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**ENVIRONMENTAL APPENDIX**

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**COLLIER COUNTY COASTAL STORM  
RISK MANAGEMENT FEASIBILITY  
STUDY**

**COLLIER COUNTY, FLORIDA**

**APPENDIX D**

**JULY 2020**



**U.S. Army Corps  
of Engineers  
Norfolk District**

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# **COLLIER COUNTY COASTAL STORM RISK MANAGEMENT PROJECT**

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## **Biological Assessment Submitted to the National Marine Fisheries Service**

**U.S. Army Corps of Engineers  
Norfolk District  
803 Front Street  
Norfolk, Virginia 23510**

**July 31, 2020**



**U.S. Army Corps  
of Engineers  
Norfolk District**

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## **1.0 INTRODUCTION**

### **1.1 SCOPE OF THE CONSULTATION**

The scope of this Endangered Species Act (ESA), Section 7 consultation is limited to those federally listed species under the jurisdiction of the National Marine Fisheries Service (NMFS). Another, separate Biological Assessment has been prepared for species and critical habitats under the jurisdiction of the U.S. Fish and Wildlife Service (USFWS) and will be coordinated separately from this Biological Assessment.

### **1.2 AUTHORITY**

The study authority lies in Section 4033 of the Water Resources Development Act of 2007 (Public Law 110-114).

“The Secretary shall conduct a study to determine the feasibility of carrying out a project for hurricane and storm damage reduction and flood damage reduction in the vicinity of Vanderbilt, Park Shore, and Naples beaches, Collier County, Florida.”

### **1.3 LEAD FEDERAL AGENCY AND SUBMITTING AGENCIES**

The lead federal agency for this action is the U.S. Army Corps of Engineers (USACE). The nonfederal sponsor is the Collier County. Because of the anticipated future offshore permitting requirements with the Bureau of Ocean Energy Management (BOEM) due to authorities related to management of offshore mineral resources under the Outer Continental Shelf and Lands Act, please note that this Biological Assessment is being submitted jointly by the USACE and the BOEM.

### **1.4 PURPOSE AND NEED OF THE ACTION**

Since 1851, Collier County has been repetitively impacted by large storms. On average they have been hit by a tropical cyclone every 2-3 years, including 33 hurricanes, 20 of which were Category 3 or greater. This action is needed to address the coastal storm risk and the purpose is to develop and evaluate various alternatives aimed at increasing coastal resiliency against erosion and flooding. The beaches of coastal Collier County are at risk of storm surge, storm driven wave action, tidal flooding, and erosion. The shoreline is largely within critically eroded areas as designated by the Florida Department of Environmental Protection (FDEP) and is mostly public beaches with the exception of Pelican Bay. In addition, numerous inlets penetrate the interior community of Naples while Marco Island is completely surrounded by water with only two bridges in and out of the island. There are also concerns regarding a dense population of people who require more time and assistance for evacuation, concerns for structures and critical infrastructure, and protection of evacuation routes.

### **1.5 DESCRIPTION OF THE TENTATIVELY SELECTED PLAN, ALTERNATIVE 4A (PREFERRED ALTERNATIVE)**

The Preferred Alternative or Tentatively Selected Plan (Figure 1-1) is Alternative 4A which contains the following measures or features:

- Hopper dredging and sea turtle trawling (offshore borrow dredging at the Outer Continental Shelf Shoal Area T1 and Shoal Area T2)
- Nearshore hydraulic cutterhead dredging and beach nourishment (for sediment transport mitigation);
- Structural features that would consist of floodwalls, a sluice gate, and surge barriers and associated features that would include concrete structures in the dune/beach system, pump stations and two jetties;

- Nonstructural features that would include elevation of residential structures, acquisition/demolition of residential structures and reverting these areas to green space or parks, and floodproofing of commercial structures and condominiums. This would include floodproofing of critical infrastructure;
- Natural and Nature-Based Features that would consist of artificial reef structures; and
- Coral/hardbottom, mangrove, Submerged Aquatic Vegetation (SAV), dune vegetation, and sediment transport onsite compensatory mitigation.

Figure 1-1 provides an overview of the features of the Tentatively Selected Plan, Alternative 4A. Pump stations may be used at the floodwall and the surge barrier, and sluice gate sites to pump out stormwater when the surge barriers/sluice gate are in the closed position or during testing conditions. Please note that in addition to the 9.5 miles of beach nourishment areas planned and shown in Figure 1-4, additional beach nourishment may also be included between Planning Area 1-2 and south of Planning Area 3 in Planning Area 4 but is contingent upon further evaluation and modeling. For the purposes of the estimated sea turtle impacts in this Biological Assessment, we included the potential additional nourishment areas to ensure our analysis is accounting for the maximum potential project impacts.

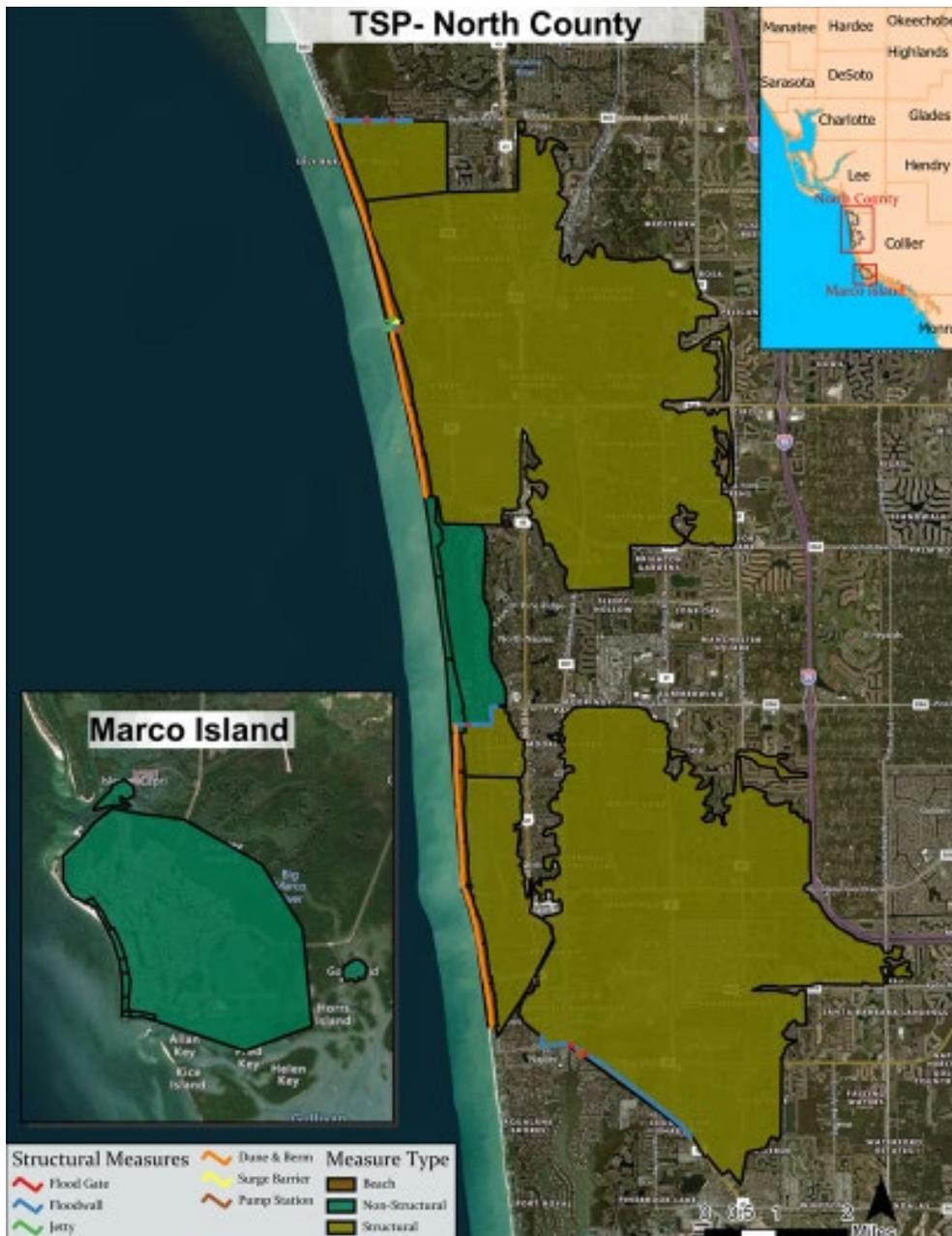
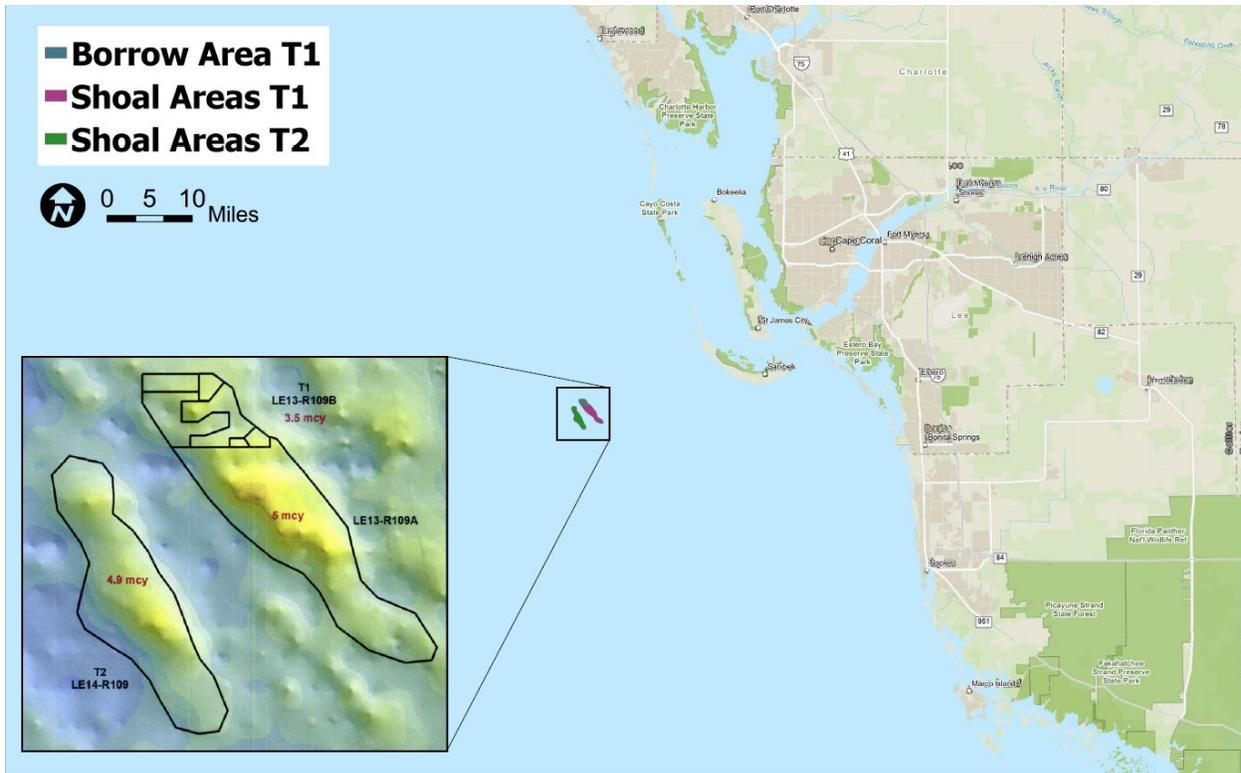


Figure 1-1. Overview of the Tentatively Selected Plan, Alternative 4A

## **PROJECT MEASURES**

### **Dredging and Beach Nourishment**

Sand used in berm and dune construction would be dredged via hopper dredge from two proposed sand shoal borrow areas located approximately 33 nautical miles offshore of Naples, Florida: the Shoal Area T1 and the Shoal Area T2 (Figure 1-2). The northern portion of the Shoal Area T1 (Borrow Area T1; Figure 1-2) has been previously used as a sand source for past beach nourishment projects in Collier County. The shoals would be dredged via hopper dredge.



**Figure 1-2. Offshore borrow sites, Shoal Area T1 and Shoal Area T2**

After dredging, sand would be transported to beach sites with the hopper dredge and sand would be placed via pipeline from the hopper dredge. Sand placement pipelines would be positioned at sites previously established and permitted in the 2016 Collier County beach nourishment projects (Figure 1-3); additional pipeline sites would be established as needed.

The primary sand sources would be expected to be similar to the follow specifications, which would be verified via a sediment testing quality assurance/quality control program during the Preconstruction, Engineering, and Design (PED) Phase of the project:

- Maximum Shell Content: 1% retained on the No. 4 sieve
- Munsell Color Value: Moist Value (Chroma = 1) of 7 or lighter
- Median grain size: 0.33 millimeters

The proposed, estimated maximum berm would extend up to approximately 75 feet from the toe of the vegetation and the dune would be constructed to an estimated maximum height of 14 feet. Berm extensions would extend into existing nearshore aquatic habitats in the Gulf of Mexico. Existing dunes and dune vegetation would be reconstructed. All dune vegetation impacts would require onsite compensatory mitigation that would consist of replanting of native dune species following the dune construction.

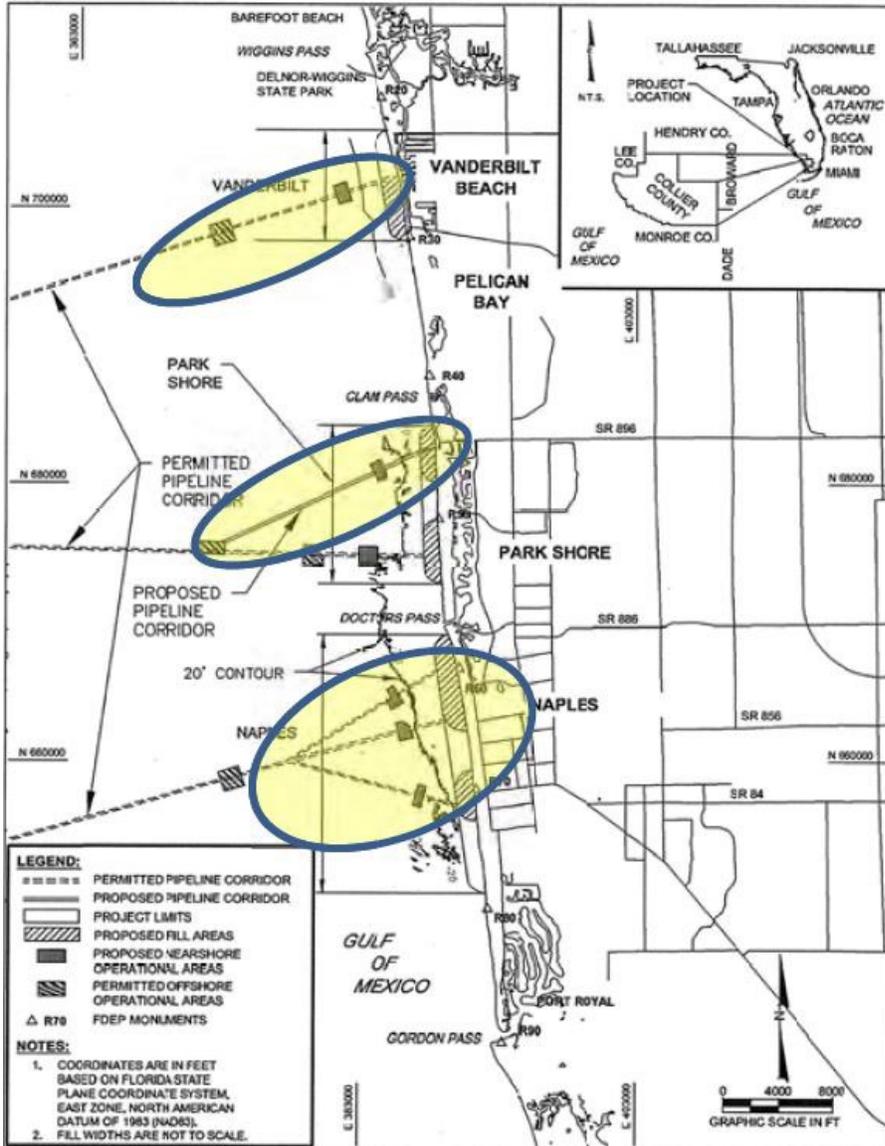


Figure 1-3. Locations of the Collier County Beach Re-nourishment Project Pipeline Corridors (NOAA 2013)

### Floodwalls

Floodwalls would include T-walls and I-wall designs. Any walls taller than approximately six feet would be T-walls, with a maximum height of 30-feet tall. I-walls would be used for wall heights ranging from one to six feet in height.

### Storm Surge Barriers and Sluice Gates

Three types of structural gates were considered for this study. They were sector gates (large openings), miter gates (smaller openings; ≤75 feet wide), and sluice (or tidal) gates.

**Sector gates**—Sector gates are comprised of two sections shaped like pie slices supported on a hinge at the center of a circular arc which swing out in an arc-like motion to form a closing. Because the hydraulic force is directed radially inward toward the vertical axis the load is much more balanced so the gates can be opened and closed in situations with differential head. Sector gates have characteristically fast opening/closing times, may remain partially open for

an extended period of time, and can span gaps several hundred feet wide without intermediate blockage. Sector gates have a more complicated design and also typically have higher construction and maintenance costs, and they require larger land area footprints. The sector gate design was only considered for Wiggins Pass which has a span width of 150 feet.

**Miter gates**—Miter gates consist of a pair of gates mounted on opposing walls that swing out and meet at an angle pointing toward the upstream direction. The gate is kept closed through a difference in water levels. The upstream side should have higher hydraulic loading as the water level rises thus strengthening the locking effect. This type of gate does not perform well in situations with reverse head. Miter gates are the most common type of gate and are typically used in navigation structures such as locks. Miter gates also have relatively quick opening/closing times and moderate construction and maintenance costs. The maximum economical span width for miter gates is approximately 72 feet, and debris may cause issues with closing if it is caught in the miter. The miter gate designs for Wiggins and Doctors Passes would include approximately 72-foot openings with two 40-foot, and two 15-foot lift gates respectively.

**Sluice Gates (Tidal Gates)**—Barriers that cross small tidal creeks are proposed to be sluice gates. The sluice gates considered for this study are vertical rising sluice gates with metal plates, controlled by machinery.

Structures associated with the surge barriers would include pump stations and concrete structures in dune/beach sites as needed.

The gate structures would be closed on average approximately five days (but up to approximately 10 days maximum); it is anticipated that closure events would occur approximately on average five times a year (but up to approximately 10 times). Therefore, we would anticipate the gate structures to be in the open position more than 80% of the time.

## Elevation

This nonstructural technique lifts an existing structure to an elevation that is at least equal to or greater than the design flood elevation. In many elevation scenarios, the cost of elevating a structure an extra foot or two is less expensive than the first foot, due to the cost incurred for mobilizing equipment. Elevation can be performed using fill material, on extended foundation walls, on piers, posts, piles, and columns. Elevation is also a very successful technique for reinforced concrete slab-on-grade structures.

## Floodproofing

This nonstructural technique is applicable as either a stand-alone measure or as a measure combined with other measures such as elevation. There are two types of floodproofing, wet floodproofing and dry floodproofing.

- **Wet floodproofing**—This nonstructural technique allows floodwaters to enter a structure without resulting in damage. As a stand-alone measure, all construction materials and finishing materials need to be water resistant and all utilities must be elevated above the flood elevation. Wet floodproofing is quite applicable to commercial and industrial structures. This measure is generally not applicable to large flood depths and high velocity flows.
- **Dry floodproofing**—This nonstructural technique consists of waterproofing the structure. This can be done to residential homes as well as commercial and industrial structures. This measure achieves flood risk reduction but it is not recognized by the National Flood Insurance Program (NFIP) for any flood insurance premium rate reduction if applied to a residential structure. Based on laboratory tests, a

“conventional” built structure can generally only be dry flood proofed up to 3-feet in elevation. A structural analysis of the wall strength would be required if it was desired to achieve higher protection. A sump pump and French drain system may be installed as part of the measure. Closure panels are used at openings. This concept does not work with basements nor does it work with crawl spaces. For buildings with basements and/or crawlspaces, the only way dry floodproofing could be considered to work is for the first floor to be made impermeable to the passage of floodwater.

### **Acquisition, Demolition and Conversion to Green Space and Parks**

This technique consists of acquiring a structure and land, demolishing it and converting it to green space or a park.

### **Natural and Nature-Based Features**

Natural and Nature-Based Features (NNBFs) are components found in natural ecosystems or constructed habitats that mimic natural ecosystems that can be used to enhance the resilience of coastal areas challenged by sea level rise and coastal storms. For this study, artificial reef structures were selected as the preferred NNBF.

### **Onsite Compensatory Mitigation**

It is anticipated that coral/hardbottom, mangrove, SAV, and dune vegetation onsite compensatory mitigation would be required to be conducted to offset functional impacts caused by the beach nourishment and construction and operation of the project structural features. Sand transport mitigation would also be required to offset sediment transport issues caused by proposed jetty at the Wiggins Pass. This would consist of redistribution of sand to more natural locations by hydraulic cutterhead and pipeline to the barrier island system.

### **PROJECT MEASURES BY PLANNING AREA**

Planning Area 1 (PA1) (Figure 1-4) includes several structural measures formulated to hydraulically isolate upland structures from the effects of coastal storms, including surge. Because of this strategy, the extents of PA1 were defined through a drainage analysis, which gave the planning area its unique shape. The structural measures included are the Wiggins Pass Surge Barrier (which contains concrete structures that extend into the beach/dune system) flanked by a jetty, and a pump station; the Bonita Beach Road floodwall, and the two Bonita Beach Road surge barriers. A higher beach dune and beach berm are also included in PA1 from the northern County line (approximately at Florida DEP range monument 1 (R1)) through Vanderbilt Beach (approximately R29). Please note that in addition to the beach nourishment areas planned and shown in Figure 1-4, additional beach nourishment may also be included between Planning Area 1-2 and south of Planning Area 3 in Planning Area 4 but is contingent upon further evaluation and modeling. Dredging estimates and impact findings included in this Biological Assessment are calculated and intended to include the additional beach nourishments to ensure to account for all potential impacts.

