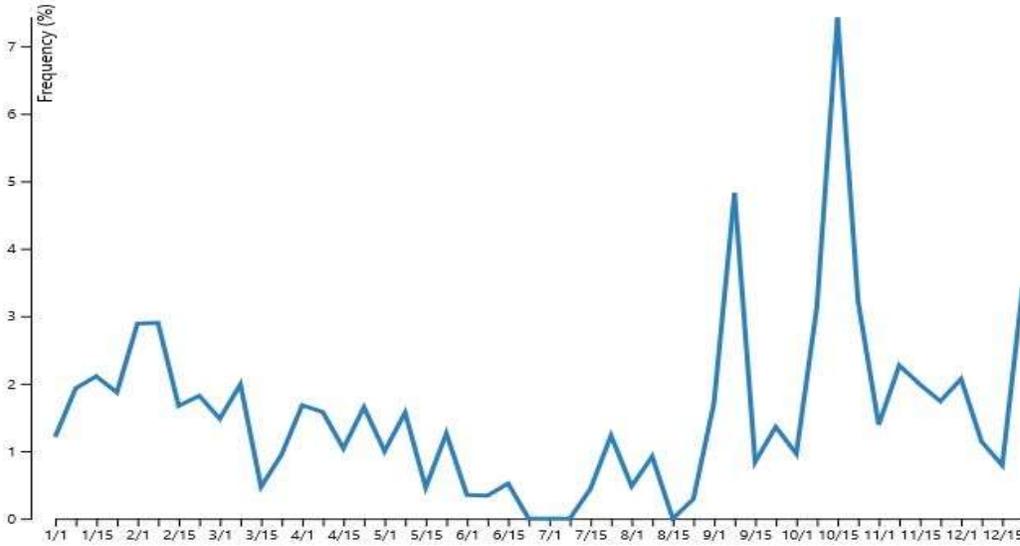


Figure 9. Monthly rufa red knot frequency data for 1900-2020 (Source: eBird online database, July 2020).

3.4 MIGRATORY BIRDS

Migratory birds have been described in prior NEPA documents for this project, and this information is incorporated herein by reference. Numerous bird species may nest immediately adjacent to dunes or within dune systems, and dune habitat is important for shorebird foraging and roosting.

3.5 OTHER WILDLIFE RESOURCES

Other wildlife resources are present in the project area, including fisheries resources associated with the sand source and nearshore placement area, crustaceans, reptiles, and shorebirds. These resources have been described in prior NEPA documents, and this information is incorporated herein by reference (see Section 1.6).

3.6 CULTURAL, HISTORIC, AND ARCHAEOLOGICAL RESOURCES

Cultural, historic, and archaeological resources have been described in prior NEPA documents for the project and are incorporated herein by reference (see Section 1.6). Few of these resources have been documented near the footprint of the alternatives; the project footprint is generally seaward of the erosion control line, which limits the potential direct effect any resource, as this was mean high water at the start of the Shore Protection Project. Three historic structures, one historic building complex, and one historic road are recorded within 50 meters of the alternatives.

The historic structures are two private residences and a condominium. The oldest, MA1698, is a rectangular building of stucco and wood constructed in 1935. Though the opinion offered by the recorder of the site file form from the Anna Maria Island Preservation Trust is that this structure

is eligible for the National Register of Historic Places (NRHP), subsequent review by State Historic Preservation Officer (SHPO) determined this structure is ineligible both individually or as part of a district. The residence MA1366 was constructed in 1952 and is a rectangular concrete block and stucco building. The site file notes that a review of the structure by the Florida Division of Historical Resources found this resource ineligible for inclusion in the NRHP individually or as part of a district. Finally, MA2097 is the Martinique North Condominium, constructed in 1971. This is a seven-story concrete and stucco building that is part of a larger complex. Though the recorder of the site file form notes it is of common design with no distinguishing architectural details and not associated with significant events or individuals, SHPO declined to concur and found there was insufficient information to determine if the structure was eligible for listing in the NRHP.

The historic building complex located within 50 meters of the project alternatives is recorded as MA2133. This is a complex of four rectangular masonry buildings constructed in 1968. The form and materials are a common type, and SHPO determined this complex is not eligible for listing in the NRHP. The historic road is Cortez Road, MA1844, which connects Anna Maria Island to the mainland. Though portions of Cortez Road date to at least the nineteenth century, the segment on Anna Maria island near the proposed alternatives has been repaved, realigned, and otherwise lacks integrity. SHPO determined this resource is not eligible for listing on the NRHP. Not recorded in the FMSF, there is an “Old Town” local historic district near the southern end of the alternatives. This cultural resource is important for the identity and culture of Anna Maria Island, but has never been formally recorded.

The placement of sand in the footprint of the proposed alternatives in 1992, 2002, 2005, 2011, 2013, and 2020 limits the potential for any archaeological resources in this area.

3.7 COASTAL BARRIER RESOURCES

There are several areas protected by the Coastal Barrier Resources Act located near or adjacent to the project area; however, the Manatee County, FL SPP – Anna Maria Island placement area does not overlap these units (see Figure 7 and Table 6).

Table 6. Coastal Barrier Resources System (CBRS) system units and otherwise protected areas located in the project area.

Unit Number	Unit Name	Unit Type
FL-81	Egmont Key	System Unit
FL-81P	Egmont Key	Otherwise Protected Area
FL-80P	Passage Key	System Unit
P23P	Longboat Key	Otherwise Protected Area
P23	Longboat Key	System Unit

3.8 WATER QUALITY

Water quality has been described in prior NEPA documents for the project, which are incorporated herein by reference (Section 1.6). Water quality conditions have not changed within the project area since documented in previous NEPA documents. Waters protected under state law as Outstanding Florida Waters are shown on Figure 7.

3.9 AESTHETIC RESOURCES

Aesthetic resources have been described in prior NEPA documents for the project, which are incorporated herein by reference (Section 1.6).

3.10 RECREATION RESOURCES

Recreation resources have been described in prior NEPA documents for the project, which are incorporated herein by reference (Section 1.6).

3.11 AIR QUALITY

Air quality has been described in prior NEPA documents for the project, which are incorporated herein by reference (Section 1.6).

3.12 NOISE

Existing ambient noise levels have been described in prior NEPA documents for the project, which are incorporated herein by reference (Section 1.6).

3.13 ECONOMIC AND SOCIAL EFFECTS

Economic conditions in the project area have been described in prior NEPA documents for the project, which are incorporated herein by reference (Section 1.6).

3.14 NATIVE AMERICANS

There are no lands belonging to Native Americans within the Federal authorized project areas, though the project alternatives fall within the area of interest of the Miccosukee Tribe of Indians of Florida, Seminole Nation of Oklahoma, Seminole Tribe of Florida, and Thlopthlocco Tribal Town.

4 ENVIRONMENTAL EFFECTS

This section is the scientific and analytic basis for the comparisons of the alternatives. See Table 3 in Section 2.4 for a summary of effects. The following includes anticipated changes to the existing environment including direct, indirect, and cumulative effects. Information on the borrow area and on other effects associated with sediment placement on the berm are included in the 2000 and 2013 EAs referenced in Section 1.6, and will not be discussed in detail in this report.

As discussed in Section 2.3, the Preferred Alternative is a combination of Alternatives 1, 4, and 5 based on the analysis described below:

Design Change	Summary of Recommendation
Alternative 1: Dune Incorporation	Dune features would be incorporated into the project as appropriate. Dunes could be constructed as part of the project if existing dunes become eroded.
Alternative 2: Dune Vegetation	Newly constructed dunes would be vegetated as appropriate.
Alternative 4: Vehicle Access Modifications	Potential modifications for vehicle access points include measures such as angling accesses, narrowing accesses, and converting them to pedestrian-only access.
Alternative 5: Pedestrian Access Modifications	Modifications could include signage, sand fencing, or rope fencing to protect the dunes, as needed.

Vegetation will be planted on the newly constructed dune as part of Alternative 1, and the effects described for Alternative 2: Vegetation are applicable for this action as well.

4.1 GENERAL ENVIRONMENTAL EFFECTS

4.1.1 ALTERNATIVE 1: DUNE INCORPORATION (PREFERRED ALTERNATIVE)

The presence of dunes is essential if a beach is to remain stable and able to accommodate the stress from unpredictable storms and extreme conditions of wind, wave, and elevated sea surfaces. Dunes maintain a sand repository that, during storms, provides sacrificial sand before structures would be damaged. The dune system provides a measure of public safety and property protection. Proper vegetation on dunes increases sand-erosion resistance by binding the sand together via extensive root masses penetrating deep into the sand. Further, such vegetation promotes dune growth through its sand-trapping action when significant wind action transports substantial quantities of sand. This measure would include placement of beach-compatible material from upland, offshore, or other sources, in a dune feature adjacent to any existing dune.

4.1.2 ALTERNATIVE 2: DUNE VEGETATION (PREFERRED ALTERNATIVE)

Vegetated would be planted following dune construction. Additionally, this alternative could include vegetating existing dunes in the project area that have become unvegetated due to storm events or effects from pedestrian or vehicle activity. Planting dune vegetation will enhance the natural ability of the dune system to accrete and hold the sand in place.

4.1.3 ALTERNATIVE 3: SAND FENCING

The installation of sand fencing helps to support sand dune growth by trapping and collecting wind-driven sand, providing the general benefits described above associated with coastal dunes. Sand fencing can become flying projectiles during storm events, and it can contribute to litter in the coastal environment following storm events.

4.1.4 ALTERNATIVE 4: VEHICLE ACCESS MODIFICATIONS (PREFERRED ALTERNATIVE)

Vehicle access modifications could include changing the angle at which the vehicle access cuts through the dune so that, during a storm, the gap through the dune would erode in on itself. Mats or ramps could be used to allow vehicles to drive over the dune and prevent the degradation of the dunes in these areas. Sand stockpile areas could be designated for filling in the dune gaps when a storm is approaching.

4.1.5 ALTERNATIVE 5: PEDESTRIAN ACCESS MODIFICATIONS (PREFERRED ALTERNATIVE)

Pedestrian access modifications could include signage encouraging beachgoers to stay off dunes and to use designated access points, rope fencing to keep people out of the dunes, or constructing dune walkovers to allow beach access without effecting the dune. These measures prevent dune vegetation and the dune itself from being trampled and degraded by foot traffic, which could reduce the function of the dune.

4.1.6 NO-ACTION ALTERNATIVE (STATUS QUO)

The existing dune system would not be modified and a new dune system would not be constructed. Otherwise, the effects of the no-action alternative are the same as those described for the preferred alternatives in prior NEPA documents specific to the existing project.

4.2 DUNE VEGETATION

Proper vegetation on dunes increases sand erosion resistance by binding the sand together via extensive root masses penetrating deep into the sand. Further, such vegetation promotes dune growth through its sand-trapping action when significant wind action transports substantial quantities of sand.

4.2.1 ALTERNATIVE 1: DUNE INCORPORATION (PREFERRED ALTERNATIVE)

Although temporary effects to existing dune vegetation may occur during construction, dune construction on its own would expand the suitable habitat available for dune vegetation. A limited amount of natural recruitment is expected due to spread of dune vegetation by rhizome or seed.

4.2.2 ALTERNATIVE 2: DUNE VEGETATION (PREFERRED ALTERNATIVE)

Vegetation would be planted as needed on existing dunes, and it would be planted following the placement of dune material as needed. Planted vegetation would expand by rhizome or seed, and would result in a fully vegetated dune system. A limited amount of natural recruitment is expected. Effects of this alternative are anticipated to be beneficial; no adverse effects to vegetation are anticipated.

4.2.3 ALTERNATIVE 3: SAND FENCING

Sand fencing would contribute to the long-term growth of the dune system, which would expand the habitat available for the natural recruitment of dune vegetation. Expansion of dune vegetation naturally through sand accretion following the placement of sand fencing would happen gradually over several seasons if the fencing remains in place. Sand fencing would have a largely beneficial effect on dune vegetation.

4.2.4 ALTERNATIVE 4: VEHICLE ACCESS MODIFICATIONS (PREFERRED ALTERNATIVE)

There will be no effect to dune vegetation due to vehicle access modifications. Sand stockpile areas which may be designated for filling in the dune gaps when a storm is approaching will not be placed onto the dune vegetation.

4.2.5 ALTERNATIVE 5: PEDESTRIAN ACCESS MODIFICATIONS (PREFERRED ALTERNATIVE)

There will be a beneficial effect on dune vegetation as a result of pedestrian access modifications. Dune walkovers, rope fencing, and signage will prevent the trampling of existing dune vegetation and encourage its growth.

4.2.6 NO-ACTION ALTERNATIVE (STATUS QUO)

While dunes are accreting naturally in the project area due to the healthy adjacent berm, the extent of dunes in some locations in the project area remains limited. Sand placement as part of the existing Manatee County, FL SPP would continue to occur in the No Action Alternative, and the current rate of dune growth would continue. All other effects of the no-action alternative

are described as the preferred alternatives in prior NEPA documents specific to the existing project.

4.3 THREATENED AND ENDANGERED SPECIES

The USACE has determined that placement of sand on the Federally authorized projects may affect nesting sea turtles and may affect, but is not likely to adversely affect, the piping plover and the red knot. All placement activities would be performed in compliance with the terms and conditions of the Statewide Programmatic Biological Opinion (2015) and the Programmatic Piping Plover Biological Opinion (2013) issued by the U.S. Fish and Wildlife Service (USFWS). The USACE final determination relative to project effects as well as the need for reasonable and prudent measures is subject to consultation with the USFWS.

4.3.1 ALTERNATIVE 1: DUNE INCORPORATION (PREFERRED ALTERNATIVE)

Sea turtles: The placement of sand into a dune system may adversely affect nesting sea turtles during construction due to the presence of construction equipment and additional lighting. These temporary effects will be minimized through the implementation of monitoring procedures. If construction occurs during the sea turtle nesting season, nests will be marked and avoided. If nests are not avoidable, they will be relocated to an area outside of the construction site. Compatibility of off-shore borrow areas with the native beach is one of the requirements of the 2015 USFWS Statewide Programmatic Biological Opinion (SPBO).

The long-term effect of dune construction is expected to be beneficial to sea turtles. Beachfront lighting is a deterrent for sea turtles nesting on the beach. Dunes help to block light from adjacent infrastructure that can be detrimental to nesting and hatchling turtles. Dunes are especially important for green turtles that use the change in slope at the dune toe as a cue to nest.

Piping plover and red knot: The placement of sand into a dune system may affect, but is not likely to adversely affect, the piping plover and red knot. Effects may include the disturbance of normal activities such as feeding and roosting during construction; degradation of wintering habitat or habitat used during migration by altering the natural sediment composition; and depressing the invertebrate base in some areas. For eroded beaches, sand placement may also have a beneficial effect on the habitat's ability to support the plover and the knot. Placement activities for a dune system would be performed in compliance with biological opinions issued by the USFWS, and this includes the use of compatible fill material that has been evaluated in prior NEPA documents.

4.3.2 ALTERNATIVE 2: DUNE VEGETATION (PREFERRED ALTERNATIVE)

There would be minimal effect to threatened and endangered species planting vegetation in already constructed dunes. Vegetation would be planted during daylight hours, and would have similar beneficial effects in the long term to sea turtles, piping plover, and red knot due to the increase in habitat and the ability to block artificial light.

4.3.3 ALTERNATIVE 3: SAND FENCING

Sand fencing could have an adverse effect on sea turtles as they can block access to nesting sites for turtles nesting higher in the dune system. Temporary effects may also occur during construction activities through the unavailability of the habitat for foraging and roosting by piping plover and red knot. There is an opportunity for long-term benefits in preserving the beach habitat through the use of sand fencing.

Other effects to threatened and endangered species will be minimal as a result of the installation of sand fencing to help support sand dune growth by trapping and collecting wind-driven sand.

4.3.4 ALTERNATIVE 4: VEHICLE ACCESS MODIFICATIONS (PREFERRED ALTERNATIVE)

Effects to threatened and endangered species as a result of vehicle access modifications will be minimal. Usage of these vehicle access points will be limited to those agencies that need access to the beach area (e.g., public works).

Minimal effects to piping plover and red knot would occur as a result of vehicle access modifications.

4.3.5 ALTERNATIVE 5: PEDESTRIAN ACCESS MODIFICATIONS (PREFERRED ALTERNATIVE)

Effects to threatened and endangered species as a result of pedestrian access modifications will be minimal. Signage, rope fencing, and other measures would be sited in a manner that would avoid the signs from being an impediment to nesting and hatchling turtles. New dune walkovers can also be an obstacle for nesting sea turtles, and an increase in foot traffic through these access points during nighttime hours may deter sea turtles from nesting in these areas. However, the benefit of these access points is that pedestrians will have more localized areas to access the beach instead of walking onto the beach from unspecified locations.