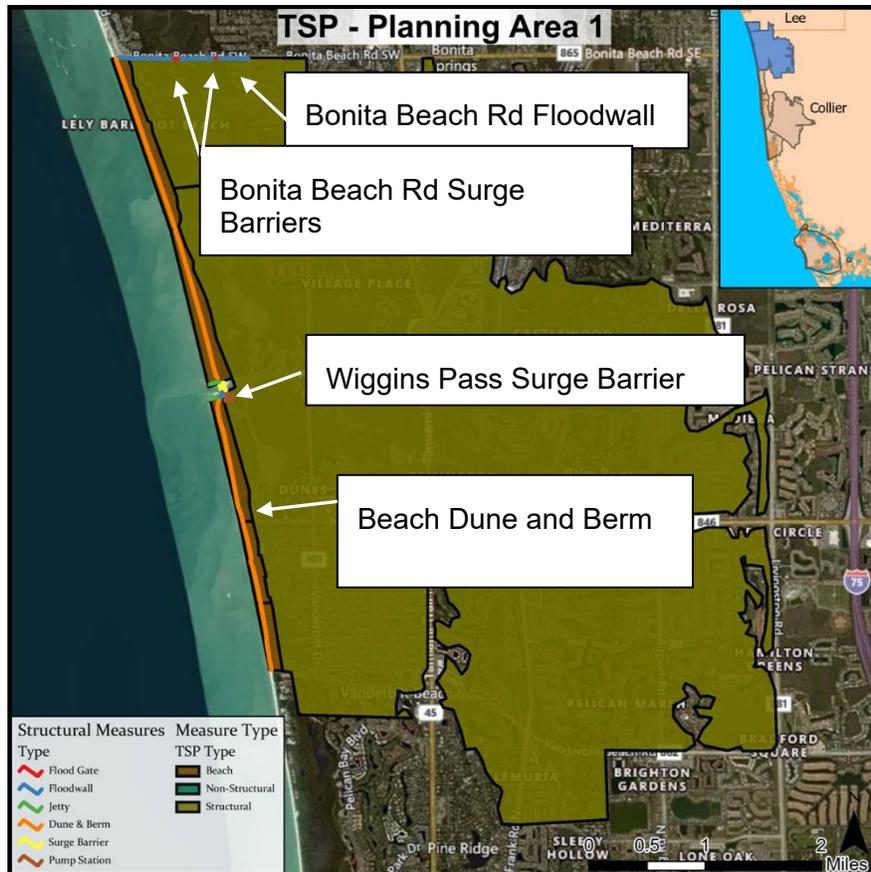
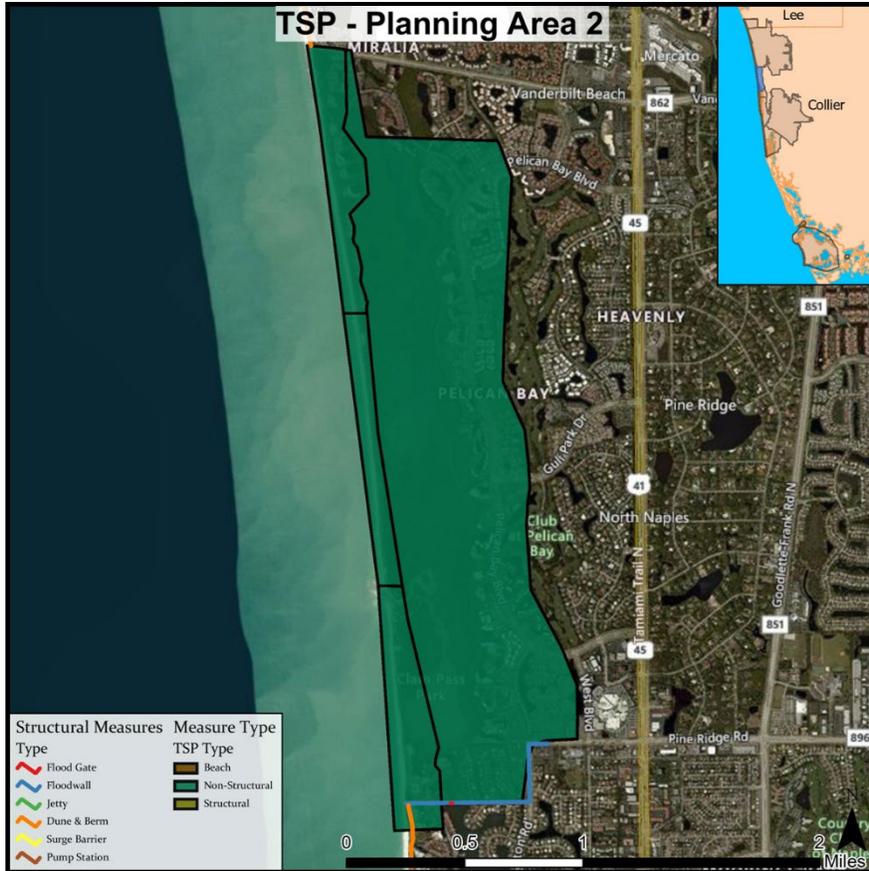


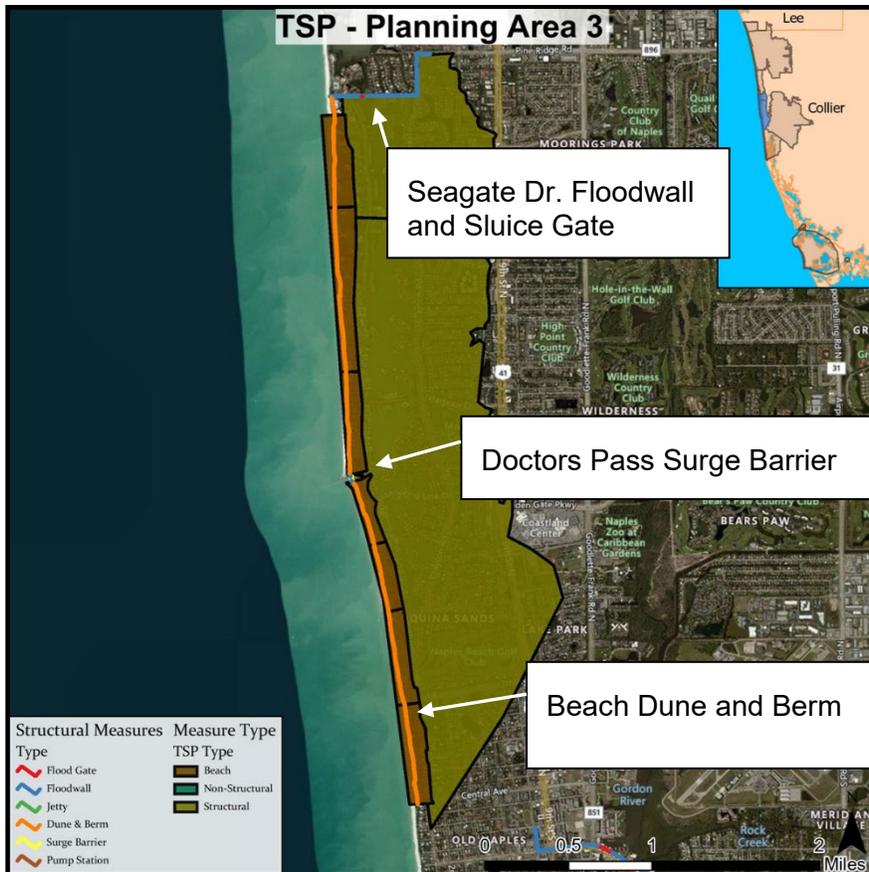
Figure 1-4. Planning Area 1 (PA1)

Planning Area 2 (PA2) (Figure 1-5) was formulated as a nonstructural area because the topography did not support the construction of structural measures in accordance with the plan formulation strategy. Throughout PA2 there are structures that were identified for either acquisition, floodproofing, or elevation. The geographic boundary in PA2 was chosen to include structures with first floor elevations less than or equal to the top of wall heights planning the adjacent planning areas, PA1 and PA3, so as to provide a similar level of risk reduction.



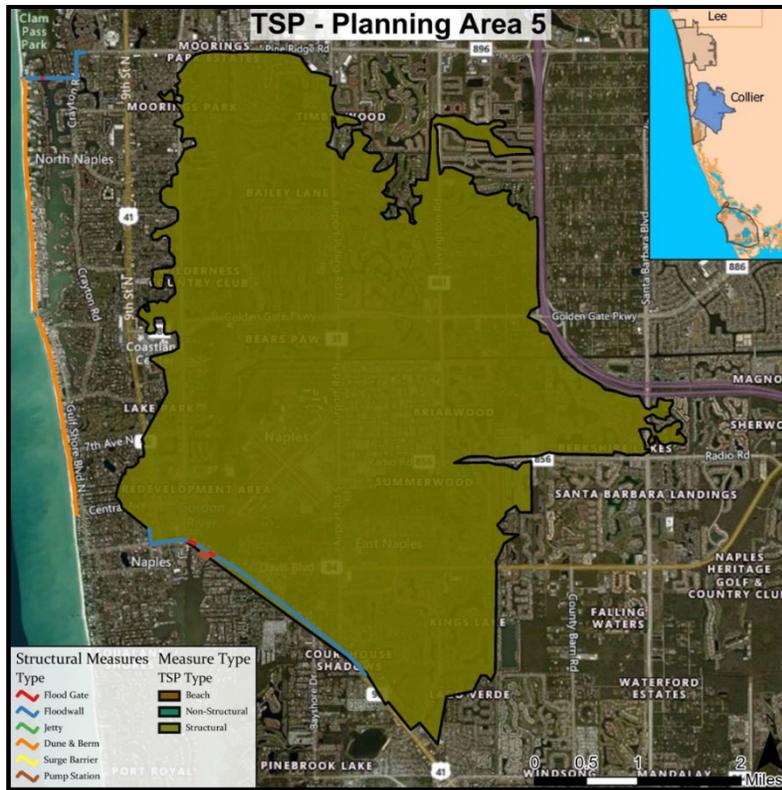
**Figure 1-5. Planning Area 2 (PA2)**

Planning Area 3 (PA3) (Figure 1-6) is the second area containing structural measures and includes the Seagate Drive Floodwall and Sluice Gate, as well as the Doctors Pass Surge Barrier (this feature could potentially also contain concrete structures that extend into the dune/beach system). Additionally PA3 includes a higher beach dune and beach berm from Park Shore to Naples Beach (approximately R46-R68). Similar to PA1, the boundary for PA3 was determined through drainage analysis.



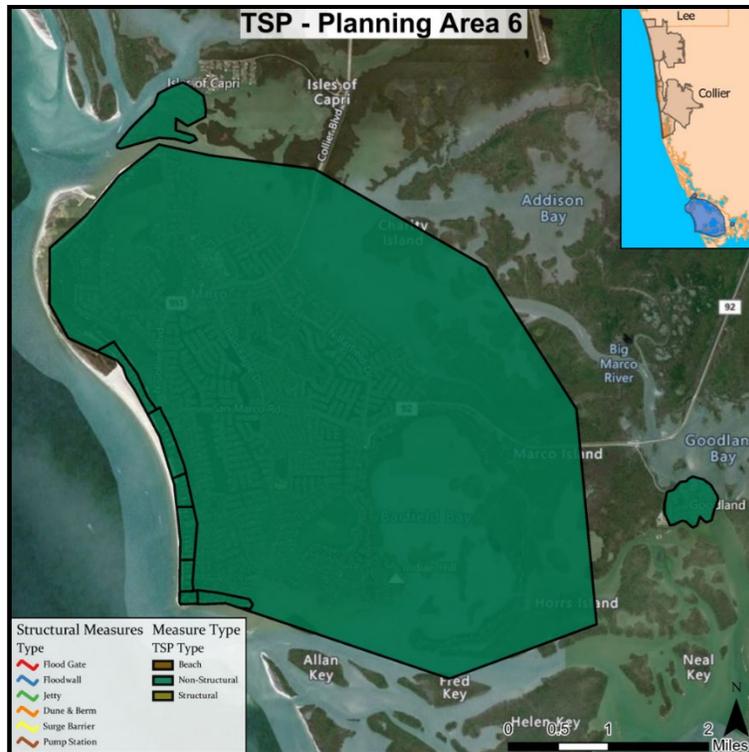
**Figure 1-6. Planning Area 3 (PA3)**

Planning Area 5 (PA) (Figure 1-7) is the third area containing structural measures including the Tamiami Trail Floodwall and Surge Barriers and associated pump station. Like PA1 and PA3, the extents of PA5 were determined using drainage analysis. The boundary of PA5, similar to the other planning area boundaries, includes all ground elevations greater than or equal to the maximum top of wall heights for structural measures. This ensured all structures with first floor elevations less than or equal to the design heights were included in the structure inventory, thereby providing a consistent level of risk reduction across the entire study area.



**Figure 1-7. Planning Area 5 (PA5)**

Planning Area 6 (PA6) (Figure 1-8) represents Marco Island, Isles of Capri, and Goodland. PA6 includes only nonstructural measures because the topography did not support the construction of structural measures in accordance with the plan formulation strategy. Throughout PA6 there are structures that were identified for either acquisition, floodproofing, or elevation. Construction of artificial reefs around the Marco Island are also included as a potential NNBF for this study.



**Figure 1-8. Planning Area 6 (PA6)**

## 2.0 ACTION AREA

The Action Area as it is referred to for threatened and endangered species per 50 CFR 402.02 is defined as “all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action.” The Action Area includes all areas transited by dredging vessels/equipment, barges, and other vessels utilized including portions of the Outer Continental Shelf in and surrounding the Shoal 1 and Shoal 2 borrowing sites to the shorelines of the Collier County including waters in and around the Marco Island and back-bay habitats of the Collier County. The Action Area includes the area of anticipated circulation pattern shifts and potential water quality impacts. The Action Area encompasses the Collier County beach habitats impacted by the beach nourishment any potential areas of direct and indirect impacts from the structural and nonstructural features of the alternatives. This includes areas of direct impact from the construction, operation, and maintenance of the structural and nonstructural features as well as the area of potential hydrologic and water quality impacts and noise impacts. The Action Area includes the range of noise impacts as they pertain to threatened and endangered species.

## 3.0 FEDERALLY LISTED SPECIES AND CRITICAL HABITATS

Animals and plants listed as endangered or threatened are protected under the Endangered Species Act of 1973, as amended (ESA). According to the ESA, an “endangered species” is defined as any plant or animal species in danger of extinction throughout all or a substantial portion of its range. A “threatened species” is any species likely to become an endangered species in the foreseeable future throughout all or a substantial part of its range. “Proposed Species” are animal or plant species proposed in the Federal Register to be listed under Section 4 of the ESA. “Candidate species” are species for which the USFWS and NMFS have sufficient information on their biological status and threats to propose them as endangered or

threatened under the ESA. Critical habitat is designated per 50 CFR parts 17 or 226 and defines those habitats that are essential for the conservation of a federally threatened or endangered species and that may require special management and protection.

Table 3-1 provides the federally listed species known or with the potential to occur in the Action Area. There are no candidate species known or with the potential to occur in the project Action Area. Smalltooth Sawfish Critical Habitat is located within portions of the Action Area.

**Table 3-1. Federally listed species under the jurisdiction of the National Marine Fisheries Service with the potential to occur in the Action Area (FWRI 2020; USACE 2020; NOAA 2018; Wusig 2017; NOAA 2013; NMFS 2007; NMFS 2003; NMFS, personal communication)**

<b>Taxonomic Category/Common Name</b>	<b>Scientific Name</b>	<b>Status</b>	<b>Critical Habitat in Action Area</b>
<b>FISH</b>			
Giant manta ray	<i>Manta birostris</i>	T	N
Gulf sturgeon	<i>Acipenser oxyrinchus desotoi</i>	T	N
Oceanic whitetip shark	<i>Carcharhinus longimanus</i>	T	N
Shortnose sturgeon	<i>Acipenser brevirostrum</i>	E	N
Smalltooth sawfish	<i>Pristis pectinata</i>	E	Y
<b>WHALES</b>			
Bryde's whale	<i>Balaenoptera edeni</i>	E	N
North Atlantic right whale	<i>Eubalaena glacialis</i>	E	N
Sperm Whale	<i>Physeter macrocephalus</i>	E	N
<b>SEA TURTLES</b>			

Taxonomic Category/Common Name	Scientific Name	Status	Critical Habitat in Action Area
Green sea turtle (North and South Atlantic DPS)	<i>Chelonia mydas</i>	T	N
Hawksbill sea turtle	<i>Eretmochelys imbricata</i>	E	N
Kemp's ridley sea turtle	<i>Lepidochelys kempii</i>	E	N
Leatherback sea turtle	<i>Dermochelys coriacea</i>	E	N
Loggerhead sea turtle (Northwest Atlantic Ocean DPS)	<i>Caretta caretta</i>	T	Y

DPS = Distinct Population Segment

### 3.1 FISH

#### 3.1.1 Giant Manta Ray

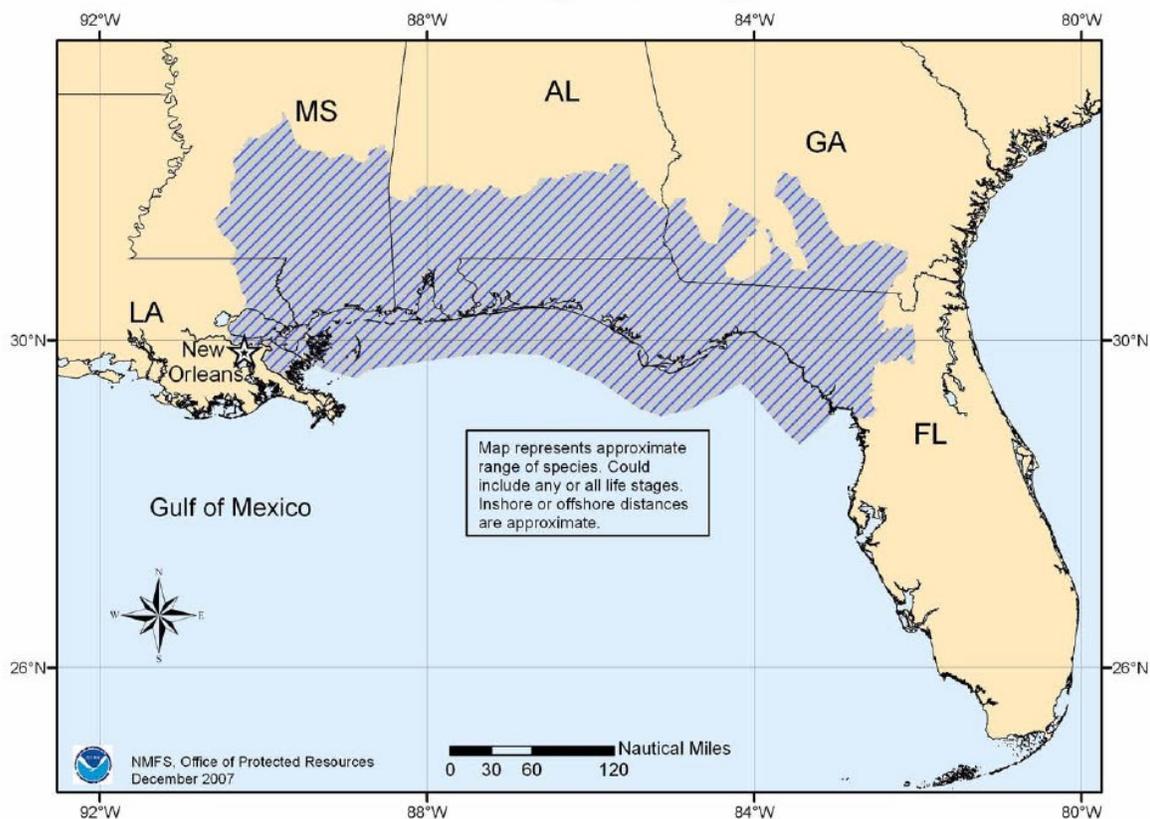
On January 22, 2018, NOAA Fisheries published a final rule listing the giant manta ray as threatened under the ESA effective February 21, 2018 (83 FR 2916). The giant manta ray is the largest living ray, with a wingspan reaching a width of up to 9 m (29.5 feet), and an average size between 4-5 m (15-16.5 feet). Two large cephalic fins (rostra), used in feeding, protrude from the front of its head. They, like many other elasmobranchs, bear live young, for the manta they bear up to two pups per litter and reproducing only once every two to three years, a low replacement rate making them vulnerable to over-exploitation (NOAA Fisheries n.d.). The giant manta ray is found worldwide in tropical subtropical, and temperate seas. These slow-growing, migratory animals are circumglobal with fragmented populations. Giant manta rays make seasonal long-distance migrations, aggregate in certain areas and remain resident, or aggregate seasonally. Giant manta rays are seasonal visitors along productive coastlines with regular upwelling, in oceanic island groups, and near offshore pinnacles and seamounts. The timing of these visits varies by region and seems to correspond with the movement of zooplankton, current circulation and tidal patterns, seasonal upwelling, seawater temperature, and possibly mating behavior. They are typically found near coral and rocky reefs. Giant manta rays primarily feed on planktonic organisms such as euphausiids, copepods, mysids, decapod larvae and shrimp, but also feed on fishes. When feeding, giant manta rays hold their cephalic lobes in an “O” shape and open their mouth wide, which creates a funnel that pushes water and prey through their mouth and over their gill rakers. They use many different types of feeding strategies, such as barrel rolling (doing somersaults repeatedly) and creating feeding chains with other mantas to maximize prey intake.

The Action Area would be anticipated to provide foraging grounds for the giant manta ray particularly in the hardbottom habitats located offshore of the Collier County beaches because of their preferred feeding grounds in reef habitats. It is uncertain if giant mantra rays are utilizing any of the Action Area for breeding or nursery habitats.

### 3.1.2 Gulf Sturgeon

Gulf sturgeon are a primitive, cartilaginous fish that can grow up to approximately 14 feet and have a heterocercal tail, similar to a shark, their backs are covered with large, bony scutes and they possess a number of barbels around their ventrally located mouth. They are benthic feeders and forage on a wide variety of organisms, typically mollusks and crustaceans, though they will eat fish and other animals. They inhabit estuarine to marine waters as juveniles and adults, with spawning occurring in freshwater rivers.

Gulf sturgeon inhabit are found from the Suwannee River in Florida to the Pearl River on the boundary of Louisiana and Mississippi (The University of Southern Mississippi Gulf Coast Research Laboratory 2020); Figure 3-1). They spawn in upstream locations during the spring and young-of-the-year spend approximately 6–10 months feeding in the river as they migrate downstream (The University of Southern Mississippi Gulf Coast Research Laboratory 2020).



**Figure 3-1. Current range of the Gulf sturgeon (NOAA 2007)**

There is no known spawning habitat of the gulf sturgeon in Collier County nor any designated critical habitat. The presence of the Gulf sturgeon in waters offshore of Collier County would be very unlikely and rare occurrence as their typical, current range is located much further to

the north along the Gulf coast though their historic range did once include local waters of Collier County.

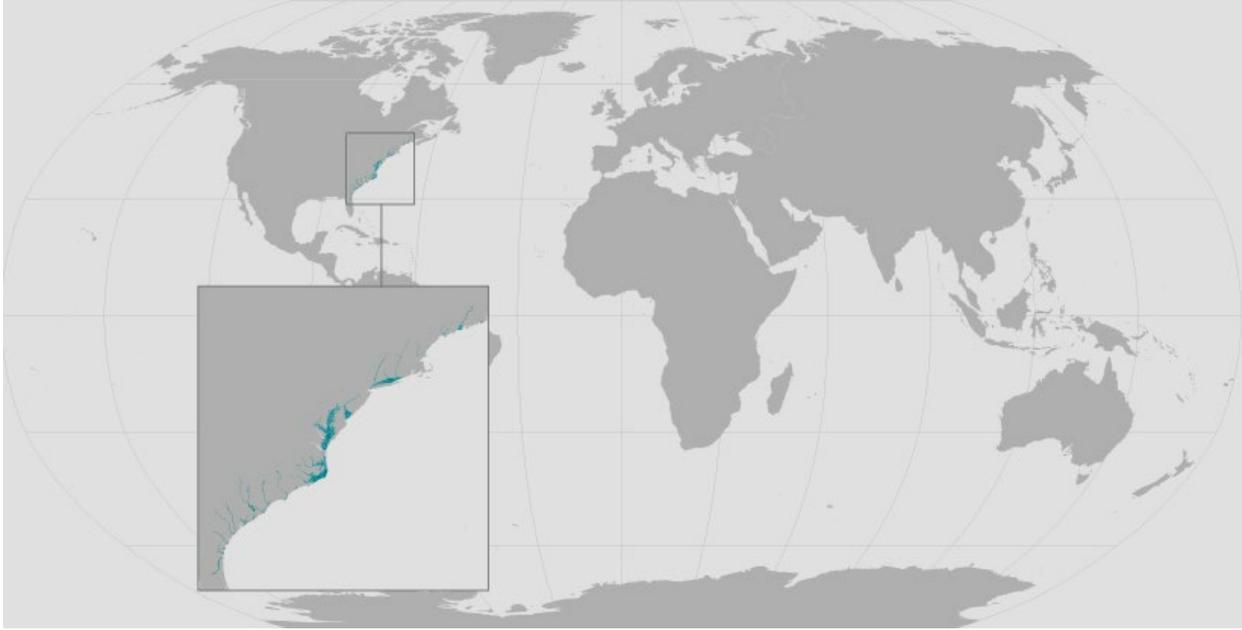
### **3.1.3 Oceanic Whitetip Shark**

The oceanic whitetip is the first shark federally listed, as threatened in 2018. No critical habitat for this species has been designated at this time. This shark species is found in warm waters throughout the world's oceans, including offshore U.S. waters, it is a long-lived, slow-growing species with an advanced age at maturation, making it particularly vulnerable to overexploitation. The primary reason for its decline is the shark fin fishery as well as being caught in purse seines and longline fisheries as bycatch. It is a large, pelagic requiem shark with a stocky body and long, white-tipped rounded fins, which are larger than most other shark species. The shark's nose is also rounded. The largest specimen caught was 13 feet long, individual sharks often exceed 10 feet in length and over 300 pounds in weight. It feeds mainly on pelagic cephalopods and bony fish, though it will eat other prey if opportunity presents. Its mating season locally is in early summer, with females being viviparous, giving birth after a gestation period of one year to up to 15 live young averaging 24 inches in length.

This species would be expected to potentially occur in the Action Area only in far offshore waters where it could potentially be foraging. This species prefers surface waters so its presence would be likely only in the far offshore portions of the Action Area in surface waters. There is no known breeding or nursery habitat in the Action Area.

### **3.1.4 Shortnose Sturgeon**

The shortnose sturgeon is federally listed as endangered throughout its range. The shortnose sturgeon is one of the smallest sturgeons with a body length of three to four and a half feet in total length and up to 60 pounds in weight. They are similar to sharks in body shape, having a cartilaginous skeleton and a heterocercal tail, though their skin is partly covered by large, bony scutes. It has barbels on either side of its ventrally located mouth, and feeds primarily on benthic fauna. They are anadromous, similar to their larger cousin the Gulf sturgeon, commonly living in estuarine waters and migrating upriver to fresh water to spawn. They are rarely found in oceanic waters. The current range of the shortnose sturgeon is provided in Figure 3-2.



**Figure 3-2. Current range of the shortnose sturgeon (NOAA n.d.a)**

The Action Area would not be a preferred habitat of the shortnose sturgeon and is outside of its typical, current range. Therefore, we would not anticipate that this species would occur in the Action Area. Therefore, because this species would not be anticipated to occur in the Action Area there would be no potential effects to the shortnose sturgeon and this topic is dismissed from further consideration.

### **3.1.5 Smalltooth Sawfish**

Smalltooth sawfish are large, shark-like fish that are one of several living species in the sawfish family. On April 1, 2003 NOAA placed the smalltooth sawfish on the Endangered Species List, making it the first marine fish species to receive protection under the Endangered Species Act. They get their name from the long, flattened “saw”, rimmed by dozens of teeth, that protrudes anterior from its head.

A sawfish uses its saw to stir up muddy or sandy bottoms to find and injure prey. Smalltooth sawfish may grow to more than 18 feet long and may live more than 20 years (Poulakis and Seitz 2004). They have been historically caught as bycatch in commercial and recreational fisheries throughout their range; however, such bycatch is now rare due to population declines and population extirpations (Poulakis and Seitz 2004). There has never been a reported take of a smalltooth sawfish from previous dredging/beach nourishment projects in the offshore Collier County habitats.

Figure 3-3 illustrates the estimated range of the smalltooth sawfish. Within the western Atlantic, they have historically ranged from New York to Brazil, including the Gulf of Mexico and Caribbean Sea. Smalltooth sawfish are found estuarine and coastal habitats such as bays, lagoons, rivers, offshore beaches, and reef habitats (NOAA n.d.b). Currently, their distribution has extended to peninsular Florida and, within that area, they can only be found with any regularity off the extreme southern portion of the state.

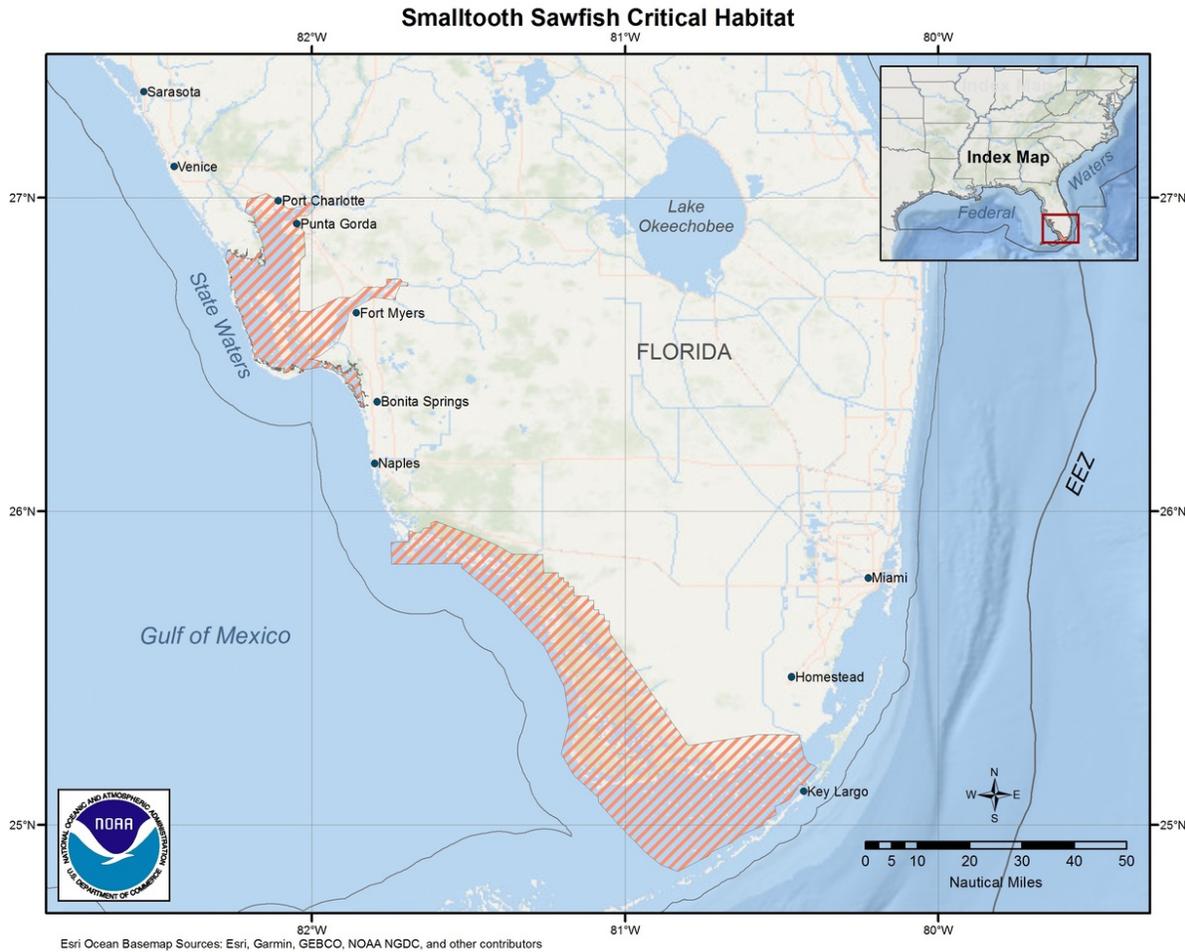


**Figure 3-3. Estimated range of smalltooth sawfish (NOAA n.d.b)**

Juvenile smalltooth sawfish inhabit estuaries including shallow portions of bays, lagoons, and rivers (NOAA n.d.b). Once they reach approximately seven years old, they move from the shallow, estuarine habitats to more coastal habitats (NOAA n.d.b). Larger juveniles and adult smalltooth sawfish inhabit estuaries, offshore beach habitats, and reefs habitats (NOAA n.d.b).

In the Action Area, smalltooth sawfish would have the potential to occur in the back-bay estuarine habitats (NOAA personal communication) that could potentially be used as breeding, nursery, and foraging habitat. Mangroves, which are preferential nursery habitat for the smalltooth sawfish, are found throughout the Action Area in the back-bay habitats. Smalltooth sawfish also have the potential to occur in the offshore habitats of the Action and habitats flanking the Marco Island.

Smalltooth sawfish critical habitat located in Florida is depicted in Figure 3-4. The only portion of the Action Area within designated critical habitat is the area flanking the eastern portion of Marco Island.



**Figure 3-4. Smalltooth Sawfish Critical Habitat (NOAA 2019)**

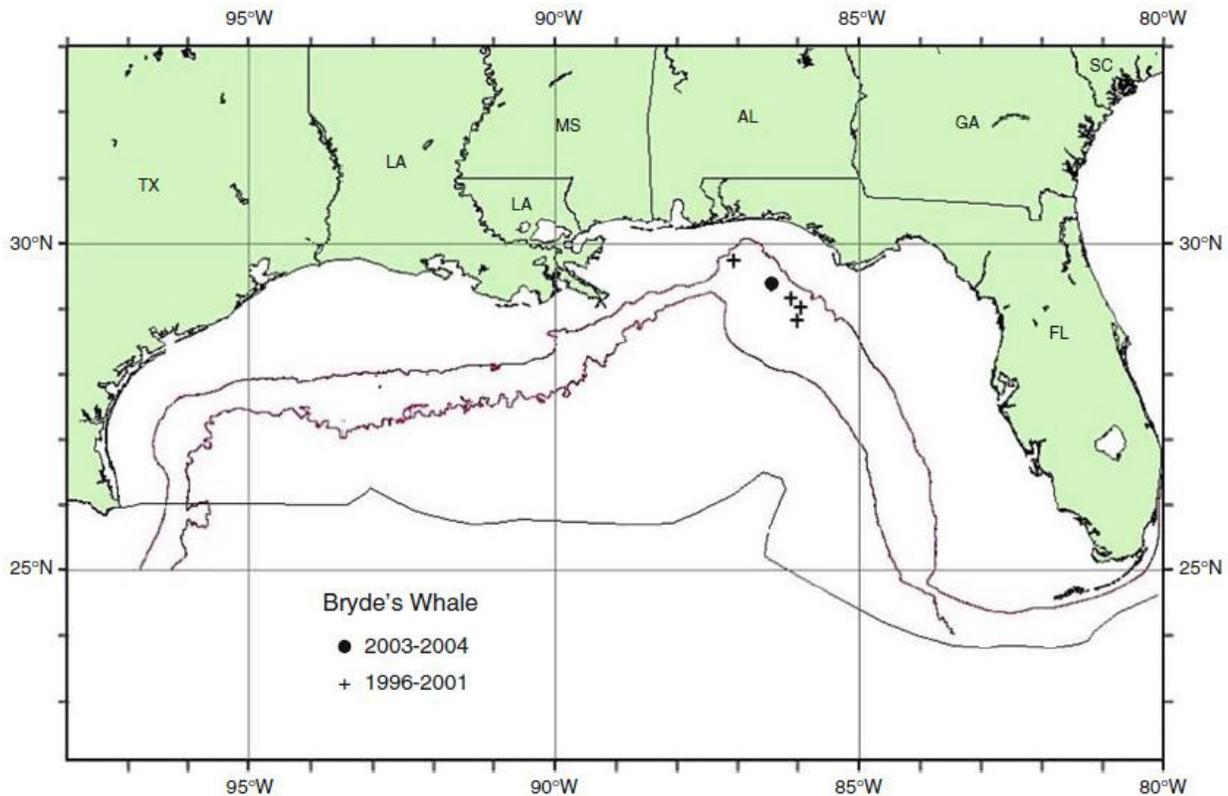
### 3.2 WHALES

#### 3.2.1 Bryde’s Whales

The Gulf of Mexico subspecies of Bryde’s Whale (*Balaenoptera edeni*) was listed as federally endangered by NOAA in 2019, and is also protected under the Marine Mammal Protection Act (NOAA 2019a). Adults grow to approximately 43 feet (13 meters) in length, with females generally reaching larger sizes than males (Wursig 2017). Their bodies are blue-black above and white below and have a small, abrupt, falcate dorsal fin. The three dorsal ridges on their heads are a diagnostic characteristic for positively identifying Bryde’s Whale from the other species in family Balaenopteridae. The species is largely distributed in tropical waters of the Indian, Pacific, and Atlantic Oceans, with global population estimates ranging between 30,000-50,000 individuals. The most recent best abundance estimate for the Gulf of Mexico subspecies is 33 whales (coefficient of variation=1.07), with a minimum population estimate of 16 whales (NOAA 2018); these estimates were generated from a summer 2009 line-transect abundance survey dedicated to oceanic cetaceans in the northern Gulf of Mexico. At this time, data on the status of this population(s) are insufficient to detect abundance trends over time.

Sightings and acoustic detections of this subspecies occur almost exclusively in the northeastern Gulf, along the continental shelf break between 100 – 400 meters depth (Figure 3-5; Wursig 2017; NOAA 2018). Generally, groups of Bryde’s Whales are understood to be

feeding aggregations consuming shoals of small pelagic fishes. This tropical species tends to breed and calve year-round and do not engage in long migrations. There are no known Bryde's Whale breeding grounds in the Action Area. Therefore, the compilation of best available survey data indicate they are unlikely and not anticipated to occur in the Action Area (Wusig 2017; NOAA 2018; Figure 3-5).



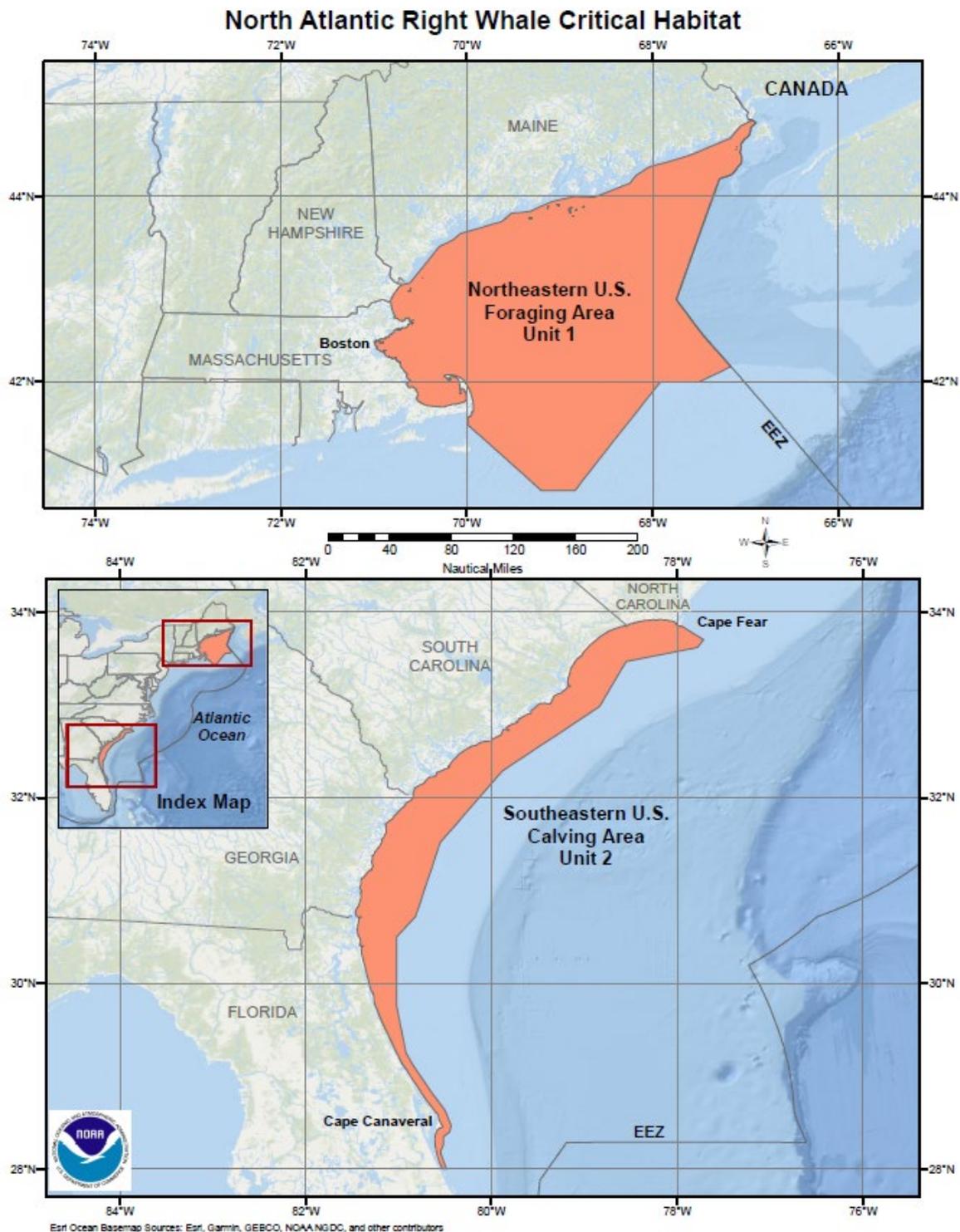
**Figure 3-5. Distribution of the Gulf of Mexico subspecies of Bryde's Whale as depicted by Wursig (2017), based on sightings survey data from 1996-2001 and 2003-2004. Solid lines indicate 100 meter and 1,000 meter isobaths (maroon) and the offshore extent of the U.S. EEZ (black).**

### 3.2.2 North Atlantic Right Whale

The North Atlantic Right Whale (*Eubalaena glacialis*) was listed as federally endangered in 1970, and is also protected under the Marine Mammal Protection Act. They have mostly black bodies and sometimes irregular white chest patches, V-shaped spouts, no dorsal fin, deeply-notched tails, and relatively short paddle-shaped pectoral flippers (NOAA 2019a). Adults can grow to 52 feet (16 meters) in length. The western North Atlantic Right Whale population ranges primarily between the calving grounds off the Southeast U.S. coast up to their feeding grounds off the Northeast U.S. and Canadian coast. In 2016, NOAA issued a final rule on Critical Habitat for the North Atlantic Right Whale that encompassed two areas that reflected these distinct resource uses and life stages (81 FR 4837; Figure 3-6).

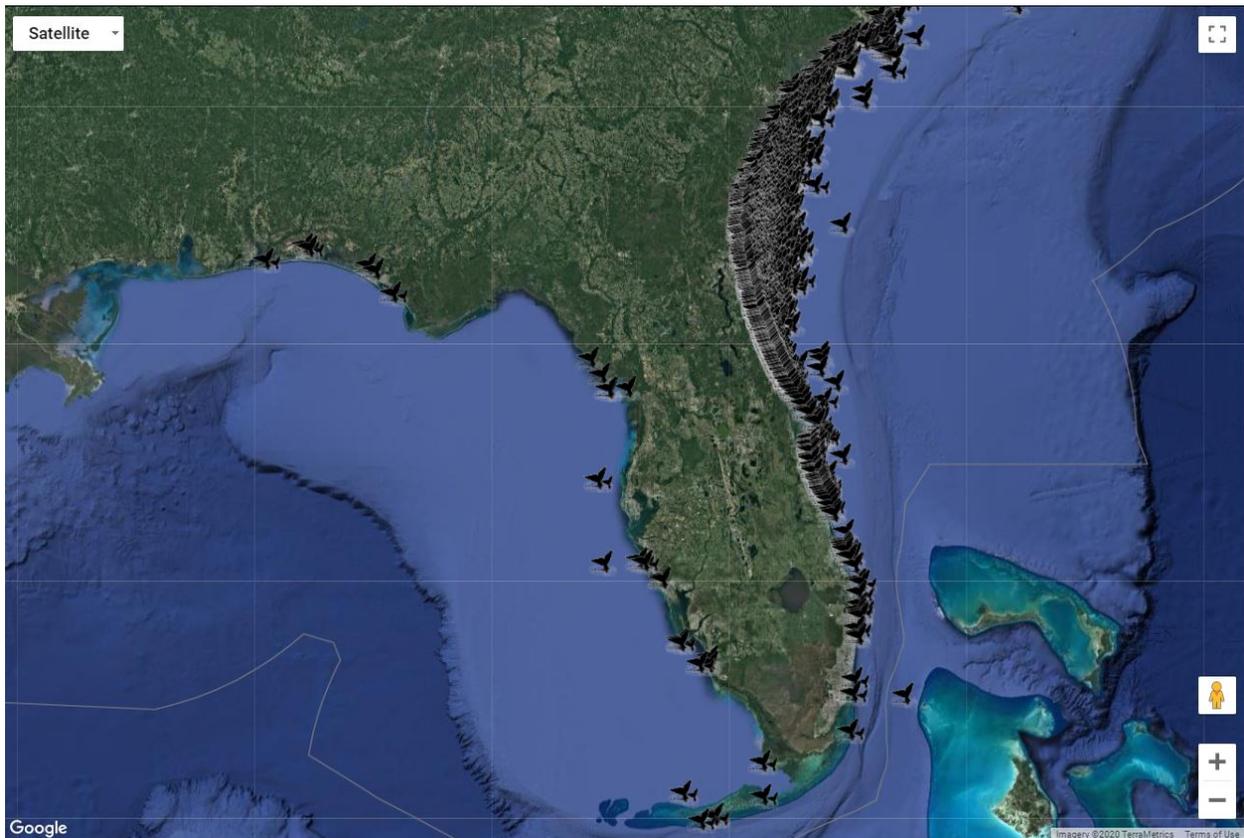
The most recent stock assessment by NOAA reported a western North Atlantic Right Whale population estimate of 451 individuals (95% credible intervals 434-464) (NOAA 2019b). These estimates are based on data from extensive sighting records and considerable survey efforts throughout its range dating back to approximately 1990 (NOAA 2019b, NOAA 2020; Figure 3-7). These data have also been helpful in describing population trends over time, such as recent decreases between 2011 – 2016. These extensive data sets also indicate that North Atlantic

Right Whale occurrences in the Gulf of Mexico are rare and patchily distributed; however, several sightings were reported in January 2018 and March 2020 from the Action Area (NOAA 2020; Figure 3-7). However, because of the preferred offshore preference of this species, any occurrences of the Atlantic right whale would be anticipated to be rare and unlikely.