Minimal effects to piping plover and red knot would occur as a result of pedestrian access modifications.

4.3.6 NO-ACTION ALTERNATIVE (STATUS QUO)

There would be less habitat for threatened and endangered species if the proposed dune system were not constructed or modified. Otherwise, the effects of the no-action alternative are the same as those described for the preferred alternatives in prior NEPA documents specific to the existing project.

4.4 MIGRATORY BIRDS

The placement of sand for a dune system would result in minor short-term adverse effects on migratory birds. Appropriate monitoring and protection measures would be required during the nesting season to ensure that construction activities remain compliant with the Migratory Bird Treaty Act and do not result in the destruction of eggs, chicks, or adult birds. Long-term beneficial effects on migratory birds would be expected as a result of an expanded dune system.

During the placement of sand on the beach there may be some interruption of foraging and resting activities for shorebirds that utilize the project area. This effect would be short-term and limited to the immediate area of disposal and time of construction. There would be sufficient beach area north and south of the renourishment sites that can be used by the displaced birds while construction takes place.

4.4.1 ALTERNATIVE 1: DUNE INCORPORATION (PREFERRED ALTERNATIVE)

Effects to migratory birds during dune construction with planting of vegetation will be minimal and limited to during this construction period. Management measures like dune construction with vegetation is an opportunity for long-term benefits in preserving the beach habitat for migratory shorebirds.

4.4.2 ALTERNATIVE 2: DUNE VEGETATION (PREFERRED ALTERNATIVE)

Effects to migratory birds during planting of vegetation will be minimal and limited to the planting activity. Management measures like planting of vegetation is an opportunity for long-term benefits in preserving the beach habitat for migratory shorebirds.

4.4.3 ALTERNATIVE 3: SAND FENCING

Effects to migratory birds during construction of sand fencing will be minimal and limited to the construction period.

4.4.4 ALTERNATIVE 4: VEHICLE ACCESS MODIFICATIONS (PREFERRED ALTERNATIVE)

Effects to migratory birds during construction of vehicle access points will be minimal and limited to during this construction period.

4.4.5 ALTERNATIVE 5: PEDESTRIAN ACCESS MODIFICATIONS (PREFERRED ALTERNATIVE)

Effects to migratory birds during construction of pedestrian access points will be minimal and limited to during this construction period.

4.4.6 NO-ACTION ALTERNATIVE (STATUS QUO)

There would be less habitat for migratory bird species if the proposed dune system were not constructed or modified. Otherwise, the effects of the no-action alternative are the same as those described for the preferred alternatives in prior NEPA documents specific to the existing project.

4.5 OTHER WILDLIFE RESOURCES

The placement of sand for the dune system would result in minor short-term effects on other wildlife resources. Sand placement activities would result in sedimentation and temporary turbidity which would affect macroinvertebrates (e.g., arthropods [sand fleas] and mollusks [clams]) that inhabit the beach. Recovery should occur in phase with normal seasonal recruitment patterns documented for the project area (Lacharmois et al).

Nelson (1989) reviewed the literature on the effects of beach nourishment projects on sand beach fauna and concluded that minimal biological effects resulted from beach renourishment. Nelson reviewed several studies on the most common beach invertebrates of the southeastern U.S., including the mole crab (*Emerita talpoida*), the surf clam, (*Donax sp.*) and the ghost crab (*Ocypode quadrata*). None of the studies cited by Nelson (1989) showed significant or lasting effects to any of the above species resulting from beach nourishment. Hackney et al. (1996) provide a more recent review of the effects of beach restoration projects on beach infauna in the southeastern U.S. They also reviewed studies on the above species and agree with the conclusions set forth by Nelson (1989), with the suggestion that construction should take place in winter months to minimize potential effects, and that the sand used should be a close match to native beach sand. In review of past studies, there was a considerable short-term reduction in the abundances of mole crabs, surf clams, and ghost crabs attributable to direct burial. Recruitment and immigration were generally sufficient to re-establish populations within one year of construction. No long-term adverse effects are anticipated to the intertidal macroinfaunal community due to placement activities (Deis et al. 1992, Nelson 1985, Gorzelany 1983).

4.5.1 ALTERNATIVE 1: DUNE INCORPORATION (PREFERRED ALTERNATIVE)

Effects to other wildlife resources during construction of dunes and planting of vegetation will be minimal. Re-establishment of populations is anticipated within one year of construction. Management measures like dune construction with planting of vegetation is an opportunity for long-term benefits in preserving the beach habitat and decreasing threats for wildlife resources.

4.5.2 ALTERNATIVE 2: DUNE VEGETATION (PREFERRED ALTERNATIVE)

Effects to other wildlife resources during the planting of vegetation only will be minimal. Re-establishment of populations is anticipated within one year of construction. Management

measures like vegetation planting on the dunes is an opportunity for long-term benefits in preserving the beach habitat and decreasing threats for wildlife resources.

4.5.3 ALTERNATIVE 3: SAND FENCING

Effects to other wildlife resources during construction of sand fencing will be minimal. Management measures like sand fencing is an opportunity for long-term benefits in preserving the beach habitat and decreasing threats to wildlife resources.

4.5.4 ALTERNATIVE 4: VEHICLE ACCESS MODIFICATIONS (PREFERRED ALTERNATIVE)

Effects to other wildlife resources during construction of vehicle access points will be minimal. Re-establishment of populations is anticipated within one year of construction.

4.5.5 ALTERNATIVE 5: PEDESTRIAN ACCESS MODIFICATIONS (PREFERRED ALTERNATIVE)

Effects to other wildlife resources during construction of pedestrian access points will be minimal. Re-establishment of populations is anticipated within one year of construction.

4.5.6 NO-ACTION ALTERNATIVE (STATUS QUO)

There would be less potential habitat for other wildlife resources if the proposed dune system were not constructed or modified. Otherwise, the effects of the no-action alternative are similar to those described for the preferred alternatives in prior NEPA documents specific to the existing project.

4.6 CULTURAL, HISTORIC, AND ARCHAEOLOGICAL RESOURCES

The incorporation of the dunes into the Federal shore protection project will not result in adverse effects to cultural, historic, and archaeological resources. The incorporation of dunes into the existing shoreline protection project will enhance the existing protection of the historic structures and building complexes, as well as any unknown and unrecorded resources. The existing dunes have built-up over the life of the project, protecting the underlying archaeological sites and historic district. The current extent of the shoreline is a product of beach nourishment, extending the shoreline out approximately 50 meters since 1992. The repeated nourishment limits any potential effects to archaeological resources, as the footprints of the project alternatives fall within an area of fill and disturbance.

The projected benefits of this project would protect cultural resources on the landward side of the dunes from erosion and wave attack. The potential increased resiliency of the shoreline may provide an additional benefit by requiring fewer sand borrowing events, reducing the potential to affect cultural resources by dredging or sand mining. By matching the existing and historic

dune levels in the shoreline protection project, there is no significant change to the viewshed. USACE determined the measures of the preferred alternative posed no adverse effect on historic properties and consulted on that finding with the certified local government of Manatee County, the Florida SHPO, the Miccosukee Tribe of Indians of Florida, the Seminole Nation of Oklahoma, the Seminole Tribe of Florida, and Thlopthlocco Tribal Town by letter on 30 June 2020. The Seminole Tribe of Florida provided a letter with no objections to the project on 21 July 2020. All other parties declined to comment. Pertinent correspondence is in Appendix B.

4.6.1 ALTERNATIVE 1: DUNE INCORPORATION (PREFERRED ALTERNATIVE)

This alternative has no adverse effects to cultural, historic, and archaeological resources.

4.6.2 ALTERNATIVE 2: DUNE VEGETATION (PREFERRED ALTERNATIVE)

This alternative has no adverse effects to cultural, historic, and archaeological resources.

4.6.3 ALTERNATIVE 3: SAND FENCING

This alternative has no adverse effects to cultural, historic, and archaeological resources

4.6.4 ALTERNATIVE 4: VEHICLE ACCESS MODIFICATIONS (PREFERRED ALTERNATIVE)

This alternative has no adverse effects to cultural, historic, and archaeological resources.

4.6.5 ALTERNATIVE 5: PEDESTRIAN ACCESS MODIFICATIONS (PREFERRED ALTERNATIVE)

This alternative has no adverse effects to cultural, historic, and archaeological resources.

4.6.6 NO-ACTION ALTERNATIVE (STATUS QUO)

There would be no effect to cultural, historic, and archaeological resources if the proposed dune system were not constructed. The effects determination for the no-action alternative (which includes beach placement as part of the existing shore protection project) was described as the preferred alternatives in previous NEPA documents referenced in Section 1.6.

4.7 COASTAL BARRIER RESOURCES

4.7.1 ALTERNATIVE 1: DUNE INCORPORATION (PREFERRED ALTERNATIVE)

The incorporation of dunes into the project would enhance the coastal barriers adjacent to the project by providing uninterrupted dune habitat along Anna Maria Island. Although no work

would occur in CBRS Other Protected Area (OPA) P23P, constructing dunes in the project area would encourage resilience along the entire length of the Anna Maria Island shoreline.

4.7.2 ALTERNATIVE 2: DUNE VEGETATION (PREFERRED ALTERNATIVE)

Dune vegetation would enhance the coastal barriers (including CBRS OPA P23P) adjacent to the project by improving the dune habitat along Anna Maria Island.

4.7.3 ALTERNATIVE 3: SAND FENCING

There could be a potential adverse effect on the adjacent CBRS OPA unit if sand fencing became dislodged and caused increased debris on that shoreline following a storm event.

4.7.4 ALTERNATIVE 4: VEHICLE ACCESS MODIFICATIONS (PREFERRED ALTERNATIVE)

There would be no effect on adjacent CBRS system units or otherwise protected areas as a result of vehicle access modifications.

4.7.5 ALTERNATIVE 5: PEDESTRIAN ACCESS MODIFICATIONS (PREFERRED ALTERNATIVE)

There would be no effect on adjacent CBRS system units or otherwise protected areas as a result of pedestrian access modifications.

4.7.6 NO-ACTION ALTERNATIVE (STATUS QUO)

There would be no additional effect on adjacent CBRS system units or otherwise protected areas in the No-Action Alternative. The effects determination for the no-action alternative (which includes beach placement as part of the existing shore protection project) was described as the preferred alternatives in previous NEPA documents referenced in Section 1.6 and coordinated with the USFWS.

4.8 WATER QUALITY

The placement of sand within the proposed project areas would result in minor short-term effects on water quality (i.e. temporary turbidity in nearshore waters). Turbidity would be monitored per any applicable State permit requirements.

4.8.1 ALTERNATIVE 1: DUNE INCORPORATION (PREFERRED ALTERNATIVE)

Effects to water quality from turbidity during construction of dunes will be minimal, as all work is proposed to occur below the mean high water line.

4.8.2 ALTERNATIVE 2: DUNE VEGETATION (PREFERRED ALTERNATIVE)

There is a potential for a beneficial effect to nearshore water quality through the filtering of contaminants from upland sources through the dunes and associated vegetation. No effect to water quality is anticipated during the planting of vegetation.

4.8.3 ALTERNATIVE 3: SAND FENCING

There will be no effect to water quality during construction of sand fencing. There is a potential for a beneficial effect to nearshore water quality through the filtering of contaminants from upland sources as a result of increased dune vegetation.

4.8.4 ALTERNATIVE 4: VEHICLE ACCESS MODIFICATIONS (PREFERRED ALTERNATIVE)

There will be no effect to water quality during the construction of vehicle access points.

4.8.5 ALTERNATIVE 5: PEDESTRIAN ACCESS MODIFICATIONS (PREFERRED ALTERNATIVE)

There will be no effect to water quality during the construction of pedestrian access points.

4.8.6 NO-ACTION ALTERNATIVE (STATUS QUO)

There would be no additional effect to water quality if the proposed dune system were not constructed. The effects determination for the no-action alternative (which includes beach placement as part of the existing shore protection project) was described as the preferred alternative in previous NEPA documents referenced in Section 1.6.

4.9 AESTHETIC RESOURCES

The aesthetics of the construction of a dune system would be temporarily adversely affected during construction due to the presence of construction equipment on the beach. There will only be a temporary reduction in aesthetics. Aesthetics of the sand source locations would also experience temporary adverse effects due to the presence of dredge equipment during construction. The long-term effect is the possibility of viewshed being affected by the construction of the dunes.

4.9.1 ALTERNATIVE 1: DUNE INCORPORATION (PREFERRED ALTERNATIVE)

The construction activity associated with building a dune system would result in minor short-term effects on aesthetics due to construction equipment on the beach and construction-related noise. The long-term effect is the possibility of the viewshed being affected by building the dunes or by closing gaps in existing dunes. Some gaps would be permanently closed with sand as part

of the proposed construction template of the preferred alternative. Gaps that are not permanently closed may be temporarily closed with stockpiled sand in order to help protect infrastructure when a storm is approaching. In this case, the storm would be expected to erode the dune system requiring reconstruction and revegetation of the dune. Temporary gap closure as well as post-storm reconstruction would result in a long-term effect on the viewshed for the life of the existing authorized project. Stockpiled sand, for storm related emergencies, would be located near existing gaps in dunes and would have a minor long-term effect on the viewshed. The placement of sand for the construction of dunes would reduce the risk of damage to shoreline infrastructure (buildings and parks) and should generally improve the appearance of these locations. Management measures like dune construction with vegetation is an opportunity for long-term benefits in preserving the beach habitat and to maintain the quality of the environment for human and natural use.

4.9.2 ALTERNATIVE 2: DUNE VEGETATION (PREFERRED ALTERNATIVE)

The construction activity associated with planting of vegetation only would result in minor short-term effects on aesthetics. Longer term, aesthetics are expected to be benefited due to increase in natural vegetation and habitat.

4.9.3 ALTERNATIVE 3: SAND FENCING

The construction activity associated with constructing sand fencing would result in minor short-term effects on aesthetics due to construction equipment on the beach and construction-related noise. Overtime, sand fencing may become buried by accreting sand or hidden by vegetation. The fencing is expected to have a minor long-term effect on the viewshed. Management measures like sand fencing is an opportunity for long-term benefits in preserving the beach habitat and to maintain the quality of the environment for human and natural use.

4.9.4 ALTERNATIVE 4: VEHICLE ACCESS MODIFICATIONS (PREFERRED ALTERNATIVE)

Vehicle access modifications may include changing the angle or elevation of the cuts through the dune. Mats or ramps could be used to allow vehicles to drive over the dune. The construction activity associated with modifying vehicle access points would result in minor short-term effects on aesthetics due to construction equipment on the beach and construction-related noise. Long-term effects would include angle or elevation changes in existing cuts through dunes, the use of mats or ramps to drive over the dune, and the possibility of increased vehicle traffic entering and exiting the vehicle access locations.

4.9.5 ALTERNATIVE 5: PEDESTRIAN ACCESS MODIFICATIONS (PREFERRED ALTERNATIVE)

The construction activity associated with modifying pedestrian access points would result in minor short-term effects on aesthetics due to construction equipment on the beach and construction-related noise. The long-term effect is the possibility of pedestrian access points increasing foot traffic in an area that was not previously walked through and may cause a disturbance to the residents.

4.9.6 NO-ACTION ALTERNATIVE (STATUS QUO)

There would be no additional effect to aesthetic resources in the no-action alternative. The effects determination for the beach placement associated with the existing shore protection project was described in previous NEPA documents referenced in Section 1.6.

4.10 RECREATION RESOURCES

The placement of sand would result in minor short-term effects on recreational opportunities. Construction activity would temporarily disrupt recreation; however, access to a portion of the beaches would continue to be possible.

4.10.1 ALTERNATIVE 1: DUNE INCORPORATION (PREFERRED ALTERNATIVE)

Effects to recreation during dune construction will be minimal and limited to during this construction period. Some gaps in existing dunes would be permanently closed with sand as part of the proposed construction template. This would result in a long-term effect on recreation by limiting beach access (please refer to Appendix C for gap closure locations and recommendations). Gaps in existing dunes may also be temporarily closed with stockpiled sand in order to help protect infrastructure when a storm is approaching. In this case, the storm would be expected to erode the dune system requiring reconstruction of the dune. Temporary gap closure as well as post storm reconstruction would have a long-term, but not a permanent effect on recreation. Stockpiled sand, for storm related emergencies, would be located near existing gaps in dunes and would have a long-term minor effect on recreation. The placement of sand for the construction of dunes would preserve and protect many recreational opportunities.

4.10.2 ALTERNATIVE 2: DUNE VEGETATION (PREFERRED ALTERNATIVE)

Effects to recreation during planting of vegetation will be minimal and limited to during construction.

4.10.3 ALTERNATIVE 3: SAND FENCING

Effects to recreation during construction of sand fencing will be minimal and limited to during this construction period. Sand fencing would be placed around vehicle and pedestrian access points to minimize any effects to beach recreation.

4.10.4 ALTERNATIVE 4: PEDESTRIAN ACCESS MODIFICATIONS (PREFERRED ALTERNATIVE)

Effects to recreation during construction of pedestrian access modifications will be minimal and limited to during this construction period. The proposed pedestrian access modifications would provide better access to the beach for recreation.

4.10.5 ALTERNATIVE 5: VEHICLE ACCESS MODIFICATIONS (PREFERRED ALTERNATIVE)

Effects to recreation during construction of vehicle access modifications will be minimal and limited to during this construction period. Proposed modifications include changes in the angle or elevation of the cuts through the dune. Mats or ramps could be used to allow vehicles to drive over the dune.

4.10.6 NO-ACTION ALTERNATIVE (STATUS QUO)

There would be a minor effect to recreation resources if the proposed dune system were not constructed. Following storm events, the lack of dune will prevent the beach from rebounding quickly and increased erosion may occur. The effects determination for recreation resources associated with beach placement for the existing shore protection project was described in previous NEPA documents referenced in Section 1.6.

4.11 AIR QUALITY

The placement of sand into the dune system would result in low-level emissions from the operation of the construction equipment. Exhaust emissions from the construction equipment would have a temporary effect on air quality. The short-term effect of emissions by the dredge and other construction equipment associated with the project would not significantly affect air quality. The Florida Department of Environmental Protection does not regulate marine or mobile emission sources (dredge and construction equipment) within Manatee County. No air quality permits would be required for this project. Manatee County is designated as attainment areas for Federal air quality standards under the Clean Air Act. Since the project is located within an attainment area EPA's General Conformity Rule to implement Section 176(c) of the Clean Air Act does not apply and a conformity determination is not required.

4.11.1 ALTERNATIVE 1: DUNE INCORPORATION (PREFERRED ALTERNATIVE)

The placement of sand into the dune system would result in low-level emissions from the operation of the construction equipment. Exhaust emissions from the construction equipment would have a temporary effect on air quality. The short-term effect due to emissions by the dredge and other construction equipment associated with the project would not significantly affect air quality.

4.11.2 ALTERNATIVE 2: DUNE VEGETATION (PREFERRED ALTERNATIVE)

Planting of vegetation will have no adverse effect to air quality.

4.11.3 ALTERNATIVE 3: SAND FENCING

Construction of sand fencing is not likely to have an adverse effect on air quality as this would likely be constructed without heavy machinery; however, minor adverse effects would occur if construction equipment were used.

4.11.4 ALTERNATIVE 4: VEHICLE ACCESS MODIFICATIONS (PREFERRED ALTERNATIVE)

The construction of vehicle access modifications would result in low-level emissions from the operation of the construction equipment. Exhaust emissions from the construction equipment would have a temporary effect on air quality.

4.11.5 ALTERNATIVE 5: PEDESTRIAN ACCESS MODIFICATIONS (PREFERRED ALTERNATIVE)

The construction of pedestrian access modifications would result in low-level emissions from the operation of the construction equipment. Exhaust emissions from the construction equipment would have a temporary effect on air quality.

4.11.6 NO-ACTION ALTERNATIVE (STATUS QUO)

There would be no additional effects to air quality if the proposed dune system were not constructed. The effects determination for beach placement associated with the existing shore protection project were described as the preferred alternative in previous NEPA documents referenced in Section 1.6.

4.12 NOISE

4.12.1 ALTERNATIVE 1: DUNE INCORPORATION (PREFERRED ALTERNATIVE)

The placement of sand into the dune system would temporarily raise the noise level in the area during construction from construction equipment (e.g., front-end loaders and trucks). The noise levels associated with the construction of the dunes would be similar to the noise associated with the construction of the beach berm and would be temporary in nature.

4.12.2 ALTERNATIVE 2: DUNE VEGETATION (PREFERRED ALTERNATIVE)

In addition to the effects of dune construction noted in 4.12.1, planting of vegetation would not effect noise levels. Planting is usually conducted by hand and does not require heavy-duty equipment.

4.12.3 ALTERNATIVE 3: SAND FENCING

The construction of sand fencing would temporarily raise the noise level in the area. Noise associated with the construction of the sand fencing activity would specifically include construction equipment.

4.12.4 ALTERNATIVE 4: VEHICLE ACCESS MODIFICATIONS (PREFERRED ALTERNATIVE)

The construction of vehicle access modifications would temporarily raise the noise level in the area. Although vehicle access points are limited to emergency and construction vehicles, limiting the number of access points could localize noise levels in these locations.

4.12.5 ALTERNATIVE 5: PEDESTRIAN ACCESS MODIFICATIONS (PREFERRED ALTERNATIVE)

The construction of pedestrian access modifications would temporarily raise the noise level in the area. Noise levels in areas where dune walkovers are constructed could be locally increased due to increased foot traffic in these areas and concentration of recreational visitors.

4.12.6 NO-ACTION ALTERNATIVE (STATUS QUO)

There would be no additional effects associated with noise if the action alternatives were not implemented. The effects determination for the noise associated with beach placement was described as the preferred alternative in previous NEPA documents referenced in Section 1.6.

4.13 ENERGY REQUIREMENTS AND CONSERVATION

4.13.1 ALTERNATIVE 1: DUNE INCORPORATION (PREFERRED ALTERNATIVE)

Energy requirements associated with constructing a dune system would be confined to the fuel used to operate construction equipment.

4.13.2 ALTERNATIVE 2: DUNE VEGETATION (PREFERRED ALTERNATIVE)

Planting vegetation would not affect energy requirements and conservation potential.

4.13.3 ALTERNATIVE 3: SAND FENCING

Energy requirements associated with the use of constructing the sand fencing would be confined to the fuel used to operate construction equipment.

4.13.4 ALTERNATIVE 4: VEHICLE ACCESS MODIFICATIONS (PREFERRED ALTERNATIVE)

Energy requirements associated with the use of constructing the vehicle access modifications would be confined to the fuel used to operate construction equipment.

4.13.5 ALTERNATIVE 5: PEDESTRIAN ACCESS MODIFICATIONS (PREFERRED ALTERNATIVE)

Energy requirements associated with the use of constructing the pedestrian access modifications would be confined to the fuel used to operate construction equipment.

4.13.6 NO-ACTION ALTERNATIVE (STATUS QUO)

There would be no energy requirements or opportunities for conservation if the action alternatives were not implemented. The effects determination for the no-action alternative was described as the preferred alternative in previous NEPA documents referenced in Section 1.6.

4.14 NATURAL OR DEPLETABLE RESOURCES

4.14.1 ALTERNATIVE 1: DUNE INCORPORATION (PREFERRED ALTERNATIVE)

No natural energy resources occur within the proposed dune systems. Fuel is a depletable resource that would be consumed by construction equipment during construction operations. Effects to natural resources are discussed elsewhere in this document. Sediment can be considered a depletable resource; however, the sediment volume required for dune construction does not exceed the volume previously considered for the construction of the berm on its own.

Sediment allocated for advance fill associated with the existing project would be re-allocated to construct a dune in areas where there is no existing dune. Therefore, no additional sediment resources will be utilized in the construction of dunes for this project. In addition, the use of these natural or depletable resources is not considered an unacceptable adverse effect of the proposed project.

4.14.2 ALTERNATIVE 2: DUNE VEGETATION (PREFERRED ALTERNATIVE)

In addition to the effects noted in 1.14.1, some depletable resources are consumed to grow dune plants in nurseries including the fuel consumed in creating fertilizer and in watering and transporting the plants; however, these resources are minimal.

4.14.3 ALTERNATIVE 3: SAND FENCING

Fencing is typically constructed from wood, which is a renewable resource. No other natural or depletable resources are consumed in the construction of sand fencing.

4.14.4 ALTERNATIVE 4: VEHICLE ACCESS MODIFICATIONS (PREFERRED ALTERNATIVE)

Depending on the methods used to modify vehicle access, some minimal resources may be used to create the products implemented. Fuel will also be consumed by equipment during construction; however, these resources are limited.

4.14.5 ALTERNATIVE 5: PEDESTRIAN ACCESS MODIFICATIONS (PREFERRED ALTERNATIVE)

Similar to vehicle access modifications, some minimal resources may be used to create the products implemented. Fuel will also be consumed by equipment during construction; however, these resources are limited.

4.14.6 NO-ACTION ALTERNATIVE (STATUS QUO)

Natural or depletable resources would not be affected if the dune systems were not utilized. Sand would not be placed within the proposed dune system, but would be continued to be utilized for beach placement as part of the existing project. The effects determination for the no-action alternative (which includes beach placement as part of the existing shore protection project) was described as the preferred alternative in previous NEPA documents referenced in Section 1.6.

4.15 ECONOMIC AND SOCIAL EFFECTS

4.15.1 ALTERNATIVE 1: DUNE INCORPORATION (PREFERRED ALTERNATIVE)

Dune construction would provide resiliency to the project and result in higher net benefits to the project in the form of storm damage reduction benefits.

4.15.2 ALTERNATIVE 2: DUNE VEGETATION (PREFERRED ALTERNATIVE)

Dune construction and planting of vegetation would stabilize the dune system, providing resiliency to the project and resulting in higher net benefits to the project in the form of storm damage reduction benefits.

4.15.3 ALTERNATIVE 3: SAND FENCING

Construction of sand fencing would encourage the growth of the dune system, providing resiliency to the project and resulting in higher net benefits to the project in the form of storm damage reduction benefits. As sand would accrete more slowly than placement of sand as in Alternative 1, storm damage reduction benefits would not be realized as quickly as in Alternative 1 or 2.

4.15.4 ALTERNATIVE 4: VEHICLE ACCESS MODIFICATIONS (PREFERRED ALTERNATIVE)

The construction of vehicle access modifications would encourage the growth of the dune system as the number of access points and direct damage to the existing dune system would be reduced. This would provide resiliency to the project and resulting in higher net benefits to the project in the form of storm damage reduction benefits.

4.15.5 ALTERNATIVE 5: PEDESTRIAN ACCESS MODIFICATIONS (PREFERRED ALTERNATIVE)

Pedestrian access modifications would encourage the growth of the dune system as the number of access points and direct damage to the existing dune system would be reduced. This would provide resiliency to the project and resulting in higher net benefits to the project in the form of storm damage reduction benefits. Other social effects include increased ability for making beaches accessible to mobility-challenged individuals through the incorporation of dune walkovers.

4.15.6 NO-ACTION ALTERNATIVE (STATUS QUO)

There would be no additional economic or social effects other than those described for the preferred alternative in the previous NEPA documents referenced in Section 1.6.

4.16 NATIVE AMERICANS

None of the proposed project activities for construction of the dune system occur on land belonging to Native Americans, therefore there would be no effect to Native American lands as a result of any of the alternatives. The measures do fall within an area of interest of the Miccosukee Tribe of Indians of Florida, Seminole Nation of Oklahoma, Seminole Tribe of Florida, and Thlopthlocco Tribal Town. No effects of the implementation of the proposed project have been identified to Native Americans or land belonging to Native Americans.

4.17 CUMULATIVE EFFECTS

Cumulative effects include the "effect on the environment which results from the incremental effect 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" (40 CFR 1508.7). A description of cumulative effects for these projects, including descriptions of past, present, and reasonably foreseeable future actions, can be found within the NEPA reports listed in Section 1.6 and are incorporated herein by reference. Reasonably foreseeable future actions include potential actions by the Counties to reconstruct dunes in the project area after future storm events, which may also include renourishment of the beach adjacent to the dunes. Reasonably foreseeable future land uses adjacent to the dunes include residential development or parks. The density of development may increase over time.

Table 7 summarizes the effect of such cumulative actions by identifying the past, present, and reasonably foreseeable future condition of the various resources which are directly or indirectly affected by the proposed action and its alternatives. The table also illustrates the with-project and without-project condition (the difference being the incremental effect of the project). Also illustrated is the future condition with any reasonable alternatives (or range of alternatives). The temporal scope for this analysis begins with pre-development and ends when the life of each of the projects is reached. Geographic scope is limited to the project footprints and adjacent areas.

Table 7. Summary of cumulative effects.

	Past Conditions	Present (existing condition)	Future with Preferred Alternative, including resiliency design refinements (i.e. dune construction, dune vegetation, sand fencing, vehicle and pedestrian access modifications, and outfall pipe modifications)	No-Action Alternative (Authorized Project noted in the prior NEPA documents specific to Manatee County Florida SPP)
General Environment Effects	Prior to development, beaches were subjected to natural erosion and accretion. Beach quality sand has been placed on these beaches in the past.	General environment characteristics, including sand currently being used to nourish these beaches, are described in prior NEPA documents.	Resiliency design refinements in combination with beach nourishment events would increase the cumulative effect on the general environment. For example, construction periods would increase. However, when combined with beach nourishment events, refinements would further reduce future beach erosion. Greater erosion control would result in less damage to property and infrastructure. If development intensifies in the project area, the beneficial effects to infrastructure protection would correspondingly increase.	Beach nourishment events would continue. Beach erosion would continue at the current rate and there would be greater risk of damage to property and infrastructure.
Dune Vegetation	Prior to development, vegetation naturally occurred within dunes and was affected by natural erosion and accretion. Development negatively effected historical dune vegetation causing increased erosion.	Dune vegetation, if currently present, is described in prior NEPA documents.	Existing dune vegetation would be avoided to the maximum extent practicable during beach nourishment events as well as implementation of resiliency design refinements. Installation of dune vegetation would help prevent erosion. Resiliency design refinements in combination with beach nourishment events would further reduce loss of dune vegetation by reducing erosion.	Beach nourishment events would continue. Beach erosion would continue at the current rate and there would be greater risk of existing dune vegetation being lost.
Threatened and Endangered Species (nesting sea turtles, piping plover, red knot); Migratory Birds; Other Wildlife Resources	Populations were significantly greater prior to human development. Declines are attributed to loss or degradation of habitat as well as other human related factors.	Education and enforcement of relevant laws have resulted in some population increases. Habitat has also improved in some cases due to land conservation or protection, pollution abatement, and regulatory practices.	Construction periods would increase if resiliency design refinements were implemented in addition to beach nourishment. Species that utilize beach or dune habitat may be affected. These activities would be performed in compliance with all applicable laws. Resiliency design refinements and beach nourishment would help provide beach and dune habitat.	Beach nourishment events would continue. These activities would be performed in compliance with all applicable laws. Beach erosion would continue at the current rate and there would be greater risk of existing beach and dune habitat being lost.

Chapter 4: Environmental Effects

	Past Conditions	Present (existing condition)	Future with Preferred Alternative, including resiliency design refinements (i.e. dune construction, dune vegetation, sand fencing, vehicle and pedestrian access modifications, and outfall pipe modifications)	No-Action Alternative (Authorized Project noted in the prior NEPA documents specific to Manatee County Florida SPP)
Cultural, Historic, and Archaeological Resources	Ongoing erosion and storm event effects have added to the degradation of cultural resources located along the shoreline and in the nearshore environment.	No known present actions are occurring in the project vicinity.	The measures to create a more resilient coastline may offer additional protection to cultural, historic, and archaeological resources. This protection from erosion and storm events would allow for the continued appreciation of the cultural and historical resources of Anna Maria Island.	Beach nourishment events would continue. Erosion and storm event effects will continue to degrade cultural resources located along the shoreline and in the nearshore environment.
Coastal Barrier Resources	Prior to development, coastal barrier resources were allowed to move naturally unimpeded by infrastructure	Infrastructure limits the natural ability of coastal barriers to react to rising or lowering sea levels	Although coastal barriers that are part of the CBRS are not directly affected by the action alternatives, the incorporation of dune resiliency measures into the project area would contribute (to a limited extent) to more resiliency of the barriers adjacent to the project area	Beach nourishment events would continue, and the alongshore sediment transport that currently contributes to decreased erosion at the end of Anna Maria Island would continue.
Water Quality	Prior to Federal and State laws being enacted and enforced, water quality had significantly declined due to human related factors (i.e. turbidity caused by upland runoff, septic tank leachate, etc.).	Present day water quality has significantly improved due to local, State, and Federal pollution abatement programs.	Minor increases in turbidity would occur from combined beach nourishment and implementation of resiliency design refinements. All work would be performed in compliance with State Water Quality Certification/permit, as applicable.	Beach nourishment events would continue and would result in minor increases in turbidity. Work would be performed in compliance with State Water Quality Certification/permit, as applicable. Existing pressures on coastal waters that degrade water quality will continue into the future even without a project.