**Figure 3-6. Final Critical Habitat was delineated in two areas for the North Atlantic Right Whale reflecting separate and distinct resource uses, including foraging area off of the**

*Northeast U.S. coast (top map) and a calving area off of the Southeast U.S. coast (bottom map). Maps were generated by and accessed from NOAA (NOAA 2019c).*



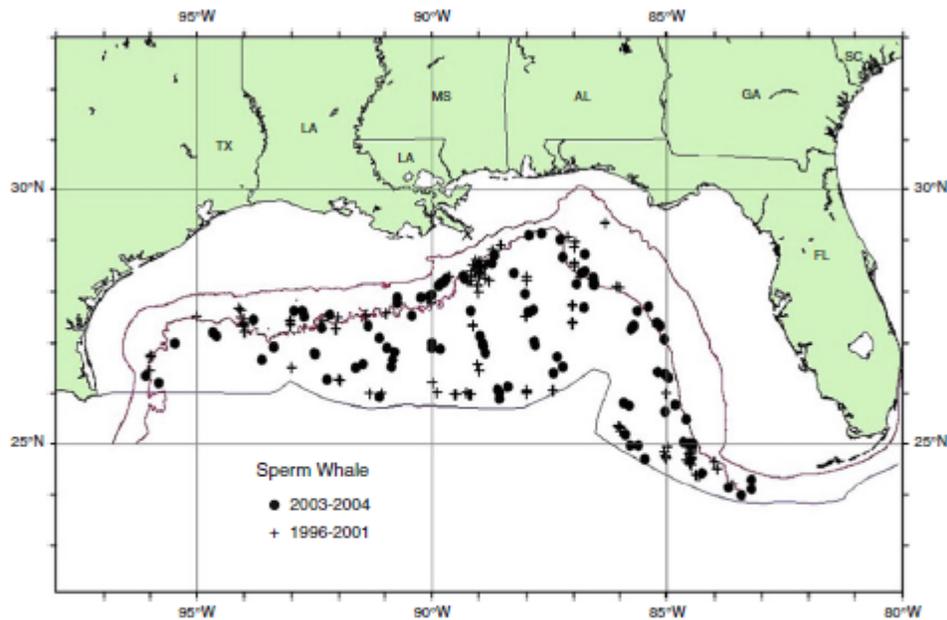
**Figure 3-7. Distribution of North Atlantic Right Whale sighting records from 2010 – 2020 collected by North Atlantic Right Whale Consortium and collated by NOAA (NOAA 2020). Sightings in the Gulf of Mexico are rare and patchily distributed; however, several sightings were reported from 2018 and 2020 from the Action Area.**

### **3.2.3 Sperm Whale**

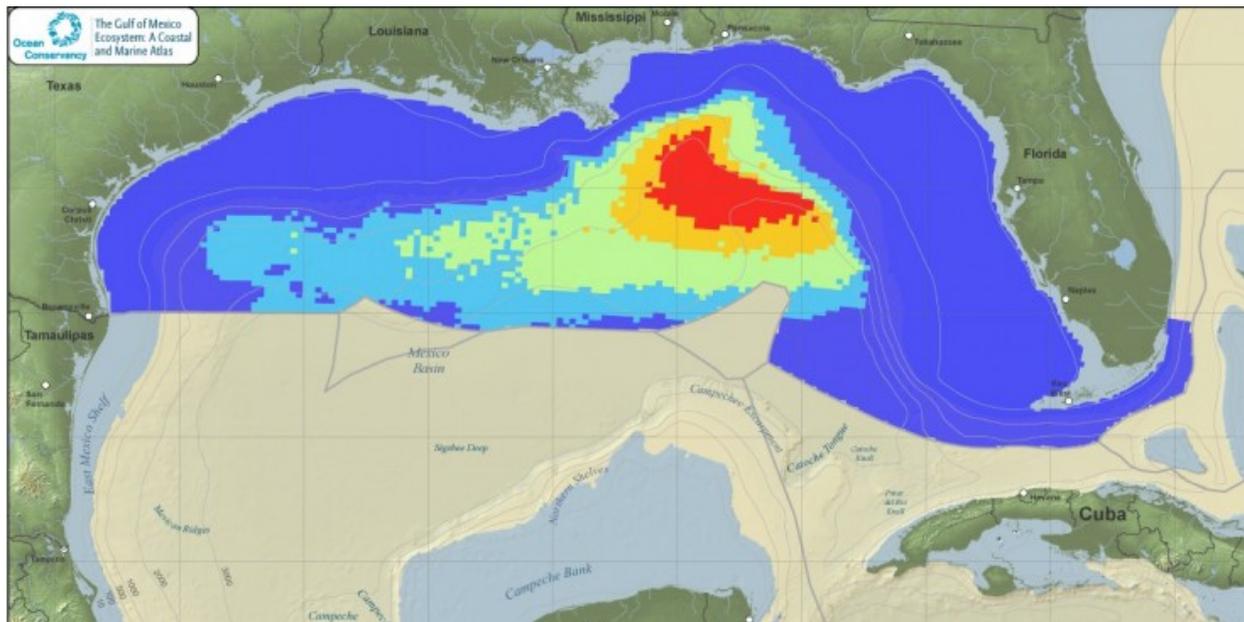
The sperm whale was federally listed as endangered in 1970, and is also protected under the Marine Mammal Protection Act and worldwide by international whaling agreements. A large male may grow to more than 60 feet (18 meters), females up to about 40 feet (12 meters). The sperm whale is the largest of all toothed-whale species. It has a blunt, rectangular-shaped head with large teeth in the lower jaw for feeding on fish and squid, including deep-water giant squid that grow up to 50 feet long. The sperm whale occurs throughout the world's oceans and in the Mediterranean Sea. Prior to whaling, sperm whales may have numbered 1.1 million worldwide, according to the American Cetacean Society. Today the number is perhaps 300,000. A small population of fewer than 1,500 sperm whales lives in the Gulf of Mexico; the species was much more numerous there before whaling put a dent in its numbers. Studies have found that gulf whales are a distinct population—they use combinations of calls different from those of other sperm whale populations and are smaller in size, probably an adaptive response to the limitations of their habitat and its food sources. The sperm whale prefers ice-free waters at least 3,300 feet (1,000 meters) deep.

Sperm whales are widely distributed throughout the world's oceans but typically occur prefer waters deeper than approximately 1,640 feet because of their habit of seeking largely deep-

diving squid and fishes (Wusig 2007). Therefore, it would not be anticipated that the Action Area would not provide preferential foraging or migratory grounds for sperm whales. There is no known sperm whale breeding grounds in the Action Area. A compilation of sperm whale survey data further indicates they would not likely be anticipated to occur in the Action Area (Wusig 2007; Ocean Conservancy 2003; Figure 3-8; Figure 3-9).



**Figure 3-8. Distribution of sperm whale sightings from 1996-2001; 2003-2004 (Wusig 2007)**



**Figure 3-9. Sperm whale range in the Gulf of Mexico, red being the highest frequency of encounters, followed by orange, yellow, and light blue. Whales are not typically found in dark blue waters (Ocean Conservancy 2013)**

### 3.3 SEA TURTLES

#### 3.3.1 Green Sea Turtle

The green sea turtle was listed as endangered in Florida, and threatened elsewhere in the U.S., in July 1978. However, on April 6, 2016, NMFS superseded this with a Federal Register announcement of 11 worldwide DPSs for this species, the North Atlantic DPS being inclusive of this region. The range of this DPS extends from the boundary of South and Central America, north along the coast to include Panama, Costa Rica, Nicaragua, Honduras, Belize, Mexico, and the United States East Coast. The range extends due east across the Atlantic Ocean to include a portion of the west coast of Africa. It was re-listed as a threatened species (Federal Register, 81 FR 20057).

Green turtles are one of the largest of the hard-shelled sea turtles, but have a comparatively small head. Its carapace is smooth with shades of black, gray, green, brown, and yellow. Adults can grow to three feet in length and weigh up to 300 pounds. Juveniles are omnivorous feeding on both benthic invertebrates as well as algae and sea grasses. Adults are generally herbivorous, feeding on algae and sea grasses. They occur seasonally in mid-Atlantic waters such as the Chesapeake Bay and the Long Island Sound, which serve as foraging and developmental habitat. The principal feeding areas for the species are the west coast of Florida, the Florida Keys, and the Yucatan Peninsula.

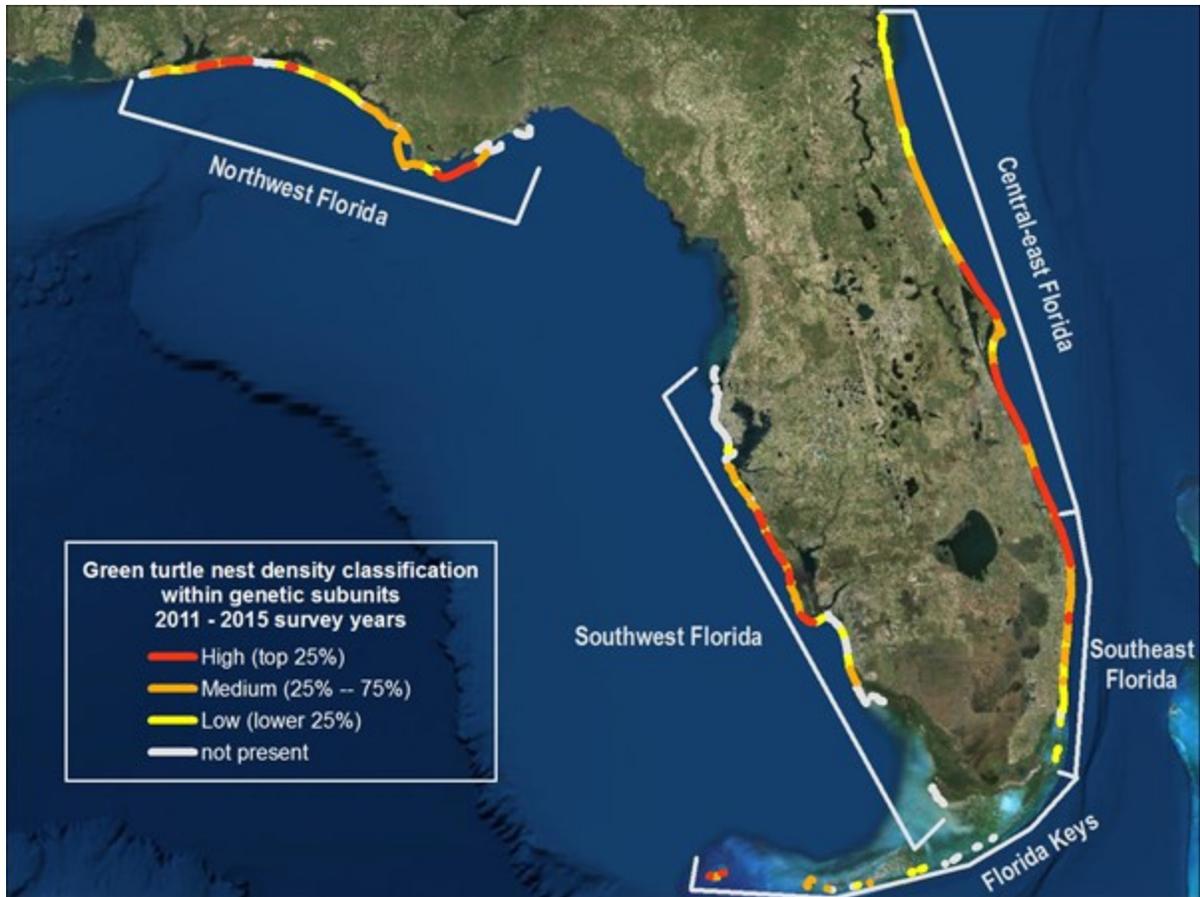
The most important nesting grounds for the Western Atlantic population remains in Costa Rica. In the U.S., nesting mostly occurs in Florida, although it has recently been recorded in North Carolina, at Bald Head Island and the Cape Hatteras National Seashore.

Adults, juveniles, and hatchlings have the potential to occur in the aquatic portions of the Action Area. As they are primarily herbivorous as adults, they prefer shallow, nearshore waters where seagrasses can grow. We would anticipate the back-bay areas of the Action Area to provide preferential foraging grounds for the green sea turtle in the Action Area.

There is no critical habitat for the green sea turtle in Collier County. Its critical habitat in the U.S. is confined to Puerto Rico. Within the Action Area, the beach habitats provide nesting grounds for the green sea turtle. Table 3-2 provides a summary compilation of sea turtle nesting data (all reported species including green sea turtles) in Collier County. From 2010-2019, a total of 47 green sea turtle nests were reported in the Collier County with most of the nesting concentrated at the Keewaydin Island (Table 3-2). While the Action Area includes beach habitats with previous reported nesting, the Collier County beaches reported fairly low numbers of green sea turtles as compared with other areas to the north of these beaches and those on the Atlantic coastal habitats in Florida (Figure 3-10).

**Table 3-2. Loggerhead, Green, Leatherback, Hawksbill, and Kemp's Ridley Sea Turtle summed nest counts from 12 Collier County beaches based from 2010-2019 survey data (FWRI 2020). Percentage of total Collier County nest counts are indicated beside Loggerhead and Green Sea Turtle Counts. Beaches are ordered from north to south.**

Beach	Loggerhead	Green	Leatherback	Hawksbill	Kemp's Ridley
Barefoot Beach Pr	1,829 13%	0 0%	0	0	0
Wiggins Pass State Park	421 3%	0 0%	0	0	0
Vanderbilt Beach	1,784 13%	0 0%	0	0	0
Clam Pass Park	427 3%	0 0%	0	0	0
Parkshore Beach	1,160 8%	1 2%	0	0	0
Naples Beach	1,578 12%	5 11%	0	0	0
Keewaydin Island (North)	1,269 9%	14 30%	1	0	0
Keewaydin Island (South)	2,070 15%	27 57%	0	0	0
Sea Oat Island	134 1%	0 0%	0	0	0
Marco Island	806 6%	0 0%	0	0	0
Ten Thousand Isls Nwr	1,088 8%	0 0%	0	0	0
Cape Romano	1,135 8%	0 0%	0	0	0
Collier County Total	13,701	47	1	0	0



*Figure 3-10. Green sea turtle nest density classification, 2011-2015 (FWRI 2015)*

### 3.3.2 Hawksbill Sea Turtle

The hawksbill sea turtle, listed as endangered on June 2, 1970, is one of the smallest sea turtles of the Gulf of Mexico weighing only 95-165 lb (43-75 kg) as an adult and ranging in size from approximately 62.5 to 94.0 cm straight carapace length. Hawksbills have a hawk-like beak (from which their name originates). Hawksbills are found worldwide in tropical and subtropical seas where they inhabit shallow coastal areas, lagoons, and coral reefs. Being omnivores, hawksbills feed primarily on invertebrates including sponges, benthic crustaceans, tunicates, bryozoans, algae, and mollusks.

We would anticipate the aquatic portions of the Action Area to provide potential foraging habitats for the hawksbill sea turtle, notably the offshore hardbottom habitats. No hawksbill sea turtles have ever been documented as nesting in Collier County and there is no designated critical habitat in the Action Area.

### 3.3.3 Kemp's Ridley Sea Turtle

The Kemp's ridley sea turtle is listed as endangered throughout its range. It is a small-to-medium-sized turtle with a nearly circular shell, weighing up to 100 pounds and reaching up to 2.3 feet in length (USFWS 2019). Primarily a Gulf of Mexico species, it inhabits marine coastal waters with sand or mud bottoms. Juveniles frequent bays. Kemp's ridley sea turtles are

omnivores, but feed primarily on crabs, small animals, plants, and even discarded by catch. The biggest threat to this species is accidental capture in commercial fisheries (shrimp trawls, long lines, finfish trawls, beach seines, gill nets, etc.) (Schmid and Barichivich 2006).

Ninety-five percent of worldwide Kemp's ridley nesting occurs in Tamaulipas, Mexico (NOAA 2019). Nesting occurs on Gulf beaches in south Texas and northern Mexico between April and July, although a few nests have been confirmed in Florida, the Carolinas, and Virginia.

We would anticipate the aquatic portions of the Action Area to provide potential foraging habitats for the Kemp's ridley sea turtle, notably the offshore hardbottom habitats. No Kemp's ridley sea turtles have ever been documented as nesting in Collier County (FWRI 2020) and there is no designated critical habitat in the Action Area.

### **3.3.4 Leatherback Sea Turtle**

Leatherback sea turtles, listed as an endangered species on June 2, 1970 (35 FR 8491), are generally distributed circumglobally. This species has been known to migrate into deep, pelagic, colder and offshore waters more than any other sea turtle species (Lazell 1980; Shoop and Kenney 1992; Bleakney 1965). They have a specialized heat retention circulation that allows them to maintain a higher core body temperature and swimming muscle temperature while inhabiting waters that would cold stun other species of sea turtles. Leatherbacks predominantly feed upon gelatinous zooplankton such as salps and jellyfish. Feeding usually takes place throughout the water column from the surface to depths as far as 1,200 m (Eisenberg and Frazier 1983; Davenport 1988).

Leatherbacks are most commonly associated with the offshore waters of the Gulf of Mexico, occurring in waters beyond the 50 meter isobath. They utilize these deep waters for feeding, resting, and as migratory corridors (Landry and Costa 1999).

Nesting occurs regularly in Puerto Rico, the U.S. Virgin Islands, and along the Atlantic coast of Florida. Leatherback nesting, with the exception of one false crawl on Sanibel Island, has been documented without any consistency in either Collier or Lee Counties (FWRI 2020).

Within the Action Area we would anticipate aquatic portions of the Action Area, namely the offshore locations to provide potential foraging, resting, and migratory habitat. The use of any of the beach habitat as nesting habitat would be very rare and not likely anticipated based on the nesting survey data collected to date.

### **3.3.5 Loggerhead sea turtle**

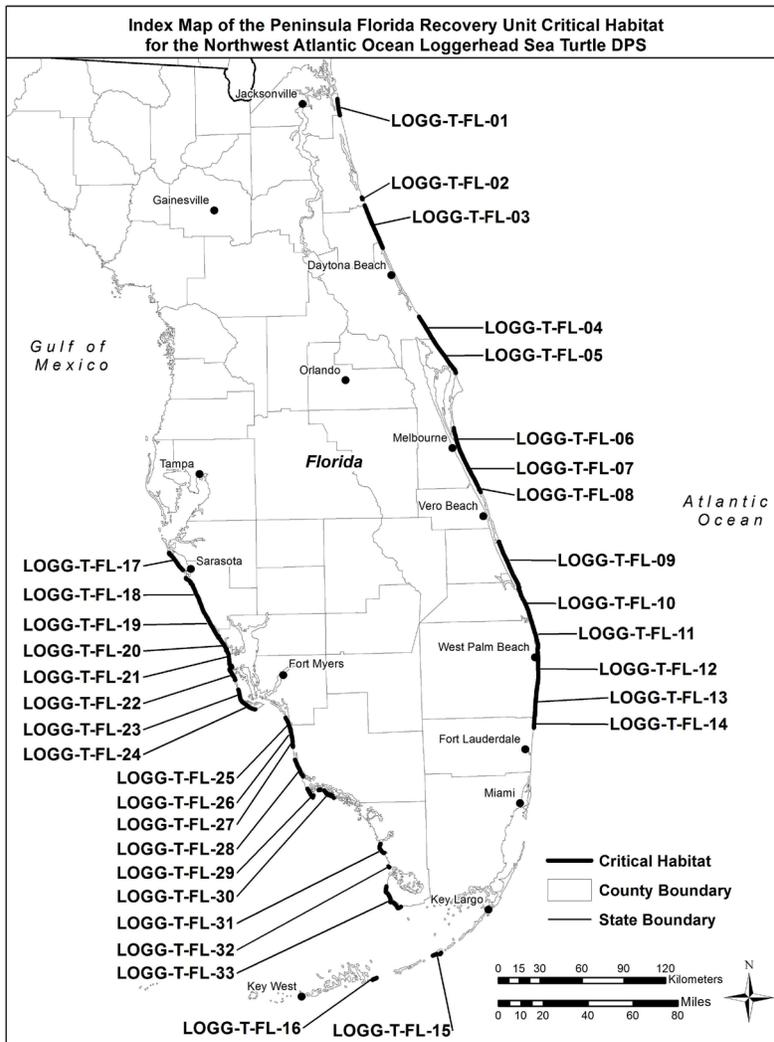
The loggerhead sea turtle was listed as threatened in July 1978. The loggerhead is the most abundant species of sea turtle in U.S. waters. The Northwest Atlantic Distinct Population of loggerhead is found in temperate and subtropical waters, from Florida to Cape Cod. Loggerheads occur in waters from beach to beyond continental shelf, in a range of habitats including offshore waters, continental shelves, bays, estuaries, and lagoons. They have been observed in waters with surface temperatures of 7°C to 30°C, but water temps of greater than 11°C are most favorable. They occur year-round in the ocean waters of North Carolina, South Carolina, Georgia, and Florida.