Chapter 4: Environmental Effects

	Past Conditions	Present (existing condition)	Future with Preferred Alternative, including resiliency design refinements (i.e. dune construction, dune vegetation, sand fencing, vehicle and pedestrian access modifications, and outfall pipe modifications)	No-Action Alternative (Authorized Project noted in the prior NEPA documents specific to Manatee County Florida SPP)
Aesthetics	Prior to development, natural beach and dune systems occurred. Urban development along the shoreline has affected the aesthetics of these project areas.	Continued urban development along the shoreline has affected the aesthetics of project areas.	There would be an increased effect to aesthetics during construction if resiliency design refinements were implemented in addition to beach nourishment events. These combined activities, however, would further reduce erosion thereby improving the viewshed.	Beach nourishment events would continue and would result in effects to aesthetics during construction. Greater erosion rates would adversely affect the viewshed if resiliency design refinements were not implemented.
Recreation	Opportunities for beach recreation have been affected by shoreline development as well as storm induced erosion.	Numerous beach access routes have been established. However, opportunities for recreation are at risk due to erosion, or loss of beach area.	Beach nourishment events when combined with resiliency design refinements would increase construction periods, which would adversely affect beach recreation. However, access to a portion of the beaches would continue to be possible, and erosion of recreational areas would be reduced.	Beach nourishment events would continue and would result in effects to beach recreation during construction. Greater erosion rates would adversely affect recreational areas if resiliency design refinements were not implemented.
Air Quality	Prior to development, air quality was only occasionally affected by natural events. Development resulted in a decline of air quality.	Present day air quality has significantly improved due to local, State, and Federal pollution abatement programs. The project areas remain in attainment with air quality criteria.	There would be an increased effect to air quality during construction if resiliency design refinements were implemented in addition to beach nourishment events.	Beach nourishment events would continue and would result in effects to air quality during construction.
Noise	Prior to development, noise was created by natural sources. Noise levels have likely remained unchanged for some time due to the urbanized environment.	Noise levels continue to be typical for these urbanized project areas.	Beach nourishment events when combined with resiliency design refinements would increase construction periods and associated noise.	Beach nourishment events would continue, and noise generated by construction activities would also continue.

Chapter 4: Environmental Effects

	Past Conditions	Present (existing condition)	Future with Preferred Alternative, including resiliency design refinements (i.e. dune construction, dune vegetation, sand fencing, vehicle and pedestrian access modifications, and outfall pipe modifications)	No-Action Alternative (Authorized Project noted in the prior NEPA documents specific to Manatee County Florida SPP)
Energy Requirements and Conservation	Past beach nourishment in the project areas required insignificant uses of energy.	Beach nourishment continues to require insignificant uses of energy.	Beach nourishment events when combined with resiliency design refinements would require insignificant energy.	Beach nourishment events would continue and would require insignificant energy.
Natural or Depletable Resources	Past beach nourishment in the project areas required the use of sand, which is a depletable natural resource.	Present day beach nourishment in the project areas requires the use of sand, which is a depletable natural resource.	Beach nourishment events and construction of dunes would require sand and would contribute to the depletion of sand sources. The preferred alternative does not require sand in excess of what is currently used for the existing project. Further pressures on coastal systems to protect increasing dense populations along the coastline could cause additional reliance on limited sand sources.	Beach nourishment events would continue and would require sand, which is a depletable natural resource.
Native Americans	There are no Native American lands in the project area.	There are no Native American lands in the project area.	There are no Native American lands in the project area.	There are no Native American lands in the project area.
Reuse and Conservation Potential	There is no potential for reuse associated with the proposed project activities.	There is no potential for reuse associated with the proposed project activities.	There is no potential for reuse associated with the proposed project activities.	There is no potential for reuse associated with the proposed project activities.

4.18 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

4.18.1 IRREVERSIBLE COMMITMENT

An irreversible commitment of resources is one in which the ability to use and/or enjoy the resource is lost forever. As previously stated, sand is a depletable resource; therefore, the transfer of this sand from offshore borrow areas or an upland sand source by truck haul to the dune system is considered an irreversible commitment of resources.

4.18.2 IRRETRIEVABLE COMMITMENT

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. Typically, it refers to the use of renewable resources, including human effort, and to other utilization opportunities foregone in favor of the proposed action.

The project would result in the temporary loss of macrofauna habitat and associated fauna within the dune system. This is an irretrievable loss because macrofauna habitat will redevelop and fauna will reoccupy the affected areas following construction.

4.19 UNAVOIDABLE ADVERSE ENVIRONMENTAL EFFECTS

Most of the beach sand infauna (e.g., sand fleas) will be unavoidably lost as a result of sand placement activities. However, these losses are not expected to have a long-term, significant adverse effect on the surrounding environment since infauna outside of the fill areas and borrow areas will recolonize the disturbed sandy areas within one to three seasons after construction, respectively, and changes in macroinfaunal community assemblages should result in a minimal loss of productivity.

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

Shoreline protection using beach quality material with periodic nourishment is an ongoing effort. Beach nourishment projects have a temporary and short-term effect on local offshore and nearshore biological resources. Most motile organisms (fishes, crabs, and some sand dwelling organisms) within the borrow area and nearshore zone should be able to escape these areas during construction. Some less-motile individuals that are unable to escape from construction will be lost but are expected to recolonize after project completion. Short-term reductions in primary productivity and reproductive and feeding success of invertebrate species and fish are expected.

4.21 INDIRECT EFFECTS

There is relatively limited opportunity for future development in the project area. No additional development along these shorelines is anticipated to occur.

4.22 COMPATIBILITY WITH FEDERAL, STATE, AND LOCAL OBJECTIVES

The Federal objective is to contribute to national economic development consistent with protecting the nation's environment, pursuant to national environmental statutes, applicable executive orders, and other Federal planning requirements. Federal planning concerns other than economic include environmental protection and enhancement, human safety, social wellbeing, and cultural and historical resources. Federal, state and county objectives include (1) the reduction of expected storm damages through beach nourishment and other project alternatives; (2) maintaining beaches as suitable recreational areas; (3) maintaining suitable beach habitat for nesting sea turtles, invertebrate species, and shorebirds; (4) maintaining commerce associated with beach recreation in Manatee County; and (5) avoidance or minimization of adverse effects to sensitive environmental marine resources along the project area. The proposed project activity is consistent with Federal and local objectives and with the State's Coastal Zone Management Plan.

4.23 CONFLICTS AND CONTROVERSY

There are no known conflicts or controversy associated with modifying or developing the proposed dune systems for Manatee County Florida SPP. The State of Florida's approval for modifying or developing dune systems for Manatee County will be obtained for Coastal Zone Management Act consistency through the Florida Department of Environmental Protection Joint Coastal Permit.

4.24 UNCERTAIN, UNIQUE, OR UNKNOWN RISKS

There are no uncertain, unique or unknown risk associated with modifying or developing the proposed dune systems for the Manatee County Florida SPP currently Federal authorized project.

4.25 PRECEDENT AND PRINCIPLE FOR FUTURE ACTIONS

The proposed activities are consistent with, and/or adaptations of, prior permitted activities conducted by USACE. These include prior beach nourishments and periodic nourishment along the Manatee County Florida SPP and for other SPP projects in the region.

4.26 ENVIRONMENTAL COMMITMENTS

USACE commits to avoiding, minimizing, or mitigating for adverse effects during construction activities by including the following commitments in the contract specifications:

1. Protective measures for threatened and endangered species shall be enforced in accordance with the USFWS Statewide Programmatic Biological Opinion (2015), the USFWS Programmatic Piping Plover Biological Opinion (2013), and the State permit.
2. All water quality terms and conditions of any applicable State permit shall be implemented.
3. Migratory birds (adult birds, eggs and chicks) shall be protected during construction activities.
4. Essential Fish Habitat will not be effected by the proposed design modifications.
5. In the event that cultural resources are discovered, then protective measures shall be utilized.
6. Air emissions such as vehicular exhaust and dust shall be controlled.
7. The contracting officer would notify the contractor in writing of any observed noncompliance with Federal, State, or local laws or regulations, permits and other elements of the contractor's Environmental Protection Plan.
8. The contractor would train his personnel in all phases of environmental protection.
9. The environmental resources within the project boundaries and those affected outside the limits of permanent work would be protected during the entire period of work.
10. An oil spill prevention plan shall be required.

5 COMPLIANCE WITH ENVIRONMENTAL REQUIREMENTS

5.1 NATIONAL ENVIRONMENTAL POLICY ACT OF 1969

Environmental information on the project has been compiled and this Supplemental Environmental Assessment (SEA) has been prepared. Additionally, the NEPA documents referenced in Section Related Documents 1.6 are incorporated herein by reference. A scoping letter on the placement of sand within the dune system was mailed out to all Federal, State, and local agencies on December 3, 2018. USACE will issue a Notice of Availability (NOA) for the review of the SEA and proposed Finding of No Significant Impact (FONSI) to stakeholders.

5.2 ENDANGERED SPECIES ACT OF 1973

The proposed work would be performed in accordance with the USFWS Statewide Programmatic Biological Opinion (2015) and the USFWS Programmatic Piping Plover Biological Opinion P³BO (2013). A consultation letter was sent to the USFWS with this SEA to document determination of effect and use of the SPBO and P³BO. There is no effect on species under NMFS jurisdiction associated with the preferred alternative. This project shall be fully coordinated under the Endangered Species Act and is therefore, in full compliance with the Act.

5.3 FISH AND WILDLIFE COORDINATION ACT OF 1958

The proposed action is being coordinated with the USFWS through NEPA scoping and ESA consultation. This project will be in full compliance with the Act.

5.4 NATIONAL HISTORIC PRESERVATION ACT OF 1966 (INTER ALIA)

The consultation with SHPO and interested Tribes is complete for the proposed action. This project has been fully coordinated under the National Historic Preservation Act of 1966 by letter dated 30 June 2020 (Appendix B). The Seminole Tribe of Florida provided a letter with no objections to the project on 21 July 2020. All other parties declined to comment. This project is in full compliance with the Act.

5.5 CLEAN WATER ACT OF 1972

A Section 401 water quality certification has been issued by the Florida Department of Environmental Protection for the Manatee County Florida SPP and if necessary, shall be modified to include the proposed design modifications. All State water quality standards shall be met. A Section 404 (b) evaluation was included in the prior NEPA documents and has been determined to be sufficient because the dune construction and other design refinements would occur within the federally authorized project footprint. The project is in full compliance with this Act.

5.6 CLEAN AIR ACT OF 1972

No air quality permits would be required for these projects. This project will be coordinated with U.S. Environmental Protection Agency (EPA) and is in compliance with Section 309 of the Act.

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 A. The proposed work shall be coordinated with the FDEP. The project is in full compliance with this Act.

5.8 FARMLAND PROTECTION POLICY ACT OF 1981

No prime or unique farmland would be effected 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

Marine mammals will not be effected by the proposed design modifications, as all work occurs above the mean high water line.

5.11 ESTUARY PROTECTION ACT OF 1968

No designated estuaries would be affected by the 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).

5.13 SUBMERGED LANDS ACT OF 1953

This project would occur on submerged lands of the State of Florida. This project shall be coordinated with the State and is in full compliance with the Act.

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

There are no designated coastal barrier resources in the project areas that would be affected by this project. Otherwise Protected Area P23P is located south of the project area, and no work would occur in that unit. These Acts are not applicable.

5.15 RIVERS AND HARBORS ACT OF 1899

The proposed work would not obstruct or alter any navigable water of the United States. No dunes or other design refinement modifications are seaward of the Mean High Water Line. There are no effects to navigation. This project is in full compliance with the Act.

5.16 ANADROMOUS FISH CONSERVATION ACT

Anadromous fish species would not be affected. This Act is not applicable.

5.17 MIGRATORY BIRD TREATY ACT AND MIGRATORY BIRD CONSERVATION ACT

Protective measures shall be implemented so that no migratory birds would be affected by project activities. These projects are in full compliance with these acts.

5.18 MARINE PROTECTION, RESEARCH, AND SANCTUARIES ACT

The term "dumping" as defined in the Act [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 (e.g., 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 these project. The disposal activities addressed in referenced environmental documents and this SEA have been evaluated under Section 404 of the Clean Water Act.

5.19 MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT

An Essential Fish Habitat Assessment for this project is not applicable, because no effects to EFH are anticipated due to work being out of water. However, coordination with NMFS is being implemented.

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. The proposed work should not involve real property acquisition and/or displacement of property owners or tenants as it falls within the existing project footprint. This Act does not apply.

5.21 E.O. 11990, PROTECTION OF WETLANDS

There are no wetlands in the project area. This EO does not apply.

5.22 E.O. 11988, FLOOD PLAIN MANAGEMENT

To comply with E.O. 11988, the USACE policy is to formulate projects that, to the extent possible, avoid or minimize adverse effects associated with the use of the floodplain and avoid inducing development in the floodplain unless there is no practicable alternative.

Per guidance provided in E.O. 11988, the following factors were evaluated:

1. *Determine if a proposed action is in the base floodplain (area with a one percent or greater chance of flooding in any given year).*

The project is located along the shoreline, and is within the 100-year flood zone as mapped by the Federal Emergency Management Agency (FEMA) (FEMA 2019).

2. *Conduct early public review, including public notice.*

Public and agency coordination (including scoping efforts and NEPA reviews) is described in Section 7.

3. *Identify and evaluate practicable alternatives to locating in the base floodplain, including alternative sites outside of the floodplain.*

There is no practicable alternative to locating the project outside of the floodplain due to the nature of the project's purpose and need, which is described in Section 1.

4. *Identify effects of the proposed action.*

Effects of the proposed action are described in Section 4.

5. *Minimize threats to life and property and to natural and beneficial floodplain values. Restore and preserve natural and beneficial floodplain values.*

Adding dunes to the coastal system will provide protection to coastal infrastructure, thereby minimizing threats to life and property while restoring and preserving natural and

beneficial floodplain values. More details on the project's purpose and need are included in Section 1. Details on the environmental commitments are included in Section 4.26.

6. *Reevaluate alternatives.*

Alternatives are described in Section 2. The Preferred Alternative that is selected best meets the purpose and need, which is described in Section 1.

7. *Issue findings and a public explanation.*

This NEPA document provides a FONSI and describes the Preferred Alternative in Section 2. Public and agency coordination is described in Section 7.

8. *Implement the action.*

Construction will occur after all appropriate documentation (e.g. agreements, permitting, etc.) is completed and funds are received.

USACE concludes that the proposed project will not result in harm to people, property, and floodplain values; will not induce development in the floodplain; and the project is in the public interest. For the reasons stated above, the project complies with this E.O.

5.23 E.O. 12898, ENVIRONMENTAL JUSTICE

On February 11, 1994, the President of the U.S. issued Executive Order (E.O.) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. This E.O. mandates that each Federal agency make environmental justice (EJ) part of the agency mission and to address, as appropriate, disproportionately high and adverse human health or environmental effects of the programs and policies on minority and low-income populations. Significance thresholds that may be used to evaluate the effects of a proposed action related to EJ are not specifically outlined. However, Council on Environmental Quality (CEQ) guidance requires an evaluation of a proposed action's effect on the human environment and USACE must comply with Executive Order 12898. USACE has determined that a proposed action or its alternatives would result in significant effects related to EJ if the proposed action or an alternative would disproportionately adversely affect an EJ community through its effects on:

- Environmental conditions such as quality of air, water, and other environmental media; degradation of aesthetics; loss of open space; and nuisance concerns such as odor, noise, and dust;
- Human health such as exposure of EJ populations to pathogens;
- Public welfare in terms of social conditions such as reduced access to certain amenities like hospitals, safe drinking water, public transportation, etc.; and
- Public welfare in terms of economic conditions such as changes in employment, income, and the cost of housing, etc.

USACE conducted an evaluation of EJ effects using a two-step process: as a first step, the study area was evaluated to determine whether it contains a concentration of minority and/or low-income populations. The second step includes evaluation to determine whether the proposed action would result in a disproportionately, high adverse effect on these populations.

As defined in Executive Order 12898 and the CEQ guidance, a minority population occurs where one or both of the following conditions are met within a given geographic area:

- The American Indian, Alaskan Native, Asian, Pacific Islander, Black, or Hispanic population of the affected area exceeds 50 percent; or
- The minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis.

An affected geographic area is considered to consist of a low-income population (i.e., below the poverty level for purposes of this analysis) where the percentage of low-income persons:

- is at least 50 percent of the total population; or
- is meaningfully greater than the low-income population percentage in the general population or other appropriate unit of geographic analysis.

Step 1: Study Area’s Minority and Low-Income Population Average Percentages

Using the USEPA EJAssist Tool, the project areas were identified and the average percentage for the EJ criteria are compared in Table 8.

Table 8. USEPA EJAssist Environmental Justice Criteria Percentages for Manatee County Florida SPP – Anna Maria Island.

	User-Defined Project Area %	Florida State Average %
Minority Population	8%	45%
Low Income Population	26%	36%

Based on the information provided by the USEPA EJAssist tool, the average minority population is approximately 8% of the total population and approximately 26% of the individuals in the project area are considered below the poverty level. Therefore, the study area which comprises Manatee County Florida SPP, does not constitute an EJ community because the population percentages are below 50 percent, indicating that the study area does not contain a high concentration of minority and low-income population.

Since Manatee County Florida SPP, does not contain a concentration of minority and/or low-income populations such that it would result in a disproportionate, high adverse effect on these populations, Step 2 is not incorporated.

In summary, the proposed actions would not use methods or practices that discriminate on the basis of race, color, or national origin and would not have a disproportionate effect on minority or low-income communities. For the reasons stated above, the project complies with this E.O.

5.24 E.O. 13089, CORAL REEF PROTECTION

The EO refers to "those species, habitats, and other natural resources associated with coral reefs." There are no coral reefs within the project footprints. This EO does not apply.

5.25 E.O. 13112, INVASIVE SPECIES

The proposed activity does not include actions that would introduce invasive species. The project is in compliance with the intent of this EO.

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. Neither the Department of Defense MOU nor the USACE' Draft MOU clearly address migratory birds on lands not owned or controlled by USACE. For many USACE 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. Measures to avoid the destruction of migratory birds and their eggs or hatchlings shall be implemented.

6 LIST OF PREPARERS AND REVIEWERS

6.1 PREPARERS

Preparer	Discipline	Role
Wendy Dauberman-Zerby, U.S. Army Corps of Engineers	Biologist	Secondary Author
Aubree Hershorin, U.S. Army Corps of Engineers	Ecologist	Primary Author
Chris Altes, U.S. Army Corps of Engineers	Archaeologist	Cultural Resources

6.2 REVIEWERS

This SEA was reviewed by the USACE, Jacksonville District, supervisory chain of the Environmental Branch.

7 PUBLIC INVOLVEMENT

7.1 SCOPING AND DRAFT SEA

Pursuant to the National Environmental Policy Act and USACE regulation, a scoping letter dated December 3, 2018 was issued for this proposed action. Also, USACE will issue a Notice of Availability (NOA) for the review of the SEA and proposed Finding of No Significant Impact (FONSI) to stakeholders.

7.2 AGENCY COORDINATION

Coordination has been conducted with appropriate agencies and is described in this document. Agency coordination letters and documents can be found in Appendix B.

7.3 COMMENTS RECEIVED AND RESPONSE

All comment letters or emails received during the scoping process can be found in Appendix B. Comments received on the draft SEA will also be included in Appendix B of the final document.

8 REFERENCES

- Deis, D. R., K.D. Spring, A.D. Hart. 1992. Captiva Beach Restoration Project Biological Monitoring Program. Proceedings of the National Conference on Beach Preservation Technology, 1992.
- Florida Fish and Wildlife Conservation Commission Gopher Tortoise Permitting Guidelines, April 2008; Revised 2017. <https://myfwc.com/media/11854/gt-permitting-guidelines.pdf>
- Gozelaney, Jay F., 1983. The Effects of Beach Nourishment on the Nearshore Benthic Macrofauna of Indian Atlantic and Melbourne Beach, Florida. Master's Thesis, Florida Institute of Technology, Melbourne, Florida. 83 pp.
- Hackney, C.T., M.H. Posey, S.W. Ross, and A.R. Norris. 1996. A review and synthesis of data on surf zone fishes and invertebrates in the South Atlantic Bight and the potential effects from beach renourishment. Report to the US Army Corps of Engineers, Wilmington, North Carolina. 111pp.
- Lacharmoise, F., V. Barrailler, T. Horwell, V.H. Barker, and M.B. Bush. In Preparation. Beach nourishment on invertebrate population densities.
- Nelson, Walter G. 1985. Physical and Biological Guidelines for Beach Restoration Projects. Florida Sea Grant Paper. No. 76. Florida Sea Grant Collect, No. 76. Gainesville, Florida. 54 pp.
- Nelson, W.G. 1989. Beach Renourishment and Hardbottom Habitats: The Case for Caution. Proceedings: 1989 National Conference on Beach Preservation Technology. FSBPA. Tallahassee, Florida. 109-116.
- U.S. Army Corps of Engineers 2006. Coastal Engineering Manual – EM1110-2-1100. U.S. Army Corps of Engineers, Washington, DC.
- U.S. Army Corps of Engineers. November 6, 2013. Hurricane Sandy Coastal Projects Performance Evaluation Study Disaster Relief Appropriations Act, 2013.
- U.S. Army Corps of Engineers 2018. Natural and Constructed Coastal Foredunes. U.S. Army Corps of Engineers, Engineering Research and Development Center, Coastal and Hydraulics Laboratory, Vicksburg, MS.
- U.S. Environmental Protection Agency. Environmental Justice Tool. Available online at: <https://ejscreen.epa.gov/mapper/>
- U.S. Fish and Wildlife Service. 2015 Species Account/Biologue: Anastasia Island Beach Mouse. Available online at: <http://www.fws.gov/northflorida/species-accounts/beach-mice-2005.htm>
- U.S. Fish and Wildlife Service. 2015e. Gopher tortoise fact sheet. Available online at: http://www.fws.gov/northflorida/gophertortoise/gopher_tortoise_fact_sheet.html
- Wootton, L., Miller, J., Miller, C., Peek, M., Williams, A., Rowe, P. New Jersey Sea Grant Consortium Dune Manual. 2016.

9 INDEX

—A—

Aesthetic resources, 42
 Aesthetics, 42, 43, 56, 67
 Affected Environment, 8, 20
 Air quality, 28, 45
 Clean Air Act, 63
 issues evaluated, 6
 summary of cumulative impacts, 56
 Air Quality, 1, 2, 6, 18, 28, 45, 46, 56, 63, 9
 Alternative, i, ii, iii, 1, 4, 1, 5, 7, 8, 9, 13, 14, 20,
 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41,
 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 53, 57,
 62, 65, 66, 67, 3
 Alternatives, 1, 4, 1, 4, 7, 8, 9, 14, 15, 20, 26, 27,
 29, 30, 32, 33, 35, 37, 38, 39, 40, 41, 47, 48,
 51, 52, 55, 60, 66, 67, 4, 1, 2
 Action Alternatives, 8, 9
 basis for comparison, 30
 No-action Alternative, 8, 20
 Preferred Alternatives, 5, 8
 Archeological, 6
 Artificial Reef, 64, 7

—B—

Baseline Conditions, 20
 Beach Mouse, 72
 Benefit, 15, 16, 35, 39, 65
 Benthic, 6
 Berm, iii, 1, 2, 3, 9, 15, 17, 23, 30, 33, 47, 49
 biological opinion, 34
 Biological Opinion, ii, 33, 34, 61, 62
 Biologist, 70, 1, 4
 Birds, 26, 35, 36, 61, 68
 Borrow Area, ii, 30, 34, 59

—C—

Clean Air Act. *See* Air quality
 Clean Water Act, ii, 2, 5, 63, 65, 2, *See* Water
 quality
 Coastal Barrier Resources, 1, 2, 4, 27, 28, 40, 55,
 64
 Coastal Barrier Resources Act, 64
 Comments, iii, 3, 71, 1, 4, 5
 Conservation Commission, 5, 72, 8
 Consultation, ii, 33, 62
 Continental Shelf, 2
 Coordination, 2, 3, 62, 71, 9, 1
 Coordination Act, 2, 62
 Coral, 68, 2
 County, 1, i, ii, 3, 4, 1, 2, 3, 4, 5, 13, 20, 24, 27, 33,
 39, 45, 53, 60, 61, 63, 68, 1, 2, 3, 1, 2, 6
 critical habitat, 23, 24, 25
 Cultural Resources, 39, 54, 61, 70

—D—

DEP, 7
 Department of Environmental Protection, ii, 5, 7,
 45, 60, 63, 1, 2
 Dunes, i, iii, 1, 2, 4, 8, 9, 11, 12, 13, 14, 17, 20, 26,
 30, 31, 32, 33, 34, 37, 38, 39, 40, 41, 42, 43,
 44, 47, 49, 51, 53, 57, 64, 66, 6, 1, 2

—E—

EA, 1, ii, 5
 Economic, 1, 2, 18, 29, 50, 7, 2
 Effect, ii, iii, 5, 15, 16, 17, 18, 26, 33, 34, 36, 39,
 40, 41, 42, 43, 44, 45, 46, 47, 49, 51, 53, 56,
 59, 62, 67, 68, 71, 5, 7, 8, 9, 2
 EFH, 5, 6, 65
 EIS, 5
 Endangered, ii, 1, 2, 5, 15, 23, 24, 33, 54, 62, 8
 Energy, 2, 48, 57, 9
 Energy Requirements and Conservation, 2, 48, 57
 Enhance, 1, 13, 15, 31, 38, 40, 8
 Environmental Assessment, 1, i, ii, 5, 1, 4, 5, 62, 9
 Environmental justice, 66
 EPA, 45, 63, 1, 2
 Erosion, iii, 5, 1, 2, 7, 8, 9, 13, 14, 26, 31, 32, 39,
 45, 53, 54, 55, 56, 2, 3, 6, 9
 essential fish habitat, 6
 Essential Fish Habitat, iii, 5, 61, 65

—F—

farmland, 63
 Farmland, 2, 63
 Federal, i, 2, 1, 3, 4, 5, 6, 7, 8, 23, 29, 38, 45, 51,
 55, 56, 60, 61, 62, 63, 64, 65, 66, 68, 1, 2, 6
 Fish, 6, 60, 64, 6
 Fish and Wildlife, 2, 5, 62, 72, 8

—G—

Gopher Tortoise, 72
 Green Sea Turtle, 34

—H—

Habitat, 1, 6, 15, 16, 23, 24, 25, 26, 32, 34, 35, 36,
 37, 38, 40, 43, 54, 59, 60, 2, 8
 Hazardous, 6, 8
 Health, 4
 Historic, ii, 1, 2, 16, 26, 27, 38, 54, 62, 7, 1
 Historic Preservation, ii, 2, 62, 1

—I—

Impact, 5
 Income, 66, 67, 68
 Indirect Effects, 15
 Infrastructure, 1, 2, 4, 7, 8, 18, 34, 42, 44, 53, 55,
 66, 6, 2
 invasive, 68
 Invasive, 3, 68
 Irretrievable, 2, 59
 Irreversible, 2, 59
 Resources, 59

—L—

Land Use, 51, 3, 5
 Location, 1, 3, 2, 3, 4, 12, 2, 3

—M—

migratory bird, 6, 35, 36, 64, 68
 Migratory Bird, iii, 1, 3, 16, 26, 35, 54, 64, 68
 Mitigate, 4, 6, 2
 model, 4
 Monitoring, 23, 34, 35, 2

—N—

National Environmental Policy Act, i, 2, 5, 62, 71
 National Marine Fisheries Service, iii, 5, 2
 Native Americans, 29, 51
 Natural or depletable resources, 49
 Need, 5, 7, 33, 35, 3
 NEPA, i, ii, 5, 8, 9, 15, 16, 17, 18, 20, 23, 26, 28,
 29, 32, 33, 34, 35, 37, 38, 40, 41, 42, 44, 45,
 46, 48, 50, 51, 53, 62, 63, 65, 66, 8, 2
 Nesting, ii, 15, 23, 33, 34, 35, 54, 60, 2
 No Action, i, 4, 15, 33
 NOAA, 23, 1, 2
 Noise, 1, 2, 18, 29, 47, 57
 Nourishment, 1, 9, 14, 37, 38, 53, 54, 55, 56, 57,
 59, 60, 61, 64, 72

—O—

Offshore, 2, 31, 59
 Oil, 61, 8, 9
 Other wildlife resources, 26, 37

—P—

Petroleum, 9
 Preparers, 3, 70
 Preservation, ii, 27, 72, 2
 Public Hearing, 7
 Purpose, 1
 Purpose and Need, 66

—R—

Real Estate, 68
 Recreation, 1, 2, 6, 17, 28, 44, 45, 56, 60, 64, 3, 4,
 7, 2
 Recreation resources, 44
 Reef, 2
 Renourishment, 8, 36, 37, 51, 72
 Resources, 1, 2, 3, 6, 16, 17, 19, 20, 22, 26, 27, 28,
 37, 38, 39, 40, 42, 44, 45, 49, 50, 51, 54, 55,
 57, 59, 60, 61, 64, 68, 2, 3, 5, 6, 7, 8, 9
 ir retrievable commitment, 59
 Response, 1, 2
 restoration, 3, 37, 2
 Restoration, 72

—S—

Safety, 31, 60, 3, 4, 6
 Scoping, 1, 3, 4, 6, 62, 65, 71, 1, 4
 Sea Turtle Nesting, 34
 Section 401, 63
 Section 404, 63, 65, 2
 Sediment, 30, 34, 49, 55, 8, 2
 Sedimentation, 37, 2
 SHPO, ii, 5, 27, 39, 62
 Solid Waste, 4, 8
 State, ii, 2, 5, 27, 41, 55, 56, 60, 61, 62, 63, 64, 68,
 1, 2, 6, 7, 8, 9, 1
 State Historic Preservation, ii, 5, 27, 7
 Summary, i, 4, 14, 15, 30, 53, 1

—T—

Threatened, 1, 15, 23, 33, 54
 Threatened and endangered species, 33
 Endangered Species Act, 62
 migratory birds, 26, 35, 64
 piping plover, 24
 red knot, 25
 sea turtles, 23
 summary of cumulative impacts, 54
 tortoise, 73
 Transfer, 59, 8
 Turbidity, 37, 41, 55
 turtle, 23, 24
 Turtle, 4, 23, 24

—U—

U.S. Army Corps of Engineers, i, 5, 1, 5, 70, 72
 U.S. Environmental Protection Agency, 5, 63, 72
 U.S. Fish and Wildlife Service, ii, 5, 23, 33, 68, 72,
 73, 4
 Unique, 60, 63, 7
 Upland, 4, 9, 17, 31, 41, 55, 59, 2
 Utility, ii

—V—

Vegetation, i, 1, 6, 11, 13, 14, 15, 17, 20, 21, 30,
31, 32, 33, 34, 36, 37, 40, 41, 43, 44, 46, 47,
48, 50, 53, 2

—W—

Water quality
Clean Water Act, 65

Water quality, 41
certification, ii, 63
permit, 61
standards, ii, 63
summary of cumulative impacts, 55

Water Quality Certification, 55
Water Resources, 5, 2, 8
Wetland, 2
wildlife, 6, 26, 37, 38, 6

APPENDIX A
Coastal Zone Management Consistency

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

**Dunes and Other Resiliency Design Refinements for
Shore Protection Projects**

Manatee County, FL

Enforceable Policy. Florida State Statutes 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

APPENDIX A: COASTAL ZONE MANAGEMENT CONSISTENCY

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 addition or resiliency design refinements (dune construction; dune vegetation; vehicle access modifications; and pedestrian access modifications) will further the intent of this chapter. The proposed plans and information have been submitted to the State 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

APPENDIX A: COASTAL ZONE MANAGEMENT CONSISTENCY

Enforceable policy includes only:

Section 163.3164 Local Government Comprehensive Planning and Land Development Regulation Act

Section 163.3177(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.

Section 163.3177 (10)(h), public facilities and services needed to support development shall be available concurrent with the effects of such development in accordance with s. [163.3180](#). [see .3180(2)(a-c), (5)(a&c), (6), and (8); below].

Section 163.3177 (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.

Section 163.3177 (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.

Section 163.3177 (11)(c), maximize the use of existing facilities and services through redevelopment, urban infill development, and other strategies for urban revitalization.

Section 163.3178(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.

Section 163.3178 (2)(d-j); studies, surveys, and data; be consistent with coastal resource plans prepared and adopted pursuant to general or special law; and contain:

Section 163.3178 (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.

Section 163.3178 (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.

Section 163.3178 (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.

Section 163.3178 (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 Section 342.07.