Loggerheads were named for their relatively large heads. They have powerful jaws that enable them to feed on hard-shelled prey, such as whelks and conch. They eat a wide variety of invertebrates, concentrating on shellfish, both molluscs and crustaceans. Their carapaces are slightly heart-shaped and reddish-brown in adults and subadults, while the undersides are generally a pale yellowish color. The neck and flippers are usually dull brown to reddish brown

on top and medium to pale yellow on the sides and bottom. Adults can reach lengths of an average of three feet and approximately 200 pounds. (USFWS 2015).

The majority of the loggerhead nesting occurs on beaches of the southeastern U.S. Within its range, nesting season occurs late April to early September and hatching season late June through early November. Locally, nesting peaks in the summer, with a mean clutch size of 100-126 eggs, with females laying on average 4.1 nests/season. Sea turtles in Collier County have previously nested both on nourished and non-nourished beaches and no documented preference of sea turtle nesting for non-nourished beaches has ever been documented in Collier County. Table 3-2 provides the documented loggerhead sea turtle nesting data from Collier County from 2010-2019. During this timeframe, a total of 13,701 loggerhead nests were documented on beaches throughout the Collier County documenting the significance of this nesting habitat for loggerhead sea turtles.

Due to the significance of the nesting habitat in the Collier County beaches, portions of the beach habitat in the Action Area have been designated as Loggerhead Sea Turtle Critical Habitat (Figure 3-11). All beach portions of the Action Area located north of the Doctor's Pass Inlet are in designated Loggerhead Sea Turtle Critical Habitat.



**Figure 3-11. Index Map of Critical Habitat Units for the Northwest Atlantic Ocean Loggerhead Sea Turtle Distinct Population Segment (USFWS 2014)**

In addition to the nesting habitat in the Action Area, the aquatic portions of the Action Area provide sea turtle foraging and migratory habitat.

Juveniles are omnivorous and forage on crabs, mollusks, jellyfish, and vegetation at or near the surface. Subadults and adults are primarily coastal dwelling and typically prey on benthic invertebrates such as mollusks and decapods crustaceans in hard bottom habitats. The loggerhead is a long-lived species with an average life span of 57 years (NMFS 2012).

Threats to species include by-catch in fisheries, interactions with vessels and dredges, oil spills, and other marine pollution in the water; and habitat loss, nesting predation or disturbance that affects eggs, hatchlings, and nesting females on land. Based on a five-year status review of the species, which discussed a variety of threats to loggerheads including climate change, NMFS and USFWS determined that they should not be delisted or reclassified. A NMFS model in 2009 had suggested that the populations are most likely declining, although overall nesting population remains widespread, and the trend for nesting population appears to be stabilizing (NMFS 2012).

## 4.0 EFFECTS ANALYSIS

### 4.1 FISH

#### 4.1.1 Giant Manta Ray

Giant manta rays have the potential to forage and or migrate through the near shore hardbottom habitats as well as the more offshore sand borrow areas and open water habitats that occur between these sites. The noise and turbidity impacts resulting from the dredging and beach nourishment operations could potentially result in disturbance impacts that could temporarily impact foraging or migratory behavior for manta rays in the Action Area. Because of the manta rays feeding preference on plankton and small fishes at the surface or the mesopelagic zone, the chance for hopper dredging interactions or entrainment with manta rays in benthic habitats would be unlikely. There is a potential chance of capture of manta rays in sea turtle trawling operations. If captured, any manta rays would be returned to their habitat as soon as possible and mortality would be unlikely. The beach nourishment operations have the potential to temporarily impact portions of the nearshore reef habitats that may be used by manta rays for foraging. Any potential negative impacts would be offset by onsite compensatory mitigation that would consist of construction of new reef habitat near existing hardbottom habitats. It is unlikely that any impacts to manta rays would become entrained or trapped as a result of the surge barrier or sluice gate operations because of their preference for more offshore habitats. Based on the speed of the dredging vessels, a potential strike with a giant manta ray would be highly unlikely.

Therefore, overall, potential impacts to the giant manta rays would be negative, temporary and minor.

#### **Cumulative Impacts**

There are a multitude of past, present and reasonably foreseeable future projects within the Action Area. Previous beach nourishment, dredging and sand transport mitigation projects in the Action Area have resulted in noise and disturbance impacts as well as temporary loss of foraging habitat in hardbottom habitats. Disturbance impacts may have resulted in alterations in normal foraging or migratory behaviors. Past, current, and future vessel interactions have the potential to result in injury or mortality to migratory or foraging manta rays or associated prey fish species. Past, current, and future entanglement in fishery nets and lines is another potential impact that may result in injury or mortality to manta rays.

Climatic changes such as sea level rise and increasing global temperatures are predicted to continue over the next 50 years. Due to the synergistic effects from a combination of factors, accelerating relative sea level rise, and an increase in the frequency and strength of storms, the risk from coastal inundation will rise in the Action Area. However, implementation of Alternative 4A would not predicted to substantially cumulatively or synergistically interact with climate change and/or effects from other actions in the Action Area. Cumulative impacts would be anticipated to be negative, temporary, and minor.

***Implementation of Alternative 4A may affect, and is likely to adversely affect the giant manta ray.***

#### 4.1.2 Gulf Sturgeon

Because of their preferential habitats from the Suwannee River in Florida to the Pearl River on the boundary of Louisiana and Mississippi that is located outside the Action Area, the presence of the Gulf sturgeon would be highly unlikely. As the Action Area is outside the known range of the Gulf sturgeon, the gulf sturgeon would not be anticipated to migrate through, forage or

breed in the Action Area. Table 4-1 describes reported Gulf sturgeon and sea turtle take from hopper dredging operations in the Gulf of Mexico from 1995 – 2019. There is no known record of entrainment or strikes of Gulf sturgeon from dredging or beach nourishment operations in the Action Area. The only hopper dredging take was one Gulf sturgeon reported in the South Atlantic Region which is outside of the Action Area for this project. Therefore, potential entrainment risk would be low. There is a slight potential chance of entanglement of Gulf sturgeon with the sea turtle trawling or entrainment with the hopper dredging activity in the offshore borrow sites, however, this would be highly unlikely because of their lack of preferential habitat in the Action Area. Based on the speed of the dredging vessels to be used, a potential strike with a Gulf sturgeon would be highly unlikely.

Overall, any potential impacts would be anticipated to be negative, temporary, and minor.

**Table 4-1. Hopper dredge take counts of federally threatened and endangered sea turtles and sturgeon from projects in the Gulf of Mexico region from 1995 to 2019 (USACE 2020). Counts are broken out by specimen condition reported (i.e., dead or alive), and summed as total take. The Gulf of Mexico reporting sub-regions are listed in a west-to-east order including West Gulf (WG), Northwest Gulf (NWG), Northeast Gulf (NEG), East Gulf (EG), and South Atlantic (SA); previous Collier County beach nourishment projects fall within the EG Sub-region.**

Sub-region	Sea Turtles					Sturgeon
	Loggerhead	Green	Kemp's Ridley	Leatherback	Hawksbill	Gulf
<i>Reported Alive</i>						
WG	2	15	1	0	0	0
NWG	1	0	0	0	0	0
NEG	0	0	2	0	0	0
EG	1	1	1	0	0	0
SA	0	0	2	0	0	0
<i>Reported Dead</i>						
WG	49	60	16	0	0	0
NWG	52	2	32	0	0	0
NEG	23	1	9	1	0	0
EG	19	1	11	0	0	0
SA	1	0	0	0	0	1
<i>Total Take</i>						
WG	51	75	17	0	0	0
NWG	53	2	32	0	0	0
NEG	23	1	11	1	0	0
EG	20	2	12	0	0	0
SA	1	0	2	0	0	1

### Cumulative Impacts

There are a multitude of past, present and reasonably foreseeable future projects within the Action Area. Previous beach nourishment, dredging and sand transport mitigation projects in

the Action Area have resulted in noise and disturbance impacts as well as temporary loss of foraging habitat in hardbottom habitats. Disturbance impacts may have resulted in alterations in normal foraging or migratory behaviors. Past, current, and future vessel interactions have the potential to result in injury or mortality to migratory or foraging gulf sturgeon or associated prey fish species.

Climatic changes such as sea level rise and increasing global temperatures are predicted to continue over the next 50 years. Due to the synergistic effects from a combination of factors, accelerating relative sea level rise, and an increase in the frequency and strength of storms, the risk from coastal inundation will rise in the Action Area. However, implementation of Alternative 4A would not predicted to substantially cumulatively or synergistically interact with climate change and/or effects from other actions in the Action Area. Any potential impacts would be anticipated to be negative, temporary, and minor.

***Implementation of Alternative 4A may affect, and is likely to adversely affect the Gulf sturgeon.***

#### **4.1.3 Oceanic Whitetip Sharks**

The presence of oceanic whitetip sharks in the Action Area would be highly unlikely as this species is typically found in much further offshore, pelagic habitats. Any occurrence of this species would be highly unlikely but potentially this species could forage or migrate through the borrow site portion of the Action Area. The noise and turbidity impacts resulting from the dredging and beach nourishment operations could potentially result in disturbance impacts that could temporarily impact foraging or migratory behavior. Because of the oceanic whitetip shark's preference for feeding at the surface, the chance for hopper dredging interactions or entrainment with manta rays in benthic habitats would be unlikely. The chance of a vessel strike or entanglement in sea trawling equipment would be very unlikely as this species would likely rapidly flush from the area with this type of disturbance. There would be no anticipated impacts to oceanic whitetip sharks from the operation of the project structural features as it is anticipated this species would occur well offshore of these features. Based on the speed of the dredging vessels to be used, a potential strike with an oceanic whitetip shark would be highly unlikely.

Therefore, overall, potential impacts to the oceanic whitetip shark would be negative, temporary and negligible to minor.

#### **Cumulative Impacts**

There are a multitude of past, present and reasonably foreseeable future projects within the Action Area. Previous dredging and sand transport mitigation projects in the Action Area have resulted in noise and disturbance impacts. Disturbance impacts may have resulted in alterations in normal foraging or migratory behaviors. Past, current, and future vessel interactions have the potential to result in injury or mortality to migratory or foraging oceanic whitetip sharks or associated prey fish species.

Climatic changes such as sea level rise and increasing global temperatures are predicted to continue over the next 50 years. Due to the synergistic effects from a combination of factors, accelerating relative sea level rise, and an increase in the frequency and strength of storms, the risk from coastal inundation will rise in the Action Area. However, implementation of Alternative 4A would not predicted to substantially cumulatively or synergistically interact with climate change and/or effects from other actions in the Action Area. Any potential impacts would be anticipated to be negative, temporary, and negligible to minor.

***Implementation of Alternative 4A may affect but is not likely to adversely affect the oceanic whitetip shark.***

**4.1.4 Smalltooth Sawfish**

In the Action Area, smalltooth sawfish would have the potential to occur in the back-bay estuarine habitats (NOAA personal communication) that could potentially be used as breeding, nursery, and foraging habitat. Mangroves, which are preferential nursery habitat for the smalltooth sawfish, are found throughout the Action Area in the back-bay habitats. Smalltooth sawfish also have the potential to occur in the nearshore Gulf of Mexico habitats of the Action Area and habitats flanking the Marco Island (NOAA n.d.b).

Construction and operations of the surge barriers and associated features and floodwalls would result in approximately 12 acres of direct and indirect permanent mangrove impacts that provide nursery habitat for the smalltooth sawfish. Onsite compensatory mitigation consisting of mangrove plantings would be conducted to offset mangrove functional loss. The construction of the surge barriers and associated features including pump stations and jetties would result in the permanent loss of approximately five acres of open water smalltooth sawfish habitat; habitat loss would occur in the open water estuarine back-bay habitats and sandy open water habitats flanking the Gulf of Mexico. The jetties would permanently disrupt the natural sand transport in the barrier island system as well. Sand transport mitigation that would consist of movement of sand in sand deprived area would also be conducted.

The beach nourishment and sand transport mitigation would result in approximately 9.5 miles of temporary impacts to nearshore habitats and would temporarily impact local fish and invertebrate communities. The placement of the sand on the existing beaches and nearshore habitats would be anticipated to temporarily flush local fish communities and reduce local prey invertebrate communities that could potentially be used as forage habitat by the smalltooth sawfish. However we would anticipate invertebrate prey populations to recover rapidly, approximately within three years following beach nourishment events.

Closure of the storm surge barriers and sluice gate could result in a trapping effect, by impeding passage of smalltooth sawfish that have the potential to be in the Action Area. This could potentially affect their daily movement patterns, migrations in and out of the Action area, and potentially could also impact their foraging in the Action Area. However, with the surge barrier and sluice gate in the open position more than approximately 80% of the time we would not anticipate trapping to substantively impact daily movement patterns, foraging, or migrations. Crushing or pinning of smalltooth sawfish during closures of the surge barriers and sluice gate would be unlikely as it would be anticipated that smalltooth sawfish would likely flush from area during gate operations. We would not expect entrainment of adult or juvenile smalltooth sawfish when the pumping stations are running for the surge barriers and floodwalls. This is because of the significant size of the smalltooth sawfish (at birth these sawfish are approximately two feet in length) and because the pipes would be fitted with trash prevention devices that have grates that are approximately three inches in size which would prevent entrainment of any smalltooth sawfish due to the size of the grates.

Closure and opening of the storm surge barriers has the potential to result in upstream and downstream shifts in salinity, temperature, dissolved oxygen, and nutrients which could also temporarily limit prey species availability. The pump stations for the Wiggins Pass Surge Barrier would also temporarily disrupt the nearshore habitat and sand transport in the immediate vicinity of the discharge pipe that would discharge flows to the Gulf of Mexico. The construction, operation, and maintenance of the structures may result in negative, temporary

and minor to moderate impact to fish and invertebrate prey in the Action Area that could affect smalltooth sawfish temporarily in the vicinity of the surge barriers and sluice gates.

The construction, maintenance, and operation of the structures and also the beach dredging and nourishment operations and mitigation projects would likely result in a disturbance effect to the smalltooth sawfish where they will move away from the turbidity, noise, and visual disturbances. This could result in negative, temporary effect in their daily movement patterns, migration, or foraging in the Action Area.

There is a slightly increased risk that a vessel interaction with a smalltooth sawfish could occur with operation of vessel or dredging/dredged material placement equipment. A risk of a vessel strike would be low because of the very limited amount of time barges or vessels would be in the water associated with construction and maintenance of features and likely due to the limited speed of the vessels. It is estimated that during most operating conditions the barges would travel at a speed of approximately 10 knots or less. Therefore, we would anticipate any potential vessel interactions with smalltooth sawfish to be highly unlikely and discountable.

The project impacts are located outside of the designated Smalltooth Sawfish Critical Habitat and therefore, there would be no impact to Smalltooth Sawfish Critical Habitat.

Overall impacts to smalltooth sawfish would be negative and range from temporary to permanent impacts that are minor to moderate.

### **Cumulative Effects**

There are a multitude of past, present and reasonably foreseeable future projects within the Action Area. Previous beach nourishment, dredging and sand transport mitigation projects in the Action Area have resulted in noise and disturbance impacts as well as temporary loss of foraging habitat. Disturbance impacts may have resulted in alterations in normal foraging or migratory behaviors. Past, current, and future vessel interactions have the potential to result in injury or mortality to migratory or foraging smalltooth sawfish or associated prey fish species.

Climatic changes such as sea level rise and increasing global temperatures are predicted to continue over the next 50 years. Due to the synergistic effects from a combination of factors, accelerating relative sea level rise, and an increase in the frequency and strength of storms, the risk from coastal inundation will rise in the Action Area. However, implementation of Alternative 4A would not predicted to substantially cumulatively or synergistically interact with climate change and/or effects from other actions in the Action Area. Any potential impacts would be anticipated to be negative, temporary to permanent and minor to moderate.

***Implementation of Alternative 4A may affect, and is likely to adversely affect the small tooth sawfish. There would be no adverse modification of Smalltooth Sawfish Critical Habitat.***

## **4.2 WHALES**

### **4.2.1 Atlantic Right Whale, Bryde's Whale, and Sperm Whale**

Listed whale species including Atlantic right whales, Bryde's whales, sperm whales, and potentially other whale species have the potential to forage and or migrate through the more offshore portions of the Action Area. However, due to the predominant typical offshore distribution and preference of listed whale species, the presence of any whales in the Action Area would be a rare and unlikely occurrence.

The noise and turbidity impacts resulting from the dredging and beach nourishment operations and construction and operations of the structural features and mitigation features could

potentially result in a disturbance and noise impacts that could temporarily impact foraging or migratory behavior for whales in the Action Area. None of the estimated peak noise levels exceed levels that would result in Temporary Threshold Shift (TTS) or Permanent Threshold Shift (PTS) for low frequency cetaceans. Therefore, based on the peak noise levels for proxy-based estimates of noise, the Alternative 4A is not predicted to result in temporary or permanent hearing loss to whales if they migrate through the action area, which would be a rare occurrence. Any potential disturbance or noise impacts would be anticipated to be insignificant.

There are no known whale strikes resulting from dredging or sea turtle trawling vessels in the Action Area. Based on the speed of the dredging vessels and because a protected species observer would be onboard the dredging vessel who would site and ensure marine mammal interactions were avoided, a potential strike with any listed whale species be highly unlikely and therefore discountable.

Borrowing operations would not be anticipated to provide any noticeable impacts to whale prey items and any impacts to whale prey would be considered to be insignificant.

Therefore, overall, potential impacts to listed whales would be negative, temporary and negligible to minor.

### **Cumulative Effects**

There are a multitude of past, present and reasonably foreseeable future projects within the Action Area. Previous beach nourishment, dredging and sand transport mitigation projects in the Action Area have resulted in noise and disturbance impacts. Disturbance impacts may have resulted in alterations in normal foraging or migratory behaviors. Past, current, and future vessel interactions have the potential to result in injury or mortality to migratory or foraging whale species.

Climatic changes such as sea level rise and increasing global temperatures are predicted to continue over the next 50 years. Due to the synergistic effects from a combination of factors, accelerating relative sea level rise, and an increase in the frequency and strength of storms, the risk from coastal inundation will rise in the Action Area. However, implementation of Alternative 4A would not predicted to substantially cumulatively or synergistically interact with climate change and/or effects from other actions in the Action Area. Any potential impacts would be anticipated to be negative, temporary and negligible to minor.

***Implementation of Alternative 4A may affect but is not likely to adversely affect listed whales.***

## **4.3 SEA TURTLES**

### **4.3.1 Green, Kemp's ridley, Leatherback, Hawksbill, and Loggerhead Sea Turtles**

We would anticipate that the back-bay habitat impacts and nearshore sandy benthic habitats would be potentially utilized by green sea turtles, Kemp's ridley sea turtles, and loggerhead sea turtles as these habitats would provide foraging and migratory habitat. In the case of loggerheads and green sea turtles, nearshore aquatic habitats are used to reach beaches where they lay nests. Green sea turtles, hawksbill sea turtles, Kemp's ridley sea turtles, loggerhead sea turtles could also potentially be using the hardbottom habitats as foraging and migratory habitat. We would anticipate the leatherbacks to be much further offshore past the hardbottom habitats in most cases due to their preferential foraging habitats. All species have the potential to be offshore of the hardbottom habitats potentially using these area as foraging and migratory habitat.

The construction and operation of the surge barriers would result in the loss of approximately one acre of seagrass in the back-bay habitats resulting in the potential loss of foraging habitat for green sea turtles. Onsite compensatory seagrass mitigation would be conducted to offset any potential impacts. The construction of the surge barriers and associated features including pump stations and jetties would result in the permanent loss of approximately five acres of open water habitat that is potential sea turtle migratory habitat; habitat loss would occur in the open water estuarine back-bay habitats and sandy open water habitats flanking the Gulf of Mexico. The jetties would permanently disrupt the natural sand transport in the barrier island system as well. Sand transport mitigation that would consist of movement of sand in sand deprived area would also be conducted.

The hopper dredging activities at the Shoal Area T1 and Shoal Area T2 sites have to potential to result in sea turtle entrainment. Sea turtle entrainment from hopper dredging typically results in mortality to the sea turtle. Table 4-2 shows reported sea turtle entrainment from hopper dredging operations in the Gulf of Mexico Region from 1995 – 2020 (USACE 2020). The Action Area is located in the East Gulf (EG) Sub-region provided in Table 4-2. In the EG Sub-region, sea turtle entrainment from hopper dredging was reported for green sea turtles, Kemp’s ridley sea turtles, and loggerhead sea turtles. The highest take impact was to loggerhead sea turtles (20 takes), followed by Kemp’s ridley sea turtles (12), and green sea turtles (2). Entrainment rates from hopper dredging in the Gulf of Mexico from 1995 to 2019 were also computed from take numbers presented in Table 4-2 (Table 4-3).

**Table 4-2. Hopper dredge take counts of federally threatened and endangered sea turtles and sturgeon from projects in the Gulf of Mexico Region with start dates spanning 1995 to 2019 (USACE 2020). Counts are broken out by specimen condition reported (i.e., dead or alive), and summed as total take. The Gulf of Mexico reporting sub-regions are listed in a west-to-east order including West Gulf (WG), Northwest Gulf (NWG), Northeast Gulf (NEG), East Gulf (EG), and South Atlantic (SA); previous Collier County beach nourishment projects fall within the EG sub-region.**

Sub-region	Sea Turtles					Sturgeon
	Loggerhead	Green	Kemp's Ridley	Leatherback	Hawksbill	Gulf
<i>Entrainment Take - Reported Alive</i>						
WG	2	15	1	0	0	0
NWG	1	0	0	0	0	0
NEG	0	0	2	0	0	0
EG	1	1	1	0	0	0
SA	0	0	2	0	0	0
<i>Entrainment Take - Reported Dead</i>						
WG	49	60	16	0	0	0
NWG	52	2	32	0	0	0
NEG	23	1	9	1	0	0
EG	19	1	11	0	0	0
SA	1	0	0	0	0	1
<b>Total Entrainment Take</b>						
WG	51	75	17	0	0	0
NWG	53	2	32	0	0	0

NEG	23	1	11	1	0	0
EG	20	2	12	0	0	0
SA	1	0	2	0	0	1

**Table 4-3. Hopper dredge rate of take (turtles/million cubic yards dredged) for Loggerhead, Green, and Kemp’s Ridley sea turtles from projects in the Gulf of Mexico region with start dates spanning 1995 to 2019 (USACE 2020). Rates are broken out by specimen condition reported (i.e., dead or alive), and summed as total take. The Gulf of Mexico reporting sub-regions are listed in a west-to-east order including West Gulf (WG), Northwest Gulf (NWG), Northeast Gulf (NEG), East Gulf (EG), and South Atlantic (SA); previous Collier County beach nourishment projects fall within the EG sub-region. Hawksbill and Leatherback sea turtles, and Gulf Sturgeon rates are considerably lower and are excluded from the table.**

Sub-region	Cubic Yards Dredged (Millions)	Loggerhead	Green	Kemp's Ridley
<i>Entrainment Rate - Reported Alive</i>				
WG	87.8	0.023	0.171	0.011
NWG	488.4	0.002	0.000	0.000
NEG	109.5	0.000	0.000	0.018
EG	32.1	0.031	0.031	0.031
SA	5.3	0.000	0.000	0.378
<i>Entrainment Rate - Reported Dead</i>				
WG	87.8	0.558	0.683	0.182
NWG	488.4	0.106	0.004	0.066
NEG	109.5	0.210	0.009	0.082
EG	32.1	0.593	0.031	0.343
SA	5.3	0.189	0.000	0.000
<i>Total Entrainment Take Rate</i>				
WG	87.8	0.581	0.854	0.194
NWG	488.4	0.109	0.004	0.066
NEG	109.5	0.210	0.009	0.100
EG	32.1	0.624	0.062	0.374
SA	5.3	0.189	0.000	0.378

Within the EG Sub-region, hopper dredging data collected from projects starting between 1995 - 2019 from the Action Area in Collier County, there were zero reported takes of identifiable threatened and endangered sea turtles or sturgeon. Because our project would be extremely similar in terms of dredging and beach nourishment methods to the previous Collier County beach nourishment projects, entrainment risk of sea turtles would anticipated to be low. Also, Reasonable and Prudent Measures and Terms and Conditions as outlined in the Revision 2 to the NMFS November 19, 2003, Gulf of Mexico Regional Biological Opinion (GRBO) to the U.S. Army Corps of Engineers (COE) on Hopper Dredging of Navigation Channels and Borrow Areas in the U.S. Gulf of Mexico and the associated NMFS (2003) Biological Opinion would be followed which provide protective measures to avoid and minimize any potential for sea turtle entrainment.