Section 163.3178 (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 Section 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.

APPENDIX A: COASTAL ZONE MANAGEMENT CONSISTENCY

(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 effects.

.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 effects 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 effect [on a transportation facility] is consistent with this part.

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

APPENDIX A: COASTAL ZONE MANAGEMENT CONSISTENCY

163.3194(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.

163.3202(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.

163.3220(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.

Chapters 186 and 187, F.S., State and Regional Planning. These chapters establish the State Comprehensive Plan which sets goals that articulate a strategic vision of the State's future. Its purpose is to define in a broad sense, goals, and policies that provide decision-makers directions for the future and provide long-range guidance for an orderly social, economic and physical growth.

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

Chapter 252, F.S., Emergency Management. This chapter creates a State emergency management agency with authority to ensure that preparations of this State will be adequate to deal with, reduce vulnerability to, and recover from such emergencies and disasters; to provide for the common defense; to protect the public peace, health and safety; and to preserve the lives and property of the people of Florida.

Response: The addition of dunes and other resiliency features would help to mitigate the harmful consequences of coastal storm events pursuant to Section 252.44 of this Chapter. The proposed work would be consistent with the guidelines outlined in this Chapter.

Chapter 253, Florida Statute (2018) State Lands. This chapter governs the management of State of Florida [Board of Trustees of the Internal Improvement Trust Fund State Lands](#), including submerged State lands and resources within State lands. This includes archeological and historical resources; water resources; fish and wildlife resources; beaches and dunes; submerged grass beds and other benthic communities; swamps, marshes and other wetlands; mineral resources; unique natural features; submerged lands; spoil islands; and artificial reefs.

Response: The proposed project complies with State regulations pertaining to the above resources; therefore, it would comply with the intent of this chapter.

Chapters 259, 260, and 375, Florida Statute (2018) Land Acquisition for Conservation and Recreation, Greenways and Trails, Outdoor Recreation and Conservation Lands. These chapters authorize agencies of the State of Florida to acquire land: to protect environmentally sensitive areas for conservation; and for outdoor recreation, including greenways and trails.

Response: The proposed project will not have an adverse effect on State-owned environmentally sensitive or recreational lands. It does not require land acquisition for the stated purposes.

Chapter 258, Florida Statute (2018) State Parks and Aquatic Preserves. This chapter authorizes the State to manage State parks and preserves. Consistency with this statute would include

consideration of projects that would directly or indirectly adversely effect park property, natural resources, park programs, management, or operations.

Response: The proposed project will comply with this chapter and will not directly or indirectly adversely effect park property, natural resources, park programs, management, or operations.

Chapter 267, Florida Statute (2018) Historical Resources. This chapter establishes the procedures for implementing the Florida Historic Resources Act responsibilities.

Response: The proposed project has been coordinated with the Florida State Historic Preservation Officer. Historic preservation compliance is complete by letter dated 30 June 2020 (Appendix B) and meets all responsibilities under Chapter 267.

Chapter 288, Florida Statute (2018) Commercial Development and Capital Improvements. This chapter directs the State Office of Economic and Demographic Research and the Office of Program Policy Analysis and Government Accountability to evaluate existing State economic development programs (e.g., tax credits, tax refunds, sales tax exemptions, etc.) for effectiveness and value to taxpayers.

Response: This chapter is not applicable as the project does not involve any of the economic incentive programs listed in Chapter 288.

Chapters 334, 335, 336, 337, 338, and 339, Florida Statute (2018) Public Transportation. These chapters authorize the planning and development of a safe, balanced, and efficient transportation system.

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

Chapter 379, Florida Statute (2018) Saltwater Fisheries. This chapter directs the State to preserve, manage and protect the marine, crustacean, shell and anadromous fishery resources in State waters; to protect and enhance the marine and estuarine environment; to regulate fishermen and vessels of the state engaged in the taking of such resources within or without State waters; to issue licenses for the taking and processing products of fisheries; to secure and maintain statistical records of the catch of each such species; and, to conduct scientific, economic, and other studies and research.

Response: The material (sediment) proposed for the dune resiliency evaluation for this shore protection project has been evaluated in the prior NEPA documents and would not have a substantial adverse effect on saltwater fisheries. The proposed project is consistent with the goals of this chapter.

Chapter 379, Florida Statute (2018) Wildlife. This chapter establishes the Florida Fish and Wildlife Conservation Commission and directs it to manage freshwater aquatic life and wild animal life and their habitat to perpetuate a diversity of species with densities and distributions

which provide sustained ecological, recreational, scientific, educational, aesthetic, and economic benefits.

Response: The project is expected to have no significant effect on freshwater aquatic life or wild animal life, as all work will be conducted above the mean high water line. Consultation for the Endangered Species Act and the Magnuson-Stevens Fishery Conservation and Management Act is being coordinated with the USFWS and NMFS.

Chapter 373, Florida Statute (2018) Water Resources. This chapter provides the authority to regulate the withdrawal, diversion, storage, and consumption of water.

Response: This project does not involve water resources as described by this chapter.

Chapter 376, Florida Statute (2018) Pollutant Discharge Prevention and Removal. This chapter regulates the transfer, storage, and transportation of pollutants and the cleanup of pollutant discharges.

Response: The contract specifications will prohibit USACE and/or its 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 recycling or disposal of solid wastes. A spill prevention plan will be required. The proposed project is consistent with the intent of this chapter.

Chapter 377, Florida Statute (2018) Energy Resources. This chapter authorizes the regulation of all phases of exploration, drilling, and production of oil, gas, and other petroleum products.

Response: The proposed project does not involve the exploration, drilling or production of gas, oil or petroleum product and therefore, this chapter does not apply.

Chapter 380, Florida Statute (2018) Land and Water Management. This chapter establishes criteria and procedures to assure that local land development decisions consider the regional effect nature of proposed large-scale development.

Response: The proposed project will not have any regional effect on resources in the area. Therefore, the project is consistent with the goals of this chapter.

Chapter 388, Florida Statute (2018) Mosquito Control. This chapter provides for a comprehensive approach for abatement or suppression of mosquitoes and other pest arthropods within the State.

Response: The proposed project will not further the propagation of mosquitoes or other pest arthropods. Therefore, the project is consistent with the goals of this chapter.

Chapter 403, Florida Statute (2018) Environmental Control. This chapter authorizes the regulation of pollution of the air and waters of the State by the FDEP.

Response: An Environmental Assessment addressing the proposed project effects has been prepared and will be reviewed by the appropriate resource agencies including the FDEP.

Environmental protection measures will be implemented to ensure that no lasting adverse effects on water quality, air quality, or other environmental resources will occur. Coordination with the FDEP shall occur prior to construction. The proposed project complies with the intent of this chapter.

Chapter 582, Florida Statute (2018) Soil and Water Conservation. This chapter establishes policy for the conservation of the State soil and water through the Department of Agriculture. Land use policies will be evaluated in terms of their tendency to cause or contribute to soil erosion or to conserve, develop, and utilize soil and water resources both onsite or in adjoining properties affected by the project. Particular attention will be given to projects on or near agricultural lands.

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

APPENDIX B
Pertinent Correspondence

Hershorin, Aubree G CIV USARMY CESAJ (USA)

From: Bradley Mueller <bradleymueller@semtribe.com>
Sent: Tuesday, July 21, 2020 10:00 AM
To: Dunn, Angela E CIV USARMY CESAJ (USA)
Cc: Altes, Christopher F CIV USARMY CESAJ (USA)
Subject: [Non-DoD Source] Anna Maria Reach Manatee County Shore Protection Project, EA and EDR

SEMINOLE TRIBE OF FLORIDA TRIBAL HISTORIC PRESERVATION OFFICE

TRIBAL HISTORIC
PRESERVATION OFFICE

SEMINOLE TRIBE OF FLORIDA

30290 JOSIE BILLIE HIGHWAY
PMB 1004
CLEWISTON, FL 33440

THPO PHONE: (863) 983-6549
FAX: (863) 902-1117

THPO WEBSITE: WWW.STOFTHPO.COM



TRIBAL OFFICERS

MARCELLUS W. OSCEOLA JR.
CHAIRMAN

MITCHELL CYPRESS
VICE CHAIRMAN

LAVONNE ROSE
SECRETARY

PETER A. HAHN
TREASURER

July 21, 2020

Ms. Angela E. Dunn
Chief, Environmental Branch
Planning and Policy Division
Department of the Army
Corps of Engineers, Jacksonville District
701 San Marco Boulevard
Jacksonville, FL 32207-8915

Subject: Anna Maria Reach Manatee County Shore Protection Project, EA and EDR, Florida
THPO Compliance Tracking Number: 0031582

Dear Ms. Dunn,

Thank you for contacting the Seminole Tribe of Florida – Tribal Historic Preservation Office (STOF-THPO), Compliance Section regarding the *Anna Maria Reach Manatee County Shore Protection Project, EA and EDR, Florida*. The proposed undertaking does fall within the STOF Area of Interest. We have reviewed the documents you provided and have no objections at this time. Please notify us if any archaeological, historical, or burial resources are inadvertently discovered during project implementation and feel free to contact us with any questions or concerns.

Respectfully,

Bradley M. Mueller, MA, Compliance Specialist
STOF-THPO, Compliance Review Section
30290 Josie Billie Hwy, PMB 1004
Clewiston, FL 33440

Office: 863-983-6549 ext 12245

Fax: 863-902-1117

Email: bradleymueller@semtibe.com

Web: Blockedwww.stofthpo.com



DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, JACKSONVILLE DISTRICT
701 SAN MARCO BOULEVARD
JACKSONVILLE, FLORIDA 32207-8915

Planning and Policy Division
Environmental Branch

Kimberly Middleton
Planner II
Manatee County Planning Review Division
1112 Manatee Avenue West
Bradenton, FL 34205

Re: Engineering Design Report for Manatee County Shore Protection Project, Florida

Dear Ms. Middleton:

The U.S. Army Corps of Engineers, Jacksonville District (Corps) is drafting an Environmental Assessment (EA) and Engineering Documentation Report (EDR) regarding optional refinements to an existing shore protection project (SPP) in Manatee County, Florida (Attachment 1). The EA covers the environmental effects of the design refinements documented in the EDR. The EDR proposes refinements to the previously-constructed project, consisting of the incorporation of existing dunes, construction of new dunes, closing gaps in dunes, modifying dunes to the existing project designs, and recommends additional related features designed to increase shoreline resiliency. The currently-authorized project designs do not allow for the Corps to re-construct dunes during coastal storm damage reduction projects, only the beach berm. The proposed EDR would allow for the future construction of dunes as part of the federal project for the Anna Maria reach in the Manatee County SPP.

The previously-constructed project expressly addressed areas of high erosion by nourishing beach berms. The Corps has previously constructed the SPP in 1992, 2002, 2005, 2011, 2013, and 2020. In June 2019, pursuant to Florida Statutes § 161.101 and § 161.161, the Florida Department of Environmental Protection (FDEP) designated this area as Critically Eroded Shoreline (as defined in rule 62B-36.002(5) of the Florida Administrative Code). The current shape and extent of the coast is largely a product of the constructed projects. The current waterline extends 50 meters further seaward than the erosion control line established at the mean high water line when the SPP was initiated. Houses, hotels, and other structures occupy the lands that were once dunes, but the SPP has allowed for the formation of dunes within the existing project area. The proposed dunes are in areas generally shown as in the water or open beach in 1940 aerial photography.

The primary recommendation of the EDR is the incorporation of dunes in seven segments within the existing SPP footprint. This includes the closing of 10 gaps in these dunes within the existing SPP footprint. In one location, Manatee Public Beach, the EDR proposes extending the project dunes east of the ECL and outside of the original SPP footprint.

In this area, the dunes visible in historic aerial photography are no longer extant, reduce to flat beach berm. The EDR proposes the addition of sand fencing along footpaths to create diagonal crossing of dunes and trap additional sand, to limit erosion. It also propose modifying five vehicle access points by angling the path to not be perpendicular to the shore, to prevent waves from moving directly through and then flanking the surrounding dune.

The area of potential effects (APE) for the EDR features includes the footprint of the dunes and proposed related features, as shown in the attachment to this letter. The APE for visual effects of the features is the viewshed of the dunes. The Florida State Historic Preservation Officer concurred with the Corps' previous determination of no adverse effects to historic properties by construction of the Anna Marie reach of the Manatee County SPP in 2019 (DHR Project File No.: 2019-3977). The EDR proposes adding the existing dunes to future plans should severe erosion ever destroy the dunes. The future replacement of destroyed dunes and related features provide additional shoreline protection to cultural resources. By matching the profile of existing dune elevations, historic property viewsheds will not be adversely affected. The added measures at pedestrian and vehicle access points occur entirely in extensively-disturbed locations and will not affect historic properties.

The Corps has determined that the incorporation of dunes and resiliency measures into authorized construction project will have no adverse effects on historic properties. The EA recommends refining the plans to include dunes and other features to make these shorelines more resilient and potentially extend the life of the projects. Pursuant to Section 106 of the NHPA (54 U.S.C. § 306108) and it's implementing regulations (36 C.F.R. § 800), the Corps kindly requests your comments on the determination of effects within 30 days of the date of this letter. If there are any questions concerns, please contact Mr. Chris Altes by phone at 904-232-1694 or e-mail at christopher.f.altes@usace.army.mil.

Sincerely,

Angela E. Dunn
Chief, Environmental Branch

Attachment A
Location of EDR features







DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, JACKSONVILLE DISTRICT
701 SAN MARCO BOULEVARD
JACKSONVILLE, FLORIDA 32207-8915

Planning and Policy Division
Environmental Branch

Tim Parsons, Ph.D.
State Historic Preservation Officer
Division of Historical Resources
500 South Bronough Street
Tallahassee, Florida 32399-0250

Re: Engineering Design Report for Manatee County Shore Protection Project, Florida

Dear Dr. Parsons:

The U.S. Army Corps of Engineers, Jacksonville District (Corps) is drafting an Environmental Assessment (EA) and Engineering Documentation Report (EDR) regarding optional refinements to an existing shore protection project (SPP) in Manatee County, Florida (Attachment 1). The EA covers the environmental effects of the design refinements documented in the EDR. The EDR proposes refinements to the previously-constructed project, consisting of the incorporation of existing dunes, construction of new dunes, closing gaps in dunes, modifying dunes to the existing project designs, and recommends additional related features designed to increase shoreline resiliency. The currently-authorized project designs do not allow for the Corps to re-construct dunes during coastal storm damage reduction projects, only the beach berm. The proposed EDR would allow for the future construction of dunes as part of the federal project for the Anna Maria reach in the Manatee County SPP.

The previously-constructed project expressly addressed areas of high erosion through nourishing beach berms. The Corps has previously constructed the SPP in 1992, 2002, 2005, 2011, 2013, and 2020. In June 2019, pursuant to Florida Statutes § 161.101 and § 161.161, the Florida Department of Environmental Protection (FDEP) designated this area as Critically Eroded Shoreline (as defined in rule 62B-36.002(5) of the Florida Administrative Code). The current shape and extent of the coast is largely a product of the constructed projects. The current waterline extends 50 meters further seaward than the erosion control line established at the mean high water line when the SPP was initiated. Houses, hotels, and other structures occupy the lands that were once dunes, but the SPP has allowed for the formation of dunes within the existing project area. The proposed dunes are in areas generally shown as in the water or open beach in 1940 aerial photography.

The primary recommendation of the EDR is the incorporation of dunes in seven segments within the existing SPP footprint. This includes the closing of 10 gaps in these dunes within the existing SPP footprint. In one location, Manatee Public Beach, the EDR proposes extending the project dunes east of the ECL and outside of the original SPP footprint. In this area, the dunes visible in historic aerial photography are no longer extant, reduce to flat beach berm.

The EDR proposes the addition of sand fencing along footpaths to create diagonal crossing of dunes and trap additional sand, to limit erosion. It also propose modifying five vehicle access points by angling the path to not be perpendicular to the shore, to prevent waves from moving directly through and then flanking the surrounding dune.

The area of potential effects (APE) for the EDR features includes the footprint of the dunes and proposed related features, as shown in the attachment to this letter. The APE for visual effects of the features is the viewshed of the dunes. The Florida State Historic Preservation Officer concurred with the Corps' previous determination of no adverse effects to historic properties by construction of the Anna Marie reach of the Manatee County SPP in 2019 (DHR Project File No.: 2019-3977). The EDR proposes adding the existing dunes to future plans should severe erosion ever destroy the dunes. The future replacement of destroyed dunes and related features provide additional shoreline protection to cultural resources. By matching the profile of existing dune elevations, historic property viewsheds will not be adversely affected. The added measures at pedestrian and vehicle access points occur entirely in extensively-disturbed locations and will not affect historic properties.