We expect to conduct relocation trawling during hopper dredging events in order to reduce lethal take following NMFS guidance on trawling methodology, handling, and reporting. While the intent is to reduce lethal take, the process of relocating ESA-listed species is, in itself, a form of take under the ESA. Injurious or lethal take from relocation trawls is extremely uncommon, and as such is generally considered discountable by NMFS when assessing impacts of dredge projects (NMFS 2020). Historical data on noninjurious takes from relocation trawling were available for hopper dredge projects within the Gulf of Mexico at varied spatial and temporal resolution. Annual summary report data from USACE Operations and Dredging Endangered Species System (ODESS) (USACE 2020) and a consultant (Coastwise Consulting, Inc. 2007) detail individual projects from individual fiscal years 2006 – 2011 at and within sub-region scale (Table 4-4). Additionally, the 2020 South Atlantic Region Biological Opinion for Dredging and Material Placement Activities in the Southeast United States (i.e., 2020 SARBO) presented coarsely summarized relocation trawl captures lumping by region and the 2011 – 2018 time-period (see Table 40 in NMFS 2020; Table 4-5). Relocation trawling data at individual year and project resolutions within the 2012 – 2020 time-period for the Action Area are currently in the process of being digitized and/or integrated into the ODESS database and will likely be available by the end of 2020 (Michael Sessions, personal communication, 23 June 2020); these data should be integrated into take estimation as they become available.

**Table 4-4. Known relocation trawling data specific to the EG sub-region by fiscal year including location, hopper dredge effort (volume), trawl effort (days and tows), and turtle encounters (counts and rates of all species cumulatively). Two forms of encounter rate were computed—total turtles/total days and total turtles/total tows.**

	<b>FY2006</b>	<b>FY2007</b>	<b>FY2011</b>
<b>Total Trawl Projects</b>	1	2	1
<b>Project Names / Location</b>	Collier County Shore Protection Project	Tampa Harbor Entrance Channel, Siesta Key Beach Renourishment	Longboat Key N End Beach Nourishment
<b>Dredged Volume (cubic yards)</b>	667,562	1,606,401	139,867
<b>Total Trawl Days</b>	103	122	90
<b>Total Tows</b>	2319	3318	2184
<b>Tows Per Day</b>	22.51	25.14	24.27
<b>Total Turtles Relocated</b>	87	31	25
<b>Total Turtles Trawled/Total Days</b>	0.84	0.25	0.28
<b>Total Turtles Trawled/Total Tows</b>	0.037	0.009	0.011

FY = Fiscal Year

Fiscal years with EG-specific hopper dredge projects with relocation trawling included 2006, 2007, and 2011 (Table 4-4); data in annual summary reports from ODESS indicate no active hopper dredge projects in the EG 2008 – 2010 (USACE 2009, 2010, and 2011). The known EG projects included data specific to our Action Area, reported from a 2005 - 2006 renourishment project by Collier County (Coastwise Consulting, Inc. 2006). These data are especially valuable given the borrow site and beach reaches from the 2005 – 2006 renourishment project overlap with the Action Area herein. Trawling effort was fairly comparable across these years considering ranges of number of trawl days and tows were 90 – 122 and 2,184 – 3,318, respectively. The number and rate of turtles (all species cumulatively) encountered were more

variable among projects though, which may become especially important when determining how to utilize historic relocation data to estimate relocation take. Number of turtles encountered ranged from 25 – 87 total turtles. We present two forms of trawl-turtle encounter rates (turtles/trawl days and turtles/tows), and these rates ranged from 0.25 – 0.87 total turtles/total days and 0.009 – 0.037.

**Table 4-5. Trawl relocations by species including data from ODESS (USACE 2008, 2011) a consultant (Coastwise Consulting, Inc. 2006), and the 2020 SARBO (NMFS 2020). The ODESS and consultant data are annual and specific to the EG sub-region. The 2020 SARBO data are lumped at the Gulf Region resolution and across 2011 – 2018. Relocations per species are presented as counts, proportions of total turtle captures, and EG- and Gulf-specific averages of proportions.**

	Loggerhead	Green	Kemp's Ridley	Hawksbill	Leatherback	All Turtles
<b>FY2006</b> (Coastwise Consulting, Inc. 2006)	86	1	0	0	0	87
<b>FY2007 (USACE 2008)</b>	24	1	6	0	0	31
<b>FY2011 (USACE 2012)</b>	22	1	2	0	0	25
<b>FY2011 - 2018 (Gulf Region lumped, NMFS 2020)</b>	619	49	539	-	20	1227
<b>Proportion of Turtles Trawled (FY2006)</b>	0.9885	0.0115	0.0000	0.0000	0.0000	1.0000
<b>Proportion of Turtles Trawled (FY2007)</b>	0.7742	0.0323	0.1935	0.0000	0.0000	1.0000
<b>Proportion of Turtles Trawled (FY2011)</b>	0.8800	0.0400	0.0800	0.0000	0.0000	1.0000
<b>Proportion of Turtles Trawled (Gulf Region lumped)</b>	0.5045	0.0399	0.4393	-	0.0163	1.0000
<b>Average Proportion of Turtles Trawled (East Gulf [FY2006, FY2007, FY2011])</b>	0.8809	0.0279	0.0912	0.0000	0.0000	1.0000
<b>Average Proportion of Turtles Trawled (all Gulf Region records)</b>	0.7868	0.0309	0.1782	0.0000	0.0041	1.0000

While the locally relevant relocation take data will be invaluable for estimating relocation take, referencing data from more recent, and a larger sample size of, years and projects is preferred. For instance, NMFS states in the 2020 SARBO that best available information for estimating takes is represented by the last five years of recent data (NMFS 2020). Including the Gulf Region data summarized in the 2020 SARBO increases our temporal coverage of relocation takes for total turtles and by species to approximately 12 years (Table 4-5). It should be noted though, these data in the 2020 SARBO are lumped for the entire Gulf Region. Regardless,

these data may help to enhance our expectations of the proportions at which each turtle species will occur in total turtle trawl captures. In general, the data suggest we can expect to take loggerheads in the highest proportions, followed by Kemp’s ridley, green, leatherback, and hawksbill in decreasing order. There are no records of hawksbill sea turtles in relocation trawl records. The exact proportion of the other species varies depending on how these data are summarized though. For instance, the proportion of Kemp’s ridley in total captures varies considerably comparing an EG-specific average (0.091) versus all Gulf Region records average (0.178).

For the Collier County Coastal Storm Risk Management Alternative 4A, we have outlined project constraints and hopper dredge effort that will ultimately facilitate estimating take for several federally listed species, including sea turtles (Table 4-6). Influential project constraints include the number of dredges run at a given time (2), maximum time dredged within a year (9 months or 274 days), number of dredge loads per day possible (4.4), and the number of trawl tows per day (22.51). All but the tows per day parameter estimate are estimates developed by USACE during the Collier County CSRSM planning study; tows per day specifically follow the data from Coastwise Consulting, Inc. (2006) due to the overlapping borrow site and sail route of the Alternative 4A herein and the 2005 - 2006 Collier County renourishment. Expected project effort was estimated for initial construction phase, renourishment phase, and total project period as dredge volumes (cubic yards), dredge time (days, months, and years), and total tows (count). We estimated approximately 28,875,600 cubic yards of sand would be dredged in 126.19 months by hopper dredge cumulatively during the 50-year period of the project. Following the maximum time dredged within a year constraint, this would collectively represent just over 14 calendar years of discontinuous dredge time and 86,400 over the life of the project. This includes dredging during the initial construction phase, plus during seven staggered renourishment events thereafter. Initial construction volume is estimated as 5,765,200 cubic yards over 25.79 dredge months. Our constraints suggest this would represent 2 calendar years and 8 months of ongoing dredge project effort. The individual renourishment events are estimated to average 3,301,486 cubic yards over approximately 15.08 dredge months and 17,654. Our constraints suggest this would represent one calendar year and three months, and 10,325 tows, per renourishment event.

**Table 4-6. Estimated offshore hopper dredge constraints and effort in the Action Area for the Collier County Coastal Storm Risk Management Alternative 4A (i.e., the Alternative 4A). Constraints include the number of dredges used, maximum annual dredge time (days, months), and dredge loads per day. Expected project effort was estimated for initial construction phase, renourishment phase, and total project period as dredge volumes (cubic yards), dredge time (days, months, and years), and total tows (count).**

<b>Hopper Dredge Constraints and Effort Parameters</b>	<b>Estimates</b>
<b><i>Project Constraints</i></b>	
Number of dredges at a given time	2
Maximum number of months/year dredged	9
Maximum number of days/year dredged	274
Loads/day (assumes 2 dredges)	4.4
Tows per day (Coastwise Consulting, Inc. 2006)	22.51

<b>Expected Project Effort</b>	
Initial Construction Volume	5,765,200
Average Renourishment Volume	3,301,486
Total Project Volume (Initial Construction + 7 Renourishment Events)	28,875,600
Dredge Time (months) - Initial Construction	25.79
Dredge Time (years) - Initial Construction	2.87
Dredge Time (days) - Initial Construction	784.29
Dredge Time (months) - Per Average renourishment events	15.08
Dredge Time (years) - Per Average renourishment events	1.68
Dredge Time (days) - Per Average renourishment events	458.68
Dredge Time (months) - Total Project (Over 50 Years)	126.19
Dredge Time (years) - Total Project (Over 50 Years)	14.02
Dredge Time (days) - Total Project (Over 50 Years)	3,838.28
Total Tows - Initial Construction	17,654
Total Tows - Per Average Renourishment Event	10,325
Total Tows - Total Project (Over 50 Years)	86,400

The estimated potential sea turtle entrainment takes by species for the initial construction phase, an average renourishment event, and over the 50-year total project period (rounded to the nearest whole number) are presented in Table 4-7. These takes were estimated using the EG Sub-region Total Entrainment Take Rate for individual species for Alternative 4A presented in Table 4-3. This estimate only accounts for directed and documented sea turtle entrainment. We pair the entrainment take estimate with a total hopper dredge take estimate that accounts for likelihood of undetected hopper dredge takes. The NMFS total take estimates generally assume observers detect and document only 50% of all hopper dredge takes. Examples of undetected take are turtles that are crushed and killed by the suction draghead but not entrained, and turtles that pass through inflow screening devices undetected by observers. We also note that there would be no estimated entrainment of sea turtles from the hydraulic cutterhead dredging operations used for the sand transport mitigation.

**Table 4-7. Estimated Total Entrainment of Sea Turtles with Alternative 4A of the Collier County Coastal Storm Risk Management Project. Estimates are provided for over the entire 50-Year project duration, as well as split out by the initial construction and renourishment phases. Two take estimates are provided per species—entrainment take and total take. Total take estimates assume observers detect and document only 50% of all hopper dredge takes**

Sea Turtle	Estimated Dredging Volume (Cubic Yards)	Entrainment Rate (EG Sub-region) (Entrainment/Million)	Estimated Entrainment Takes (Number of Sea Turtles)	Estimated Total Takes (Number of Entrained + Undetected Sea Turtles)
<i>Initial Construction Phase (Approximately 2-Year Period)</i>				
Green	5,765,200	0.062	0	1
Hawksbill	5,765,200	0	0	0
Kemp's Ridley	5,765,200	0.374	2	4
Leatherback	5,765,200	0	0	0
Loggerhead	5,765,200	0.624	4	7
<i>Average Renourishment Events (Approximately 1.5-Year Period, 7 Events Through 50 Years)</i>				
Green	3,301,486	0.062	0	0
Hawksbill	3,301,486	0	0	0
Kemp's Ridley	3,301,486	0.374	1	2
Leatherback	3,301,486	0	0	0
Loggerhead	3,301,486	0.624	2	4
<i>Total Project Volumes (Over 50-Year Period)</i>				
Green	28,875,600	0.062	2	4
Hawksbill	28,875,600	0	0	0
Kemp's Ridley	28,875,600	0.374	11	22
Leatherback	28,875,600	0	0	0
Loggerhead	28,875,600	0.624	18	36

A preliminary estimate of noninjurious relocation trawl sea turtle takes (all species lumped) for the initial construction phase, an average renourishment event, and over the total 50-year project period (rounded to the nearest whole number) are presented in Table 4-8. These takes were estimated by adopting several data points from the most locally-relevant records (i.e., 2005 – 2006 Collier County renourishment) to serve as critical parameter estimates, including tows per day (22.51), and maximum trawl rates (turtles/tow and turtles/day). Pairing this information with our expected hopper dredge effort (volumes and dredge time) we generated two possible sea turtle relocation trawl take estimates per the three project periods considered, based on tows and trawl days (Table 4-8). Total project relocation takes (over 50 years) were estimated to range between 3,457 and 3,224 based on total tows and total dredge time, respectively. The estimates based on number of tows are always higher due to the trawl capture rates used. The tows-based take estimates for initial construction and the average renourishment events were 706 turtles and 413 turtles, respectively. These estimate can simply

be broken down by species using the proportions of total capture presented in Table 4-5; however, there is some uncertainty in how to best utilize these data and coordination is ongoing with the NMFS. These estimates provide preliminary but invaluable insight on the noninjurious take from relocation trawling that would take place during the proposed project. Importantly, these estimates suggest that Alternative 4A of the Collier County CSRSM study would fall within the annual (and triennial average) relocation trawl take limit of 300 turtles set by NMFS.

**Table 4-8. Estimated total relocation trawl takes by project period from two types of trawl take rates, turtles per tows and turtles per trawl days.**

	<b>Initial Construction</b>	<b>Per Renourishment Event</b>	<b>Total Project</b>
<b>Trawl Days</b>	784	459	3,838
<b>Maximum Tows Per Period</b>	17,658	10,327	86,417
<b>Maximum Trawl Rate - All Turtles / Tows</b>	0.04	0.04	0.04
<b>Maximum Trawl Rate - All Turtles / Days</b>	0.84	0.84	0.84
<b>Total Trawl Takes (turtles/tows x tows)</b>	706	413	3,457
<b>Total Trawl Takes (turtles/days x days)</b>	659	385	3,224

The beach nourishment and sand transport mitigation would result in approximately 9.5 miles of temporary impacts to nearshore habitats and would temporarily impact local fish and invertebrate communities. The placement of the sand on the existing beaches and nearshore habitats would be anticipated to temporarily flush local fish communities and reduce local prey invertebrate communities used by sea turtles. However we would anticipate invertebrate prey populations to recover rapidly, approximately within three years following beach nourishment events.

Closure of the storm surge barriers and sluice gate could result in a trapping effect, by impeding passage of sea turtles that have the potential to be in the Action Area. This could potentially affect their daily movement patterns, migrations in and out of the Action area, and potentially could also impact their foraging in the Action Area. However, with the surge barrier and sluice gate in the open position more than approximately 80% of the time we would not anticipate trapping to substantively impact daily movement patterns, foraging, or migrations. Crushing or impingement of sea turtles during closures of the surge barriers and sluice gate would be unlikely as visual inspections (or equivalent measures) would be conducted to ensure no protected species are in the vicinity of the surge barriers and sluice gate prior to closure. Entrainment of adult or juvenile sea turtles would not be anticipated when the pumping stations are running for the surge barriers and floodwalls. Pump station pipes would be fitted with trash prevention devices that have grates that are approximately three inches in size which would prevent entrainment of any juvenile or adult sea turtles due to the size of the grates. However, sea turtle hatchlings would have the potential to become entrained in the pump station pipes due to their small size. Therefore, if the pump stations are turned on when sea turtle hatchlings are present it could result in the potential entrainment of hatchlings (most likely loggerhead and green sea turtles based on the historical nesting density data (FWRI 2020)) that would likely result in mortality. The relative rate of entrainment of surge barrier pump stations to turtle

hatchlings is relatively uncertain. To help minimize any potential entrainment impacts to sea turtle hatchlings, pump testing operations would not be conducted during the sea turtle nesting season to the extent practical.

Closure and opening of the storm surge barriers has the potential to result in upstream and downstream shifts in salinity, temperature, dissolved oxygen, and nutrients which could also temporarily limit prey species availability. The pump stations for the Wiggins Pass Surge Barrier would also temporarily disrupt the nearshore habitat and sand transport in the immediate vicinity of the discharge pipe that would discharge flows to the Gulf of Mexico. The construction, operation, and maintenance of the structures may result in a negative, temporary and minor to moderate impact to algae, fish, and invertebrate prey in the Action Area that could affect sea turtles temporarily in the vicinity of the surge barriers and sluice gate.

The construction, maintenance, and operation of the structures and also the dredging and nourishment operations would likely result in a disturbance effect to sea turtles where they will move away from the turbidity, noise, and visual disturbances. This could result in a negative, temporary effect in their daily movement patterns, migration, or foraging in the Action Area.

There is a slightly increased risk that a vessel interaction with a sea turtle could occur with operation of vessel or dredging/dredged material placement equipment in waters where sea turtles are known to occur. A risk of a vessel strike would be low because of the very limited amount of time barges or vessels would be in the water associated with construction and maintenance of features and likely due to the limited speed of the vessels. It is estimated that during most operating conditions the barges would travel at a speed of approximately 10 knots or less. Therefore, we would anticipate any potential vessel interactions with sea turtles to be highly unlikely and discountable.

Construction of the mitigation reefs in the Gulf of Mexico and off of the Marco Island would potentially increase foraging habitats for hawksbill and Kemp's ridley sea turtles providing a permanent and minor benefit. Reef structures would be adequately spacing to ensure they do not pose a risk to sea turtle entrapment.

Overall impacts to sea turtles would be anticipated to be negative to beneficial, temporary to permanent and range from minor to moderate impacts.

### **Cumulative Effects**

There are a multitude of past, present and reasonably foreseeable future projects within the Action Area. Previous beach nourishment, dredging and sand transport mitigation projects in the Action Area have resulted in light, noise and disturbance impacts as well as temporary loss of foraging habitat. Disturbance impacts may have resulted in alterations in normal foraging or migratory behaviors. Past, current, and future vessel interactions have the potential to result in injury or mortality to migratory or foraging sea turtles or associated prey fish species. Entanglement in fishing gear and lines is a continuous threat to sea turtles.

Climatic changes such as sea level rise and increasing global temperatures are predicted to continue over the next 50 years. Due to the synergistic effects from a combination of factors, accelerating relative sea level rise, and an increase in the frequency and strength of storms, the risk from coastal inundation will rise in the Action Area. However, implementation of Alternative 4A would not predicted to substantially cumulatively or synergistically interact with climate change and/or effects from other actions in the Action Area. Any potential impacts would be anticipated to be negative to beneficial, temporary to permanent and minor to moderate.

***Implementation of Alternative 4A may affect, and is likely to adversely affect the green sea turtle, hawksbill sea turtle, Kemp's ridley, leatherback sea turtle, and loggerhead sea turtle.***

## **5.0 PLANNED MITIGATION MEASURES/BEST MANAGEMENT PRACTICES**

For any potential final alignments, avoidance and minimization practices will be employed to the maximum extent practicable for all potential impacts. Specific examples of best management practices to avoid and minimize impacts to air quality during temporary construction conditions:

1. All Reasonable and Prudent Measures and Terms and Conditions as described in the Shore Protection Activities along the Coast of Florida Statewide Programmatic Biological Opinion shall be followed (2015).
2. The Standard Manatee Conditions for In-Water Work would be followed (USFWS 2011).
3. Barges will be operated at approximately 10 knots or less to reduce any potential interactions with marine mammals and sea turtles.
4. When in the open condition, the surge barriers and sluice gate shall have opening(s) that are large enough to prevent entrainment of aquatic protected species to the extent practical.
5. A visual inspection of the surge barriers will be conducted prior to closure to ensure no crocodiles, marine mammals, or sea turtles are crushed/injured during closure operations.
6. Storm surge barrier pumping station discharge pipes would be fitted with trash prevention devices that have grates that are approximately three inches in size which would prevent entrainment of any sea turtles or marine mammals due to the size of the grates.
7. Siltation barriers shall be made of material in which a crocodile or smalltooth sawfish cannot become entangled, be properly secured, and be regularly monitored to avoid protected species entrapment. Barriers may not block crocodile or smalltooth sawfish entry to or exit from designated critical habitat without prior agreement from the National Marine Fisheries Service's Protected Resources Division.
8. All vessels associated with the construction project shall operate at "no wake/idle" speeds at all times while in the construction area and while in water depths where the draft of the vessel provides less than a four foot clearance above the bottom. All vessels will preferentially follow deep-water routes (e.g. marked channels) whenever possible.
9. If a crocodile or smalltooth sawfish is seen within 100 yards of the active daily construction operation or vessel movement, all appropriate precautions shall be implemented to ensure its protection. These precautions shall include cessation of operation of any moving equipment closer than 50 feet of a crocodile or smalltooth sawfish. Operation of any mechanical construction equipment shall cease immediately if a crocodile or smalltooth sawfish is seen within a 50-ft radius of the equipment. Activities may not resume until the protected species has departed the project area of its own volition.
10. To the extent practical, surge barrier pump testing operations would not be conducted during the sea turtle nesting season to avoid potential hatching entrainment impacts at the pump stations.

## 6.0 SUMMARY OF FINDINGS

Table 6-1 summarizes the findings for each species and critical habitat occurring or with the potential to occur in the action area.

**Table 6-1. Endangered Species Act, Section 7 Findings: Species and Critical Habitats under the Jurisdiction of the National Marine Fisheries Service**

Taxonomic Category/Common Name	Scientific Name	Status	Finding
<b>FISH</b>			
Giant manta ray	<i>Manta birostris</i>	T	May Affect, Likely to Adversely Affect
Gulf sturgeon	<i>Acipenser oxyrinchus desotoi</i>	T	May Affect, Likely to Adversely Affect
Oceanic whitetip shark	<i>Carcharhinus longimanus</i>	T	May Affect, Not Likely to Adversely Affect
Shortnose sturgeon	<i>Acipenser brevirostrum</i>	E	No Effect
Smalltooth sawfish	<i>Pristis pectinata</i>	E	May Affect, Likely to Adversely Affect
<b>WHALES</b>			
Bryde's whale	<i>Balaenoptera edeni</i>	E	May Affect, Not Likely to Adversely Affect
North Atlantic right whale	<i>Eubalaena glacialis</i>	E	May Affect, Not Likely to Adversely Affect
Sperm Whale	<i>Physeter macrocephalus</i>	E	May Affect, Not Likely to Adversely Affect
<b>SEA TURTLES</b>			
Green sea turtle (North and South Atlantic DPS)	<i>Chelonia mydas</i>	T	May Affect, Likely to Adversely Affect
Hawksbill sea turtle	<i>Eretmochelys imbricata</i>	E	May Affect, Likely to Adversely Affect
Kemp's ridley sea turtle	<i>Lepidochelys kempii</i>	E	May Affect, Likely to Adversely Affect
Leatherback sea turtle	<i>Dermochelys coriacea</i>	E	May Affect, Likely to Adversely Affect

Taxonomic Category/Common Name	Scientific Name	Status	Finding
Loggerhead sea turtle (Northwest Atlantic Ocean DPS)	<i>Caretta caretta</i>	T	May Affect, Likely to Adversely Affect
Smalltooth Sawfish Critical Habitat			No adverse modification

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# **COLLIER COUNTY COASTAL STORM RISK MANAGEMENT PROJECT**

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## **Biological Assessment Submitted to the U.S. Fish and Wildlife Service**

**U.S. Army Corps of Engineers  
Norfolk District  
803 Front Street  
Norfolk, Virginia 23510**

**July 31, 2020**



**U.S. Army Corps  
of Engineers  
Norfolk District**

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## **1.0 INTRODUCTION**

### **1.1 SCOPE OF THE CONSULTATION**

The scope of this Endangered Species Act (ESA), Section 7 consultation is limited to those federally listed species under the jurisdiction of the U.S. Fish and Wildlife Service. Another, separate Biological Assessment has been prepared for species and critical habitats under the jurisdiction of the National Oceanographic and Atmospheric Administration Fisheries (NMFS) and will be coordinated separately from this Biological Assessment.

### **1.2 AUTHORITY**

The study authority lies in Section 4033 of the Water Resources Development Act of 2007 (Public Law 110-114).

“The Secretary shall conduct a study to determine the feasibility of carrying out a project for hurricane and storm damage reduction and flood damage reduction in the vicinity of Vanderbilt, Park Shore, and Naples beaches, Collier County, Florida.”

### **1.3 LEAD FEDERAL AGENCY AND SUBMITTING AGENCIES**

The lead federal agency for this action is the U.S. Army Corps of Engineers (USACE). The nonfederal sponsor is the Collier County. Because of the anticipated future offshore permitting requirements with the Bureau of Ocean Energy Management (BOEM) due to authorities related to management of offshore mineral resources under the Outer Continental Shelf and Lands Act, please note that this Biological Assessment is being submitted jointly by the USACE and the BOEM.

### **1.4 PURPOSE AND NEED FOR THE ACTION**

Since 1851, Collier County has been repetitively impacted by large storms. On average they have been hit by a tropical cyclone every 2-3 years, including 33 hurricanes, 20 of which were Category 3 or greater. This action is needed to address the coastal storm risk and the purpose is to develop and evaluate various alternatives aimed at increasing coastal resiliency against erosion and flooding. The beaches of coastal Collier County are at risk of storm surge, storm driven wave action, tidal flooding, and erosion. The shoreline is largely within critically eroded areas as designated by the Florida Department of Environmental Protection (FDEP) and is mostly public beaches with the exception of Pelican Bay. In addition, numerous inlets penetrate the interior community of Naples while Marco Island is completely surrounded by water with only two bridges in and out of the island. There are also concerns regarding a dense population of people who require more time and assistance for evacuation, concerns for structures and critical infrastructure, and protection of evacuation routes.

### **1.5 DESCRIPTION OF THE TENTATIVELY SELECTED PLAN, ALTERNATIVE 4A (PREFERRED ALTERNATIVE)**

The Preferred Alternative or Tentatively Selected Plan (Figure 1-1) is Alternative 4A which contains the following measures or features:

- Hopper dredging and sea turtle trawling (offshore borrow dredging at the Outer Continental Shelf Shoal Area T1 and Shoal Area T2)
- Nearshore hydraulic cutterhead dredging and beach nourishment (for sediment transport mitigation);
- Structural features that would consist of floodwalls, a sluice gate, and surge barriers and associated features that would include concrete structures in the dune/beach system, pump stations and two jetties;

- Nonstructural features that would include elevation of residential structures, acquisition/demolition of residential structures and reverting these areas to green space or parks, and floodproofing of commercial structures and condominiums. This would include floodproofing of critical infrastructure;
- Natural and Nature-Based Features that would consist of artificial reef structures; and
- Coral/hardbottom, mangrove, Submerged Aquatic Vegetation (SAV), dune vegetation, and sediment transport onsite compensatory mitigation.

Figure 1-1 provides an overview of the features of the Tentatively Selected Plan, Alternative 4A. Pump stations may be used at the floodwall and the surge barrier, and sluice gate sites to pump out stormwater when the surge barriers/sluice gate are in the closed position or during testing conditions. Please note that in addition to the beach nourishment areas planned and shown in Figure 1-4, additional beach nourishment may also be included between Planning Area 1-2 and south of Planning Area 3 in Planning Area 4 but is contingent upon further evaluation and modeling.

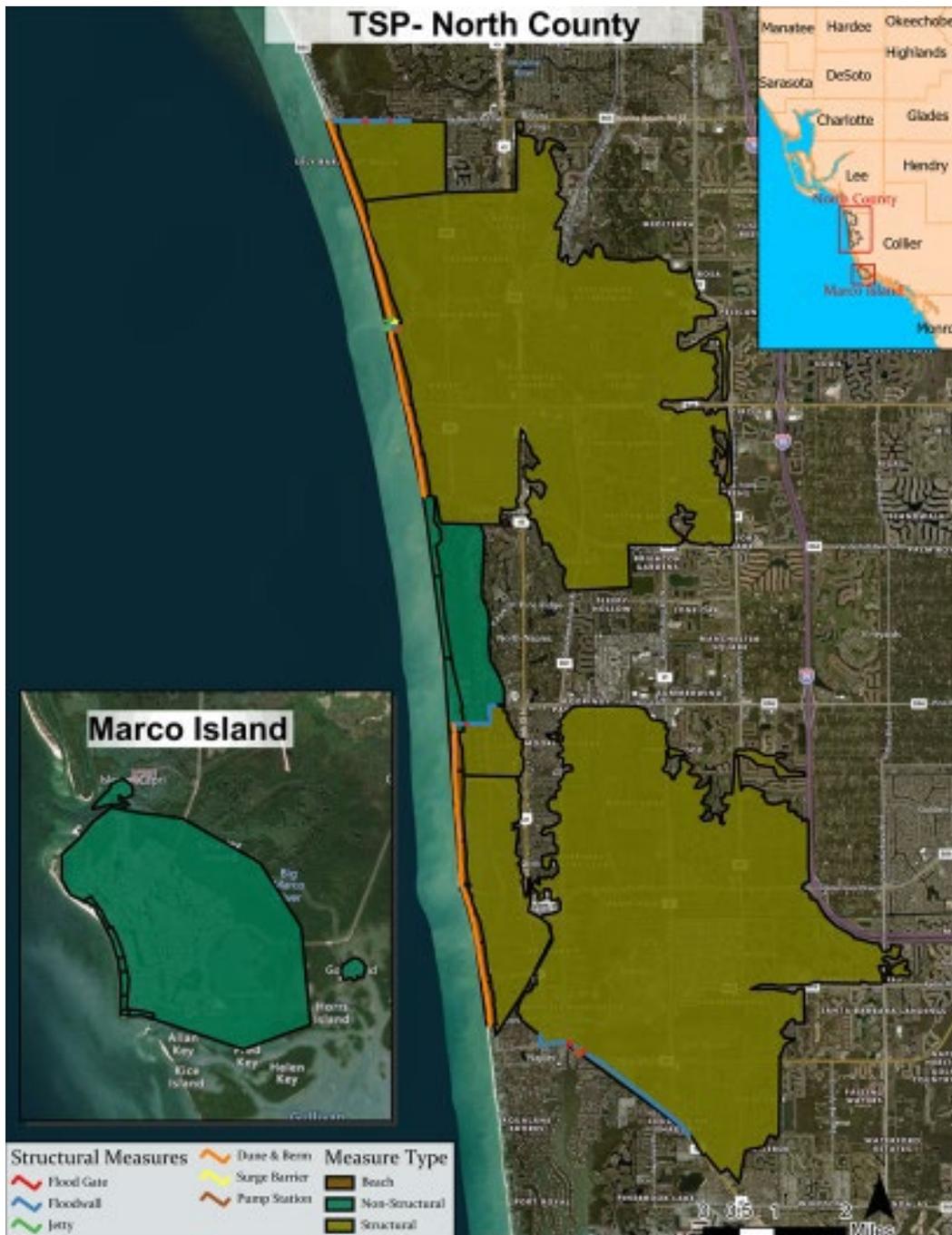


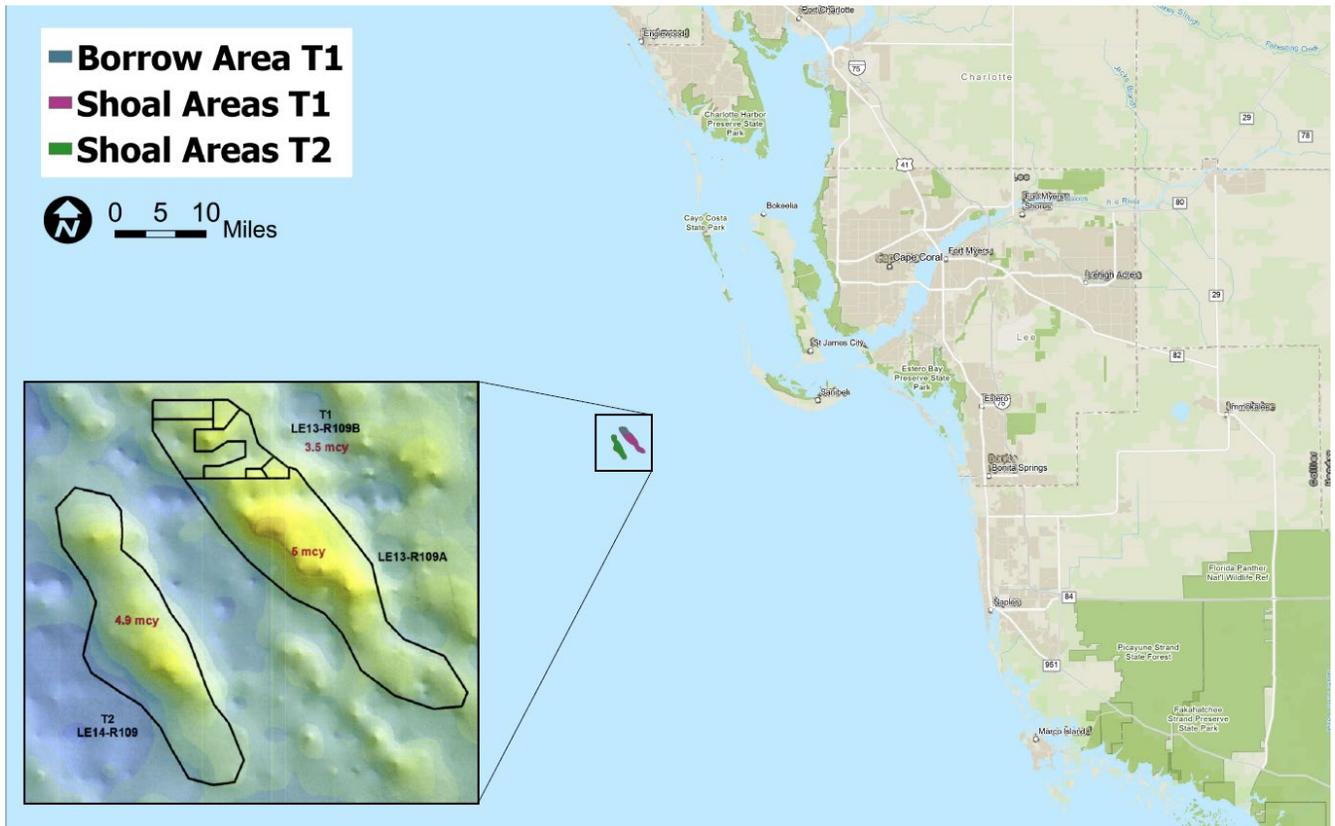
Figure 1-1. Overview of the Tentatively Selected Plan, Alternative 4A

## **PROJECT MEASURES**

### **Dredging and Beach Nourishment**

Sand used in berm and dune construction would be dredged via hopper dredge from two proposed sand shoal borrow areas located in the Outer Continental Shelf approximately 33 nautical miles offshore of Naples, Florida: the Shoal Area T1 and the Shoal Area T2 (Figure 1-2). The northern portion of the Shoal Area T1 (Borrow Area T1; Figure 1-2) has been

previously used as a sand source for past beach nourishment projects in Collier County. The shoals would be dredged via hopper dredge.



**Figure 1-2. Offshore borrow sites, Shoal Area T1 and Shoal Area T2**

After dredging, sand would be transported to beach sites with the hopper dredge and sand would be placed via pipeline from the hopper dredge. Sand placement pipelines would be positioned at sites previously established and permitted in the 2016 Collier County beach re-nourishment projects (Figure 1-3); additional pipeline sites would be established as needed.

The primary sand sources would be expected to be similar to the follow specifications, which would be verified via a sediment testing quality assurance/quality control program during the Preconstruction, Engineering, and Design Phase (PED) of the project:

- Maximum Shell Content: 1% retained on the No. 4 sieve
- Munsell Color Value: Moist Value (Chroma = 1) of 7 or lighter
- Median grain size: 0.33 millimeters

The proposed, estimated maximum berm would extend up to approximately 75 feet from the toe of the vegetation and the dune would be constructed to an estimated maximum height of 14 feet. Berm extensions would extend into existing nearshore aquatic habitats in the Gulf of Mexico. Existing dunes and dune vegetation would be reconstructed. All dune vegetation impacts would require onsite compensatory mitigation that would consist of replanting of native dune species following the dune construction.

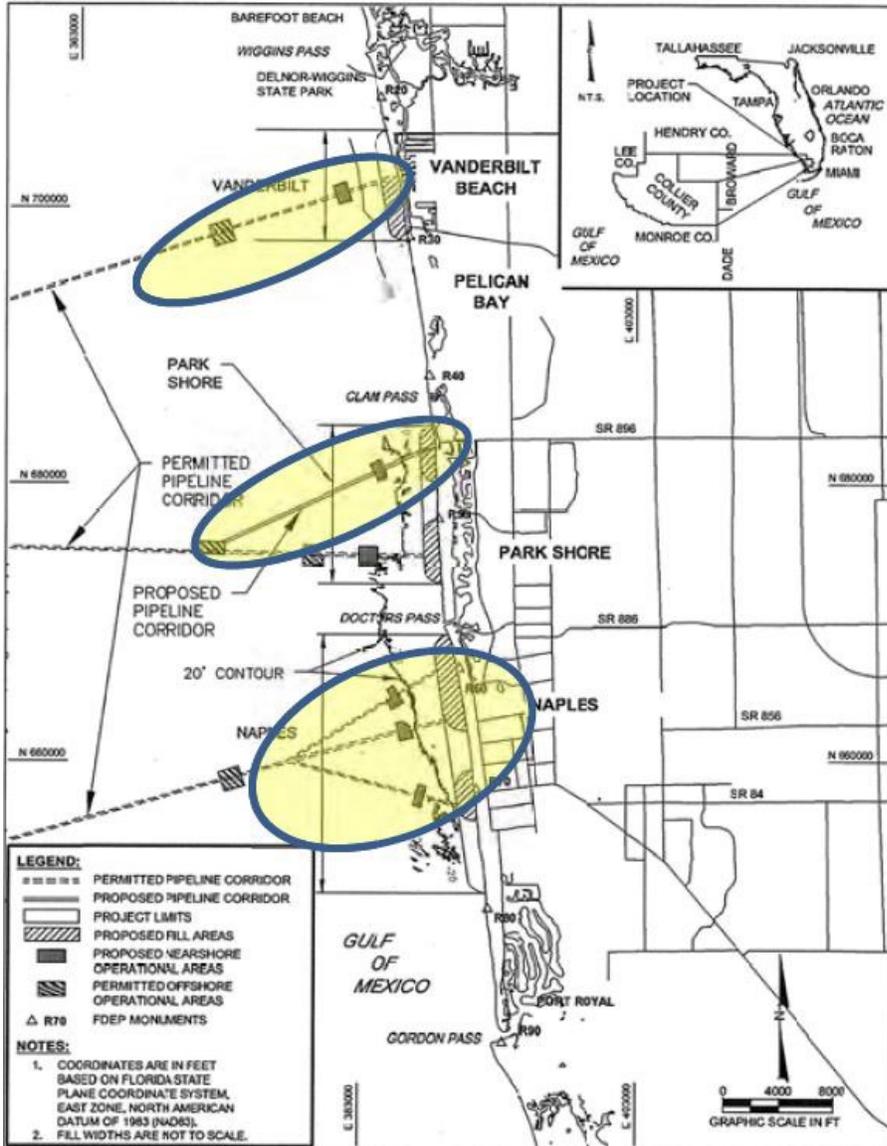


Figure 1-3. Locations of the Collier County Beach Re-nourishment Project Pipeline Corridors (NOAA 2013)

### Floodwalls

Floodwalls would include T-walls and I-wall designs. Any walls taller than approximately six feet would be T-walls, with a maximum height of 30-feet tall. I-walls would be used for wall heights ranging from one to six feet in height.

### Storm Surge Barriers and Sluice Gates

Three types of structural gates were considered for this study. They were sector gates (large openings), miter gates (smaller openings; ≤75 feet wide), and sluice (or tidal) gates.

**Sector gates**—Sector gates are comprised of two sections shaped like pie slices supported on a hinge at the center of a circular arc which swing out in an arc-like motion to form a closing. Because the hydraulic force is directed radially inward toward the vertical axis the load is much more balanced so the gates can be opened and closed in situations with differential head. Sector gates have characteristically fast opening/closing times, may remain partially open for

an extended period of time, and can span gaps several hundred feet wide without intermediate blockage. Sector gates have a more complicated design and also typically have higher construction and maintenance costs, and they require larger land area footprints. The sector gate design was only considered for Wiggins Pass which has a span width of 150 feet.

**Miter gates**—Miter gates consist of a pair of gates mounted on opposing walls that swing out and meet at an angle pointing toward the upstream direction. The gate is kept closed through a difference in water levels. The upstream side should have higher hydraulic loading as the water level rises thus strengthening the locking effect. This type of gate does not perform well in situations with reverse head. Miter gates are the most common type of gate and are typically used in navigation structures such as locks. Miter gates also have relatively quick opening/closing times and moderate construction and maintenance costs. The maximum economical span width for miter gates is approximately 72 feet, and debris may cause issues with closing if it is caught in the miter. The miter gate designs for Wiggins and Doctors Passes would include approximately 72-foot openings with two 40-foot, and two 15-foot lift gates respectively.

**Sluice Gates (Tidal Gates)**—Barriers that cross small tidal creeks are proposed to be sluice gates. The sluice gates considered for this study are vertical rising sluice gates with metal plates, controlled by machinery.

Structures associated with the surge barriers would include pump stations and concrete structures in dune/beach sites as needed.

The gate structures would be closed on average approximately five days (but up to approximately 10 days maximum); it is anticipated that closure events would occur approximately on average five times a year (but up to approximately 10 times). Therefore, we would anticipate the gate structures to be in the open position more than 80% of the time.

## Elevation

This nonstructural technique lifts an existing structure to an elevation that is at least equal to or greater than the design flood elevation. In many elevation scenarios, the cost of elevating a structure an extra foot or two is less expensive than the first foot, due to the cost incurred for mobilizing equipment. Elevation can be performed using fill material, on extended foundation walls, on piers, posts, piles, and columns. Elevation is also a very successful technique for reinforced concrete slab-on-grade structures.

## Floodproofing

This nonstructural technique is applicable as either a stand-alone measure or as a measure combined with other measures such as elevation. There are two types of floodproofing, wet floodproofing and dry floodproofing.

- **Wet floodproofing**—This nonstructural technique allows floodwaters to enter a structure without resulting in damage. As a stand-alone measure, all construction materials and finishing materials need to be water resistant and all utilities must be elevated above the flood elevation. Wet floodproofing is quite applicable to commercial and industrial structures. This measure is generally not applicable to large flood depths and high velocity flows.
- **Dry floodproofing**—This nonstructural technique consists of waterproofing the structure. This can be done to residential homes as well as commercial and industrial structures. This measure achieves flood risk reduction but it is not recognized by the National Flood Insurance Program (NFIP) for any flood insurance premium rate reduction if applied to a residential structure. Based on laboratory tests, a “conventional” built structure can generally only be dry flood proofed up to 3-feet in

elevation. A structural analysis of the wall strength would be required if it was desired to achieve higher protection. A sump pump and French drain system may be installed as part of the measure. Closure panels are used at openings. This concept does not work with basements nor does it work with crawl spaces. For buildings with basements and/or crawlspaces, the only way dry floodproofing could be considered to work is for the first floor to be made impermeable to the passage of floodwater.

### **Acquisition, Demolition and Conversion to Green Space and Parks**

This technique consists of acquiring a structure and land, demolishing it and converting it to green space or a park.