The Corps has determined that the incorporation of dunes and resiliency measures into authorized construction project will have no adverse effects on historic properties. The EA recommends refining the plans to include dunes and other features to make these shorelines more resilient and potentially extend the life of the projects. Pursuant to Section 106 of the NHPA (54 U.S.C. § 306108) and it's implementing regulations (36 C.F.R. § 800), the Corps kindly requests your comments on the determination of effects within 30 days of the date of this letter. If there are any questions concerns, please contact Mr. Chris Altes by phone at 904-232-1694 or e-mail at christopher.f.altes@usace.army.mil.

Sincerely,

Angela E. Dunn
Chief, Environmental Branch

Attachment A
Location of EDR features







DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, JACKSONVILLE DISTRICT
701 SAN MARCO BOULEVARD
JACKSONVILLE, FLORIDA 32207-8915

Planning and Policy Division
Environmental Branch

David Frank
Tribal Historic Preservation Officer
Seminole Nation of Oklahoma
P.O. Box 1498
Wewoka, OK 74884

Re: Engineering Design Report for Manatee County Shore Protection Project, Florida

Dear Mr. Frank:

The U.S. Army Corps of Engineers, Jacksonville District (Corps) is drafting an Environmental Assessment (EA) and Engineering Documentation Report (EDR) regarding optional refinements to an existing shore protection project (SPP) in Manatee County, Florida (Attachment 1). The EA covers the environmental effects of the design refinements documented in the EDR. The EDR proposes refinements to the previously-constructed project, consisting of the incorporation of existing dunes, construction of new dunes, closing gaps in dunes, modifying dunes to the existing project designs, and recommends additional related features designed to increase shoreline resiliency. The currently-authorized project designs do not allow for the Corps to re-construct dunes during coastal storm damage reduction projects, only the beach berm. The proposed EDR would allow for the future construction of dunes as part of the federal project for the Anna Maria reach in the Manatee County SPP.

The previously-constructed project expressly addressed areas of high erosion through nourishing beach berms. The Corps has previously constructed the SPP in 1992, 2002, 2005, 2011, 2013, and 2020. In June 2019, pursuant to Florida Statutes § 161.101 and § 161.161, the Florida Department of Environmental Protection (FDEP) designated this area as Critically Eroded Shoreline (as defined in rule 62B-36.002(5) of the Florida Administrative Code). The current shape and extent of the coast is largely a product of the constructed projects. The current waterline extends 50 meters further seaward than the erosion control line established at the mean high water line when the SPP was initiated. Houses, hotels, and other structures occupy the lands that were once dunes, but the SPP has allowed for the formation of dunes within the existing project area. The proposed dunes are in areas generally shown as in the water or open beach in 1940 aerial photography.

The primary recommendation of the EDR is the incorporation of dunes in seven segments within the existing SPP footprint. This includes the closing of 10 gaps in these dunes within the existing SPP footprint. In one location, Manatee Public Beach, the EDR proposes extending the project dunes east of the ECL and outside of the original SPP footprint. In this area, the dunes visible in historic aerial photography are no longer extant, reduce to flat beach berm.

The EDR proposes the addition of sand fencing along footpaths to create diagonal crossing of dunes and trap additional sand, to limit erosion. It also propose modifying five vehicle access points by angling the path to not be perpendicular to the shore, to prevent waves from moving directly through and then flanking the surrounding dune.

The area of potential effects (APE) for the EDR features includes the footprint of the dunes and proposed related features, as shown in the attachment to this letter. The APE for visual effects of the features is the viewshed of the dunes. The Florida State Historic Preservation Officer concurred with the Corps' previous determination of no adverse effects to historic properties by construction of the Anna Marie reach of the Manatee County SPP in 2019 (DHR Project File No.: 2019-3977). The EDR proposes adding the existing dunes to future plans should severe erosion ever destroy the dunes. The future replacement of destroyed dunes and related features provide additional shoreline protection to cultural resources. By matching the profile of existing dune elevations, historic property viewsheds will not be adversely affected. The added measures at pedestrian and vehicle access points occur entirely in extensively-disturbed locations and will not affect historic properties.

The Corps has determined that the incorporation of dunes and resiliency measures into authorized construction project will have no adverse effects on historic properties. The EA recommends refining the plans to include dunes and other features to make these shorelines more resilient and potentially extend the life of the projects. Pursuant to Section 106 of the NHPA (54 U.S.C. § 306108) and it's implementing regulations (36 C.F.R. § 800), the Corps kindly requests your comments on the determination of effects within 30 days of the date of this letter. If there are any questions concerns, please contact Mr. Chris Altes by phone at 904-232-1694 or e-mail at christopher.f.altes@usace.army.mil.

Sincerely,

Angela E. Dunn
Chief, Environmental Branch

Attachment A
Location of EDR features







DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, JACKSONVILLE DISTRICT
701 SAN MARCO BOULEVARD
JACKSONVILLE, FLORIDA 32207-8915

Planning and Policy Division
Environmental Branch

Paul Backhouse, Ph.D.
Tribal Historic Preservation Officer
Seminole Tribe of Florida
Ah Tah Thi Ki Museum
30290 Josie Billie Hwy., PMB 1004
Clewiston, FL 33440

Re: Engineering Design Report for Manatee County Shore Protection Project, Florida

Dear Dr. Backhouse:

The U.S. Army Corps of Engineers, Jacksonville District (Corps) is drafting an Environmental Assessment (EA) and Engineering Documentation Report (EDR) regarding optional refinements to an existing shore protection project (SPP) in Manatee County, Florida (Attachment 1). The EA covers the environmental effects of the design refinements documented in the EDR. The EDR proposes refinements to the previously-constructed project, consisting of the incorporation of existing dunes, construction of new dunes, closing gaps in dunes, modifying dunes to the existing project designs, and recommends additional related features designed to increase shoreline resiliency. The currently-authorized project designs do not allow for the Corps to re-construct dunes during coastal storm damage reduction projects, only the beach berm. The proposed EDR would allow for the future construction of dunes as part of the federal project for the Anna Maria reach in the Manatee County SPP.

The previously-constructed project expressly addressed areas of high erosion through nourishing beach berms. The Corps has previously constructed the SPP in 1992, 2002, 2005, 2011, 2013, and 2020. In June 2019, pursuant to Florida Statutes § 161.101 and § 161.161, the Florida Department of Environmental Protection (FDEP) designated this area as Critically Eroded Shoreline (as defined in rule 62B-36.002(5) of the Florida Administrative Code). The current shape and extent of the coast is largely a product of the constructed projects. The current waterline extends 50 meters further seaward than the erosion control line established at the mean high water line when the SPP was initiated. Houses, hotels, and other structures occupy the lands that were once dunes, but the SPP has allowed for the formation of dunes within the existing project area. The proposed dunes are in areas generally shown as in the water or open beach in 1940 aerial photography.

The primary recommendation of the EDR is the incorporation of dunes in seven segments within the existing SPP footprint. This includes the closing of 10 gaps in these dunes within the existing SPP footprint. In one location,

Manatee Public Beach, the EDR proposes extending the project dunes east of the ECL and outside of the original SPP footprint. In this area, the dunes visible in historic aerial photography are no longer extant, reduce to flat beach berm. The EDR proposes the addition of sand fencing along footpaths to create diagonal crossing of dunes and trap additional sand, to limit erosion. It also propose modifying five vehicle access points by angling the path to not be perpendicular to the shore, to prevent waves from moving directly through and then flanking the surrounding dune.

The area of potential effects (APE) for the EDR features includes the footprint of the dunes and proposed related features, as shown in the attachment to this letter. The APE for visual effects of the features is the viewshed of the dunes. The Florida State Historic Preservation Officer concurred with the Corps' previous determination of no adverse effects to historic properties by construction of the Anna Marie reach of the Manatee County SPP in 2019 (DHR Project File No.: 2019-3977). The EDR proposes adding the existing dunes to future plans should severe erosion ever destroy the dunes. The future replacement of destroyed dunes and related features provide additional shoreline protection to cultural resources. By matching the profile of existing dune elevations, historic property viewsheds will not be adversely affected. The added measures at pedestrian and vehicle access points occur entirely in extensively-disturbed locations and will not affect historic properties.

The Corps has determined that the incorporation of dunes and resiliency measures into authorized construction project will have no adverse effects on historic properties. The EA recommends refining the plans to include dunes and other features to make these shorelines more resilient and potentially extend the life of the projects. Pursuant to Section 106 of the NHPA (54 U.S.C. § 306108) and it's implementing regulations (36 C.F.R. § 800), the Corps kindly requests your comments on the determination of effects within 30 days of the date of this letter. If there are any questions concerns, please contact Mr. Chris Altes by phone at 904-232-1694 or e-mail at christopher.f.altes@usace.army.mil.

Sincerely,

Angela E. Dunn
Chief, Environmental Branch

Attachment A
Location of EDR features







DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, JACKSONVILLE DISTRICT
701 SAN MARCO BOULEVARD
JACKSONVILLE, FLORIDA 32207-8915

Planning and Policy Division
Environmental Branch

Kevin Donaldson
NAGPRA Representative
Miccosukee Tribe of Indians of Florida
P.O. Box 440021
Tamiami Station
Miami, FL 33144

Re: Engineering Design Report for Manatee County Shore Protection Project, Florida

Dear Mr. Donaldson:

The U.S. Army Corps of Engineers, Jacksonville District (Corps) is drafting an Environmental Assessment (EA) and Engineering Documentation Report (EDR) regarding optional refinements to an existing shore protection project (SPP) in Manatee County, Florida (Attachment 1). The EA covers the environmental effects of the design refinements documented in the EDR. The EDR proposes refinements to the previously-constructed project, consisting of the incorporation of existing dunes, construction of new dunes, closing gaps in dunes, modifying dunes to the existing project designs, and recommends additional related features designed to increase shoreline resiliency. The currently-authorized project designs do not allow for the Corps to re-construct dunes during coastal storm damage reduction projects, only the beach berm. The proposed EDR would allow for the future construction of dunes as part of the federal project for the Anna Maria reach in the Manatee County SPP.

The previously-constructed project expressly addressed areas of high erosion by nourishing beach berms. The Corps has previously constructed the SPP in 1992, 2002, 2005, 2011, 2013, and 2020. In June 2019, pursuant to Florida Statutes § 161.101 and § 161.161, the Florida Department of Environmental Protection (FDEP) designated this area as Critically Eroded Shoreline (as defined in rule 62B-36.002(5) of the Florida Administrative Code). The current shape and extent of the coast is largely a product of the constructed projects. The current waterline extends 50 meters further seaward than the erosion control line established at the mean high water line when the SPP was initiated. Houses, hotels, and other structures occupy the lands that were once dunes, but the SPP has allowed for the formation of dunes within the existing project area. The proposed dunes are in areas generally shown as in the water or open beach in 1940 aerial photography.

The primary recommendation of the EDR is the incorporation of dunes in seven segments within the existing SPP footprint. This includes the closing of 10 gaps in these dunes within the existing SPP footprint. In one location, Manatee Public Beach, the EDR proposes extending the project dunes east of the ECL and outside of the original SPP footprint.

In this area, the dunes visible in historic aerial photography are no longer extant, reduce to flat beach berm. The EDR proposes the addition of sand fencing along footpaths to create diagonal crossing of dunes and trap additional sand, to limit erosion. It also propose modifying five vehicle access points by angling the path to not be perpendicular to the shore, to prevent waves from moving directly through and then flanking the surrounding dune.

The area of potential effects (APE) for the EDR features includes the footprint of the dunes and proposed related features, as shown in the attachment to this letter. The APE for visual effects of the features is the viewshed of the dunes. The Florida State Historic Preservation Officer concurred with the Corps' previous determination of no adverse effects to historic properties by construction of the Anna Marie reach of the Manatee County SPP in 2019 (DHR Project File No.: 2019-3977). The EDR proposes adding the existing dunes to future plans should severe erosion ever destroy the dunes. The future replacement of destroyed dunes and related features provide additional shoreline protection to cultural resources. By matching the profile of existing dune elevations, historic property viewsheds will not be adversely affected. The added measures at pedestrian and vehicle access points occur entirely in extensively-disturbed locations and will not affect historic properties.

The Corps has determined that the incorporation of dunes and resiliency measures into authorized construction project will have no adverse effects on historic properties. The EA recommends refining the plans to include dunes and other features to make these shorelines more resilient and potentially extend the life of the projects. Pursuant to Section 106 of the NHPA (54 U.S.C. § 306108) and it's implementing regulations (36 C.F.R. § 800), the Corps kindly requests your comments on the determination of effects within 30 days of the date of this letter. If there are any questions concerns, please contact Mr. Chris Altes by phone at 904-232-1694 or e-mail at christopher.f.altes@usace.army.mil.

Sincerely,

Angela E. Dunn
Chief, Environmental Branch

Attachment A
Location of EDR features







DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, JACKSONVILLE DISTRICT
701 SAN MARCO BOULEVARD
JACKSONVILLE, FLORIDA 32207-8915

Planning and Policy Division
Environmental Branch

Jane Maylen
Tribal Historic Preservation Officer (acting)
Thlopthlocco Tribal Town
P.O. Box 188
Okemah, OK 74859

Re: Engineering Design Report for Manatee County Shore Protection Project, Florida

Dear Ms. Maylen:

The U.S. Army Corps of Engineers, Jacksonville District (Corps) is drafting an Environmental Assessment (EA) and Engineering Documentation Report (EDR) regarding optional refinements to an existing shore protection project (SPP) in Manatee County, Florida (Attachment 1). The EA covers the environmental effects of the design refinements documented in the EDR. The EDR proposes refinements to the previously-constructed project, consisting of the incorporation of existing dunes, construction of new dunes, closing gaps in dunes, modifying dunes to the existing project designs, and recommends additional related features designed to increase shoreline resiliency. The currently-authorized project designs do not allow for the Corps to re-construct dunes during coastal storm damage reduction projects, only the beach berm. The proposed EDR would allow for the future construction of dunes as part of the federal project for the Anna Maria reach in the Manatee County SPP.

The previously-constructed project expressly addressed areas of high erosion through nourishing beach berms. The Corps has previously constructed the SPP in 1992, 2002, 2005, 2011, 2013, and 2020. In June 2019, pursuant to Florida Statutes § 161.101 and § 161.161, the Florida Department of Environmental Protection (FDEP) designated this area as Critically Eroded Shoreline (as defined in rule 62B-36.002(5) of the Florida Administrative Code). The current shape and extent of the coast is largely a product of the constructed projects. The current waterline extends 50 meters further seaward than the erosion control line established at the mean high water line when the SPP was initiated. Houses, hotels, and other structures occupy the lands that were once dunes, but the SPP has allowed for the formation of dunes within the existing project area. The proposed dunes are in areas generally shown as in the water or open beach in 1940 aerial photography.

The primary recommendation of the EDR is the incorporation of dunes in seven segments within the existing SPP footprint. This includes the closing of 10 gaps in these dunes within the existing SPP footprint. In one location, Manatee Public Beach, the EDR proposes extending the project dunes east of the ECL and outside of the original SPP footprint. In this area, the dunes visible in historic aerial photography are no longer extant, reduce to flat beach berm.

The EDR proposes the addition of sand fencing along footpaths to create diagonal crossing of dunes and trap additional sand, to limit erosion. It also propose modifying five vehicle access points by angling the path to not be perpendicular to the shore, to prevent waves from moving directly through and then flanking the surrounding dune.

The area of potential effects (APE) for the EDR features includes the footprint of the dunes and proposed related features, as shown in the attachment to this letter. The APE for visual effects of the features is the viewshed of the dunes. The Florida State Historic Preservation Officer concurred with the Corps' previous determination of no adverse effects to historic properties by construction of the Anna Marie reach of the Manatee County SPP in 2019 (DHR Project File No.: 2019-3977). The EDR proposes adding the existing dunes to future plans should severe erosion ever destroy the dunes. The future replacement of destroyed dunes and related features provide additional shoreline protection to cultural resources. By matching the profile of existing dune elevations, historic property viewsheds will not be adversely affected. The added measures at pedestrian and vehicle access points occur entirely in extensively-disturbed locations and will not affect historic properties.

The Corps has determined that the incorporation of dunes and resiliency measures into authorized construction project will have no adverse effects on historic properties. The EA recommends refining the plans to include dunes and other features to make these shorelines more resilient and potentially extend the life of the projects. Pursuant to Section 106 of the NHPA (54 U.S.C. § 306108) and it's implementing regulations (36 C.F.R. § 800), the Corps kindly requests your comments on the determination of effects within 30 days of the date of this letter. If there are any questions concerns, please contact Mr. Chris Altes by phone at 904-232-1694 or e-mail at christopher.f.altes@usace.army.mil.

Sincerely,

Angela E. Dunn
Chief, Environmental Branch

Attachment A
Location of EDR features







DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, JACKSONVILLE DISTRICT
701 SAN MARCO BOULEVARD
JACKSONVILLE, FLORIDA 32207-8915

Planning and Policy Division
Environmental Branch

DEC 03 2018

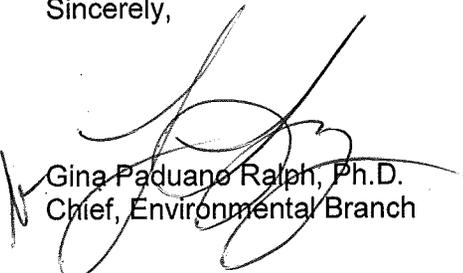
To Whom It May Concern

This scoping letter is being promulgated by the Jacksonville District, U.S. Army Corps of Engineers (Corps), in compliance with public coordination requirements of the National Environmental Policy Act (NEPA). The purpose of this correspondence is to formally initiate the scoping process as defined by 40 CFR 1501.7 to evaluate design changes to add or modify sand dunes (dunes) in 16 existing Federal Coastal Storm Risk Management (CSRM) projects in 10 counties (Figure 1).

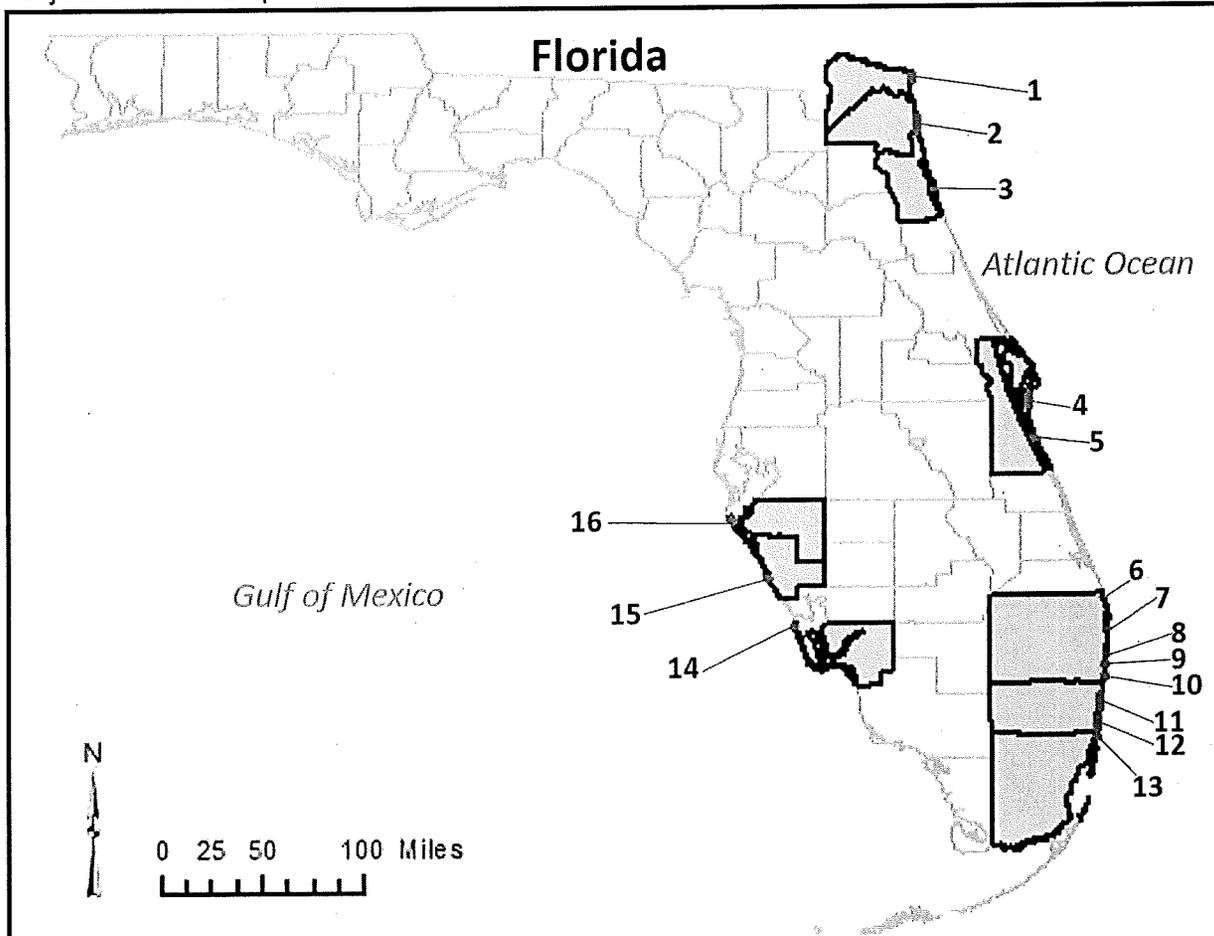
The Corps will evaluate each of the 16 existing federal CSRM projects to determine whether addition or modification of dunes will contribute to authorized project purposes and opportunities to increase project robustness, resiliency, and reliability per ECB 2018-2 which provides the policy and guidance for applying the Corps principles of resilience – Prepare, Absorb, Recover and Adapt (PARA). An evaluation of the performance of existing dunes, including reducing erosion and inundation damages, elongating nourishment intervals, decreasing nourishment volumes, and incidental environmental benefits will be made. A generalized dune template will be developed for comparison to the existing beach template; the dune template could include elongation of existing dunes, closing existing gaps in the dune line, realigning the current dune line or creating dunes in areas where they do not currently exist. Design considerations will also include vegetation and sand fencing which can enhance dune stability and beach accretion rates. The NEPA document, for the restoration or addition of dunes, may consider dune height, width, vegetation and other factors in assessing the design alternatives from a storm damage reduction viewpoint but also considering aesthetics, socioeconomic and view shed. Justification for modifying a project's design to include dunes will include criteria such as added robustness, resiliency, and redundancy to coastal storm impacts and adaptability to sea level rise. Economic justification for design changes will be included if those changes incur significant additional costs.

We welcome your views and comments on the proposed evaluation of design changes to include or modify dunes in 16 existing Federal CSRM projects in 10 counties. Your concerns will be appropriately considered and discussed in a NEPA assessment to update existing NEPA for each of the 16 projects. Please send your comments or inquiries to Ms. Wendy Dauberman at the letterhead address or via email at wendy.s.dauberman-zerby@usace.army.mil within thirty (30) days of the date of this letter. Please let us also know if you do not want to receive future notifications on this project. If you do not notify us that you would like to be removed from future notices, you will remain on our mailing list.

Sincerely,


Gina Paduano Ralph, Ph.D.
Chief, Environmental Branch

Project Location Map



Map ID	County	Project Name	Segment	Length (mi)
1	Nassau	Nassau County, FL Shore Protection Project	na	3.9
2	Duval	Duval County, FL Shore Protection Project	na	10
3	St. Johns	St. Johns County, FL Shore Protection Project	St. Augustine Beach	2.5
4	Brevard	Brevard County, FL Shore Protection Project	North Reach	9.4
5	Brevard	Brevard County, FL Shore Protection Project	South Reach	3.4
6	Palm Beach	Palm Beach County Shore Protection Project	Jupiter Carlin	1.1
7	Palm Beach	Palm Beach County Shore Protection Project	Mid-town	2.8
8	Palm Beach	Palm Beach County Shore Protection Project	Ocean Ridge	1.4
9	Palm Beach	Palm Beach County Shore Protection Project	Delray	1.7
10	Palm Beach	Palm Beach County Shore Protection Project	North Boca Raton	1.5
11	Broward	Broward County, FL Shore Protection Project	Segment II	11.3
12	Broward	Broward County, FL Shore Protection Project	Segment III	8.1
13	Dade	Dade County, FL Beach Erosion Control & Hurricane Protection Project	Sunny Isles	2.4
14	Lee	Lee County, FL Beach Erosion Control Project	Gasparilla	2.8
15	Sarasota	Sarasota County, FL Shore Protection Project	Venice	3.2
16	Manatee	Manatee County, FL Shore Protection Project	Anna Maria Island	4.2

APPENDIX B - PERTINENT CORRESPONDENCE

Table 9. Summary of comments received from the Dune Scoping Letter, mailed on 03 December 2018, and the USACE response.

COMMENTS	COMMENT SUMMARY	CORPS RESPONSE
Florida State Clearinghouse – Florida Department of Environmental Protection		
Date: December 05, 2018		
Chris Stahl, Coordinator	Email correspondence requesting whether USACE would like a consistency determination or review of the project.	At this time, a consistency determination is requested from the State. USACE is applying for a minor modification to the existing FDEP permit for the project, which will serve as the state’s final determination of consistency.
Seminole Nation of Oklahoma		
Date: January 10, 2018		
Theodore Isham Historic Preservation Officer	The Seminole Nation of Oklahoma requested additional information on the proposed plan to modify sand dunes in Florida.	USACE coordinated with the Seminole Nation of Oklahoma for this project. Additional information is found in the main report.
APTIM Coastal, Ports & Marine		
Date: December 14, 2018		
Lauren Floyd , Senior Marine Biologist	Expressed support for the effort described in the scoping letter on behalf of Manatee County, and offered assistance to the Corps in identifying and prioritizing potential areas for dunes in the Manatee County Shore Protection Project.	Coordination occurred with APTIM and Manatee County during the development of the alternatives described in the document.
Environmental Protection Agency (EPA)		
Date: December 18, 2018		
Chris Militscher	Wetlands: The EPA recommends the USACE avoid and minimize effects to wetlands and mitigate wetland effects according to the Clean Water Act Section 404(b)(1) Guidelines and related regulations. Dredging activities	Wetlands: No effects to wetlands are anticipated.

APPENDIX B - PERTINENT CORRESPONDENCE

COMMENTS	COMMENT SUMMARY	CORPS RESPONSE
<p>Chief, NEPA Program Office</p>	<p>could cause salinity levels to increase, which could convert freshwater/brackish wetlands into saltwater marshes. The EPA also recommends the USACE evaluate potential effects to increases in salinity levels due to any dredging activities. The EPA recommends the USACE evaluate the potential increases in salinity and document any potential conversion of freshwater wetlands into saltwater marshes and avoid, minimize and mitigate these effects, as appropriate. Additionally, the EPA recommends that the USACE avoid, minimize and mitigate any effects to Submerged Aquatic Vegetation (SAVs).</p> <p>Water Quality: The EPA recommends the USACE evaluate potential effects related to water quality such as potential increases in salinity, sedimentation, dissolved oxygen and re-suspension of nutrients, etc., and explore opportunities to minimize these potential effects during the risk management study process.</p> <p>Groundwater and Drinking Water: The EPA has identified that increasing salinity levels within the drinking water aquifer as a potential issue associated with sea level rise. The EPA notes that saltwater intrusion is presently an issue with the Biscayne Aquifer, which is a drinking water source for many coastal Florida counties. The EPA also notes that presently there is a large saltwater plume beneath the Florida Power and Light’s Turkey Point Nuclear Plant located near Homestead, Florida. The EPA recommends the USACE fully and rigorously evaluate the proposed projects effects on the Biscayne Aquifer especially regarding effects related to sea level rise and saltwater intrusion.</p> <p>Coral Reefs: The EPA notes that dunes enhancements involving increased dredging activities could effect coral reefs. The EPA notes that a National Marine Fisheries Service (NMFS) supported study found that previous USACE dredging in 2013-2015 in the Miami Harbor led to extensive mortality and partial mortality of hard coral complexes, as well as the loss of other coral community species.</p> <p>This study notes: “Results indicate increased sediment accumulation, severe in certain times and places, and an associated biological response (e.g., higher prevalence of</p>	<p>Water Quality: None of the action alternatives included work below the MHWL. Effects of dredging and beach placement were evaluated in previous NEPA documents that are incorporated by reference. Please see Sections 3.8 and 4.8 in the Draft Report for additional information.</p> <p>Groundwater and Drinking Water: As all work would occur above the MHWL, no effects to salinity levels or to the drinking water aquifer are anticipated.</p> <p>Coral Reefs (and Hardground Habitats): All work would occur above the MHWL, and effects associated with any placement along the shoreline that would extend below the MHWL and effects associated with dredging were analyzed in previous NEPA documents that are incorporated by reference.</p> <p>Everglades National Park, Biscayne National Park and Biscayne Bay Aquatic Preserve: This comment is not relevant to the Manatee County SPP, which is outside of these parks and preserves.</p> <p>Recreation: Effects to recreation as a result of construction are described in previous NEPA documents that are incorporated by reference. An analysis of the proposed alternatives on Recreation and on Economic and Social considerations are found in Sections 3.10, 3.13, 4.10, and 4.13 of the draft report.</p> <p>Green Infrastructure: Dunes are important features in the coastal system and are a natural method for providing enhanced protection to infrastructure from coastal storms. The proposed resiliency measures that combined form the Preferred Alternative are</p>

APPENDIX B - PERTINENT CORRESPONDENCE

COMMENTS	COMMENT SUMMARY	CORPS RESPONSE
	<p>partial mortality of corals) extended up to 700 m from the channel, whereas project-associated monitoring was limited to 50 m from the channel.”</p> <p>The study concludes that:</p> <p>“Dredging projects near valuable and sensitive habitats subject to local and global stressors require monitoring methods capable of discerning non-dredging related effects and adaptive management to ensure predicted and unpredicted project-related effects are quantified.”</p> <p>If potential coral reef effects are identified, the EPA recommends that the Jacksonville District identify an Interagency Work Group (IWG) and member agencies to draw upon their expertise in avoiding, minimizing and mitigating effects to coral reefs. The EPA also encourages the USACE to apply lessons learned from the previous Miami Harbor dredging project so that future coral reef damages are avoided if additional dredging activities are planned.</p> <p>Everglades National Park, Biscayne National Park and Biscayne Bay Aquatic Preserve: The EPA notes that the project study area includes highly valued national and state protected lands such as Everglades National Park, Biscayne National Park and Biscayne Bay Aquatic Preserve. The EPA recommends that the USACE avoid, minimize and mitigate any project effects to these protected lands and disclose any effects in the NEPA document. The EPA also recommends the USACE include the state and federal trustees of these lands (National Park Service and Florida Department of Environmental Protection) as cooperating agencies and/or members of the Project Delivery Team.</p> <p>Recreation: The EPA recommends the USACE document any effects to tourism and recreation (even temporary) such as beach closures, commercial and recreational fishing effects, park and boat ramp closures, effects to diving and snorkeling, etc. Additionally, the EPA recommends the USACE document and disclose any effects to the local community and economy due to potential effects to the recreation and tourism industry.</p> <p>Green Infrastructure: When possible, the EPA encourages the USACE to use green and sustainable infrastructure as project measures or features. The</p>	<p>considered to be Natural and Nature-Based Features, and are consistent with this recommendation.</p>

APPENDIX B - PERTINENT CORRESPONDENCE

COMMENTS	COMMENT SUMMARY	CORPS RESPONSE
	EPA also encourages the USACE to consider the concepts of living shorelines and other natural features to reduce damages from storms.	
U.S. Fish and Wildlife Service		
Date: December 19, 2018		
Jeff Howe Coastal Fish & Wildlife Biologist South Florida Ecological Services Office	Due to the general nature of the scoping letter, Mr. Howe inquired as to whether USFWS would have an opportunity to comment on individual projects.	USACE is coordinating with USFWS on this project during the public comment period and will include their comments in the final document.
Seminole Tribe of Florida		
Date: January 28, 2019		
Bradley M. Mueller, MA Compliance Supervisor STOF-THPO	The proposed undertaking falls within the STOF Area of Interest. While the STOF did not have any comments to make at this time, they requested that USACE continue to coordinate with them throughout the process.	USACE coordinated with STOF during the drafting of this document. Additional information can be found in the main report.

APPENDIX C
Recommended Plan

Manatee County, Florida Shore Protection Project
Anna Maria Island

ENGINEERING DOCUMENTATION REPORT
Dune Resilience

The Recommended Plan is described in the Manatee County, Florida, Shore Protection Project, Anna Maria Island, Draft Engineering Documentation Report (EDR) for Dune Resilience. This document can be found at the following webpage:

<https://www.saj.usace.army.mil/Missions/Civil-Works/Shore-Protection/Manatee-County/>