### **Natural and Nature-Based Features**

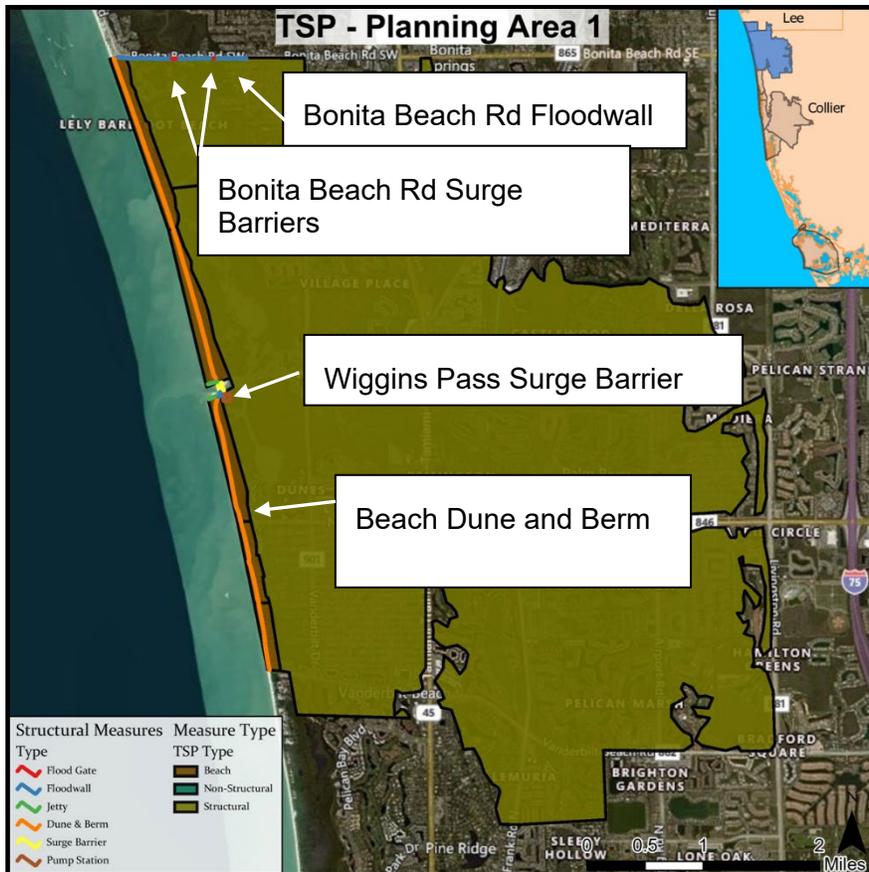
Natural and Nature-Based Features (NNBFs) are components found in natural ecosystems or constructed habitats that mimic natural ecosystems that can be used to enhance the resilience of coastal areas challenged by sea level rise and coastal storms. For this study, artificial reef structures were selected as the preferred NNBF.

### **Onsite Compensatory Mitigation**

It is anticipated that coral/hardbottom, mangrove, SAV, and dune vegetation onsite compensatory mitigation would be required to be conducted to offset functional impacts caused by the beach nourishment and construction and operation of the project structural features. Sand transport mitigation would also be required to offset sediment transport issues caused by proposed jetty at the Wiggins Pass. This would consist of redistribution of sand to more natural locations by hydraulic cutterhead and pipeline to the barrier island system.

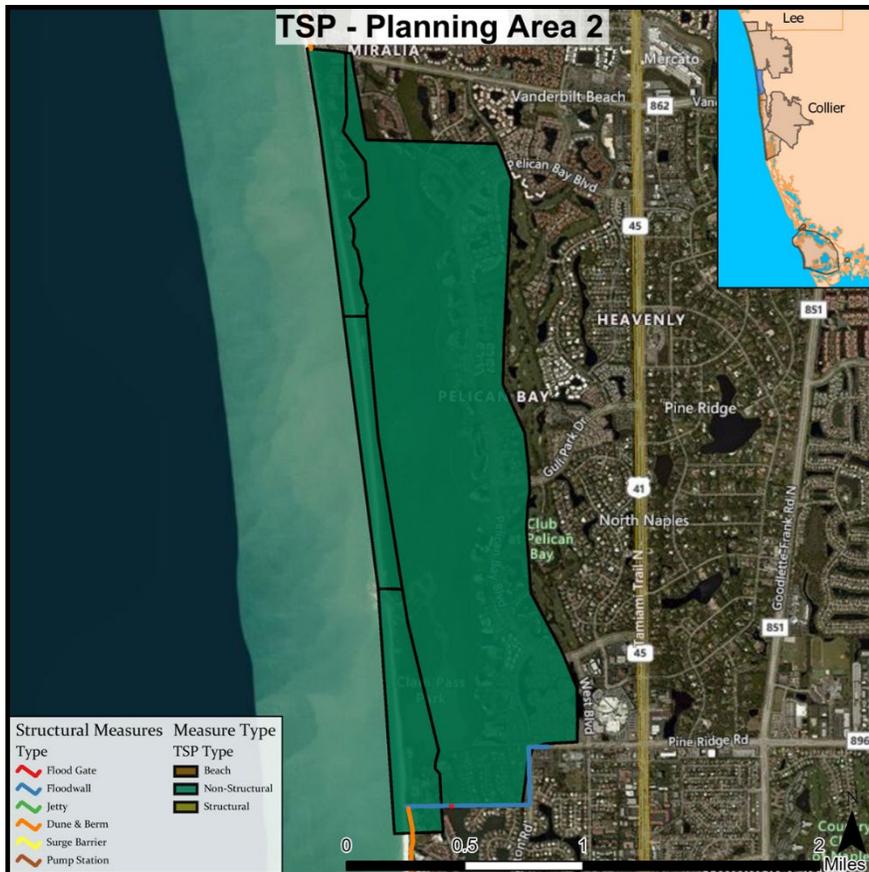
## **PROJECT MEASURES BY PLANNING AREA**

Planning Area 1 (PA1) (Figure 1-4) includes several structural measures formulated to hydraulically isolate upland structures from the effects of coastal storms, including surge. Because of this strategy, the extents of PA1 were defined through a drainage analysis, which gave the planning area its unique shape. The structural measures included are the Wiggins Pass Surge Barrier (which contains concrete structures that extend into the beach/dune system) flanked by a jetty, and a pump station; the Bonita Beach Road floodwall, and the two Bonita Beach Road surge barriers. A higher beach dune and beach berm are also included in PA1 from the northern County line (approximately at Florida DEP range monument 1 (R1)) through Vanderbilt Beach (approximately R29). Please note that in addition to the beach nourishment areas planned and shown in Figure 1-4, additional beach nourishment may also be included between Planning Area 1-2 and south of Planning Area 3 in Planning Area 4 but is contingent upon further evaluation and modeling. Please note that calculations in this Biological Assessment are based on the existing planned beach nourishment areas shown in Figure 1-4 but our impact findings also cover the larger potential additional beach impact areas should they ultimately be included in the Preferred Alternative.



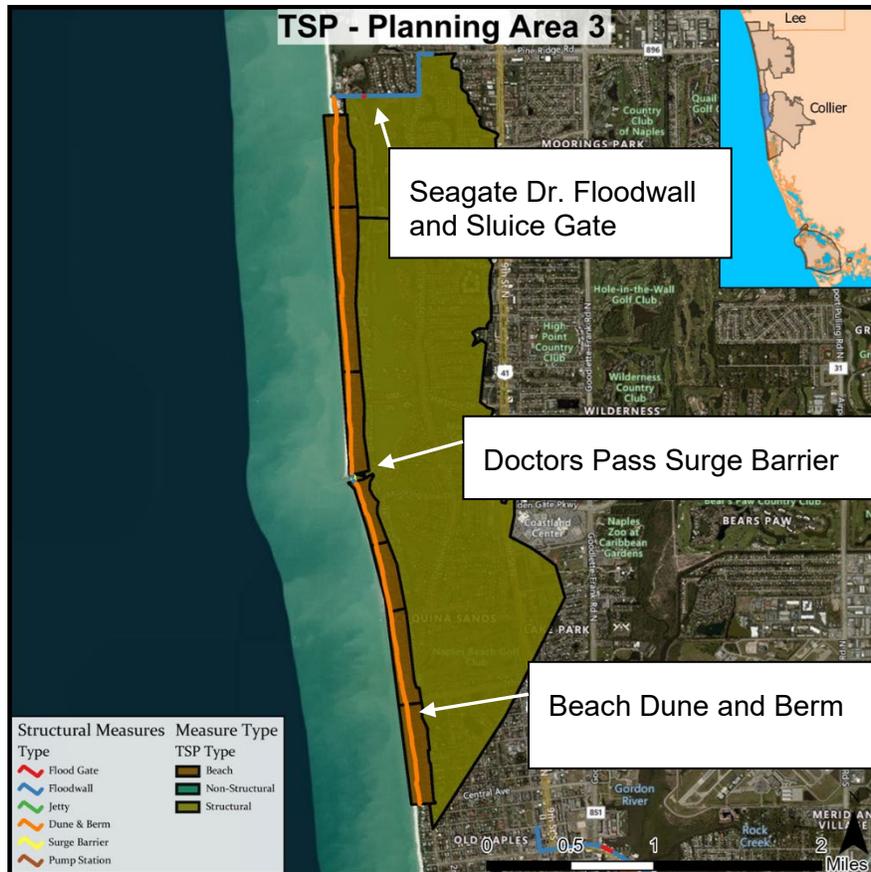
**Figure 1-4. Planning Area 1 (PA1)**

Planning Area 2 (PA2) (Figure 1-5) was formulated as a nonstructural area because the topography did not support the construction of structural measures in accordance with the plan formulation strategy. Throughout PA2 there are structures that were identified for either acquisition, floodproofing, or elevation. The geographic boundary in PA2 was chosen to include structures with first floor elevations less than or equal to the top of wall heights planning the adjacent planning areas, PA1 and PA3, so as to provide a similar level of risk reduction.



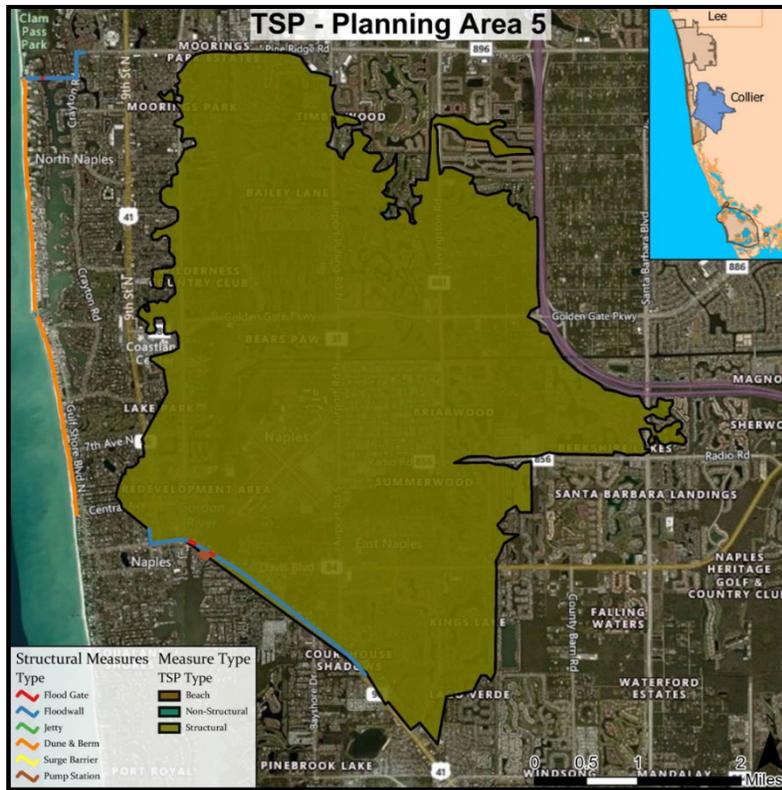
**Figure 1-5. Planning Area 2 (PA2)**

Planning Area 3 (PA3) (Figure 1-6) is the second area containing structural measures and includes the Seagate Drive Floodwall and Sluice Gate, as well as the Doctors Pass Surge Barrier (this feature could potentially also contain concrete structures that extend into the dune/beach system). Additionally PA3 includes a higher beach dune and beach berm from Park Shore to Naples Beach (approximately R46-R68). Similar to PA1, the boundary for PA3 was determined through drainage analysis.



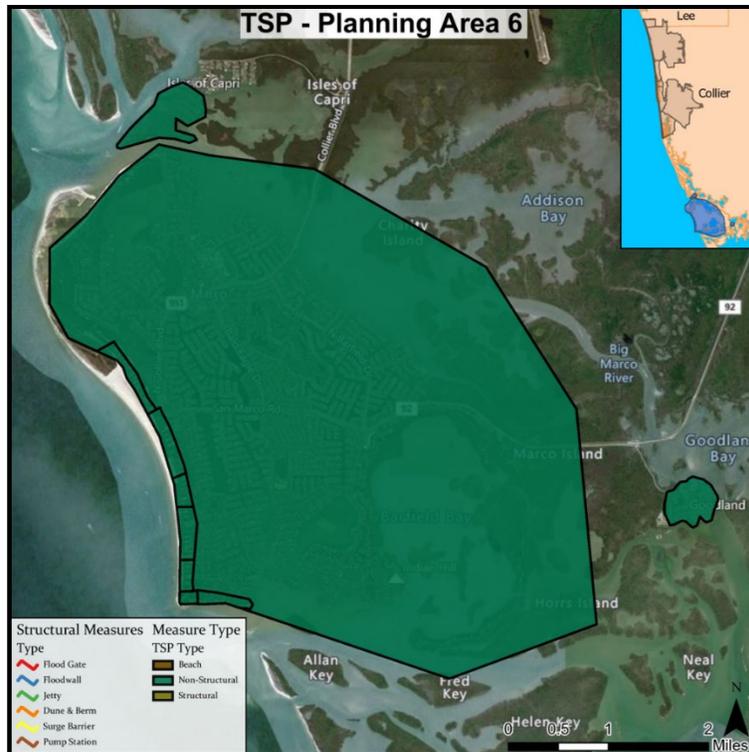
**Figure 1-6. Planning Area 3 (PA3)**

Planning Area 5 (PA) (Figure 1-7) is the third area containing structural measures including the Tamiami Trail Floodwall and Surge Barriers and associated pump station. Like PA1 and PA3, the extents of PA5 were determined using drainage analysis. The boundary of PA5, similar to the other planning area boundaries, includes all ground elevations greater than or equal to the maximum top of wall heights for structural measures. This ensured all structures with first floor elevations less than or equal to the design heights were included in the structure inventory, thereby providing a consistent level of risk reduction across the entire study area.



**Figure 1-7. Planning Area 5 (PA5)**

Planning Area 6 (PA6) (Figure 1-8) represents Marco Island, Isles of Capri, and Goodland. PA6 includes only nonstructural measures because the topography did not support the construction of structural measures in accordance with the plan formulation strategy. Throughout PA6 there are structures that were identified for either acquisition, floodproofing, or elevation. Construction of artificial reefs around the Marco Island are also included as a potential NNBF for this study.



**Figure 1-8. Planning Area 6 (PA6)**

## 2.0 ACTION AREA

The Action Area as it is referred to for threatened and endangered species per 50 CFR 402.02 is defined as “all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action.” The Action Area includes all areas transited by dredging vessels/equipment, barges, and other vessels utilized including portions of the Outer Continental Shelf in and surrounding the Shoal Area 1 and Shoal Area 2 borrowing sites to the shorelines of the Collier County including waters in and around the Marco Island and back-bay habitats of the Collier County. The Action Area includes the area of anticipated circulation pattern shifts and potential water quality impacts. The Action Area encompasses the Collier County beach habitats impacted by the beach nourishment any potential areas of direct and indirect impacts from the structural and nonstructural features of the Alternative 4A. This includes areas of direct impact from the construction, operation, and maintenance of the structural and nonstructural features as well as the area of potential hydrologic and water quality impacts and noise impacts. The Action Area includes the range of noise impacts as they pertain to threatened and endangered species.

## 3.0 FEDERALLY LISTED SPECIES AND CRITICAL HABITATS

Animals and plants listed as endangered or threatened are protected under the Endangered Species Act of 1973, as amended (ESA). According to the ESA, an “endangered species” is defined as any plant or animal species in danger of extinction throughout all or a substantial portion of its range. A “threatened species” is any species likely to become an endangered species in the foreseeable future throughout all or a substantial part of its range. “Proposed Species” are animal or plant species proposed in the Federal Register to be listed under Section 4 of the ESA. “Candidate species” are species for which the USFWS and NMFS have sufficient information on their biological status and threats to propose them as endangered or

threatened under the ESA. Critical habitat is designated per 50 CFR parts 17 or 226 and defines those habitats that are essential for the conservation of a federally threatened or endangered species and that may require special management and protection.

Table 3-1 provides the federally listed species known or with the potential to occur in the Action Area. There are no candidate species known or with the potential to occur in the project Action Area. Piping Plover Critical Habitat, Smalltooth Sawfish Critical Habitat, West Indian Manatee Critical Habitat, and Loggerhead Sea Turtle Critical Habitat is located within portions of the Action Area.

**Table 3-1. Federally listed species under the jurisdiction of the U.S. Fish and Wildlife Service with the potential to occur in the Action in the Action Area (Fish and Wildlife Research Institute (FWRI) 2020; USFWS 2020)**

Taxonomic Category/Common Name	Scientific Name	Status	Critical Habitat in Action Area
<b>BIRDS</b>			
Piping plover	<i>Charadrius melodus</i>	T	Y
Red knot	<i>Calidris canutus rufa</i>	T	N
Wood stork	<i>Mycteria americana</i>	T	N
<b>MAMMALS</b>			
West Indian Manatee	<i>Trichechus manatus</i>	T	Y
<b>REPTILES</b>			
American alligator	<i>Alligator mississippiensis</i>	T	N
American crocodile	<i>Crocodylus acutus</i>	E	N
Green sea turtle (North and South Atlantic DPS)	<i>Chelonia mydas</i>	T	N
Hawksbill sea turtle	<i>Eretmochelys imbricata</i>	E	N
Kemp's ridley sea turtle	<i>Lepidochelys kempii</i>	E	N
Leatherback sea turtle	<i>Dermochelys coriacea</i>	E	N
Loggerhead sea turtle (Northwest Atlantic Ocean DPS)	<i>Caretta caretta</i>	T	Y

### **3.1 BIRDS**

#### **3.1.1 Piping plover**

The piping plover is a small, sand-colored shorebird, measuring just over seven inches in length and primarily found along the sandy beaches of the Atlantic coastline (Alsop 2002). This species nests in the three separate geographic populations in the U.S.: the Great Plains states, the shores of the Great Lakes, and the shores of the Atlantic coast. Birds from all populations overwinter in Florida on the southern Atlantic and Gulf coasts in the U.S. (USFWS 1999). The piping plover is federally and state-listed as threatened, and recovery efforts are geared toward minimizing disturbance to their breeding and wintering areas.

Piping plovers do not breed in Florida, but spend a large portion of the year overwintering there (USFWS 2019). They use beaches, as well as tidal sand and mudflats for foraging in Action Area during winter months. Their diet includes polychaete marine worms, crustaceans, insects, and bivalve mollusks (Nicholls 1989), found on top of or just beneath the surface of moist or wet sand, mud, or shell. They are susceptible to human disturbance due to the nature of their habitat use. Increased use of beaches and tidal flats for recreation is of primary concern. Wintering piping plovers use a variety of habitat patches during fall through spring, moving among them according to changes in tide and weather. Protecting these habitat patches from disturbance is important to ensure that plovers are healthy when they begin their spring migration toward breeding grounds from March to May.

On the Gulf Coast, preferred foraging areas include beaches, mudflats, and small inlets where they feed on various small invertebrates. Piping plovers begin to arrive at the wintering (non-breeding) grounds in approximately mid-July and stay until May.

In response to the declining nature of the population, the USFWS, established critical habitat regions for the wintering piping plovers in August 2001. Designated Piping Plover Critical Habitat is located in the Action Area with most of the designated unit located at Tigertail Beach County Park located at the northwest side of Marco Island. In the Action Area, this critical habitat northern border is on the north side of Big Marco Pass, including Coconut Island and all emerging sand bars. On the south side of Big Marco Pass, the critical habitat boundary starts at the north boundary of Tigertail Beach County Park and extends to just south of the fourth condominium tower south of the County Park.

Within the Action Area there is no piping plover breeding or nesting habitat. The sandy beaches and natural overwash areas in the Action Area and those particularly near the Marco Island and Wiggins Pass inlet provide important overwintering piping plover habitat including foraging and resting grounds.

#### **3.1.2 Red Knot**

The red knot is a medium-sized shorebird about 9 to 11 inches in length and is designated as a federally threatened species under the Endangered Species Act. Red knots migrate over 9,300 miles every spring and fall (USFWS 2019). They overwinter in Florida between November and April, and prefer to forage in coastal habitats that include sand flats adjacent to inlets or passes, sandy mud flats along prograding spits (areas where the land rises with respect to the water level), ephemeral pools, and over wash areas. These substrate types have a richer infauna than the foreshore of high energy beaches and often attract large numbers of shorebirds. The Action Area serves as foraging grounds to overwintering red knots.

The USFWS has not yet designated critical habitat for the red knot. There is no nesting or breeding habitat within the Action Area, however, foraging may occur in the Action Area. Red knots are thought to be vulnerable to the increasing threats of climate change that may impact the arctic tundra ecosystem in their breeding areas, coastal foraging habitats and other foraging habitats, and storm and weather changes (USFWS 2019). Within the past few years, the population is thought to have stabilized but still remains at low population levels (USFWS 2019).

### **3.1.3 Wood Stork**

The wood stork is the only stork species breeding in the U.S. and was federally listed as endangered in 1984. The species was downlisted from endangered to threatened in June 2014, reflecting a successful conservation and recovery effort spanning three decades, though recent declines in nesting have been noted. Wood storks are large, long-legged wading birds, approximately about 45 inches tall, with a wingspan of 60 to 65 inches. The plumage is white except for black primaries and secondaries and a short black tail. The head and neck are largely unfeathered and dark gray in color. The bill is black, thick at the base, and slightly decurved. Immature birds have dingy gray feathers on their head and a yellowish bill. They feed primarily on small fish, capturing them when a fish touches their open bill, which they can snap shut with one of the quickest reaction times in vertebrates. Wood storks nest and breed in Collier County swamplands, with Corkscrew Swamp Sanctuary in Northern Collier County an important nesting site, along with the Everglades National Park. Wood stork nesting in this area, and in much of Florida, is in decline due to changes in precipitation and water management practices, resulting in less water in the sanctuary and drier habitat, which increases predation on nests. They typically prefer swamp, cypress and mangrove habitats, not beach or open water habitat. Shallow habitats and mangrove habitats in the Back-bay portions of the Action Area serve as potential foraging and resting habitats for the wood stork.

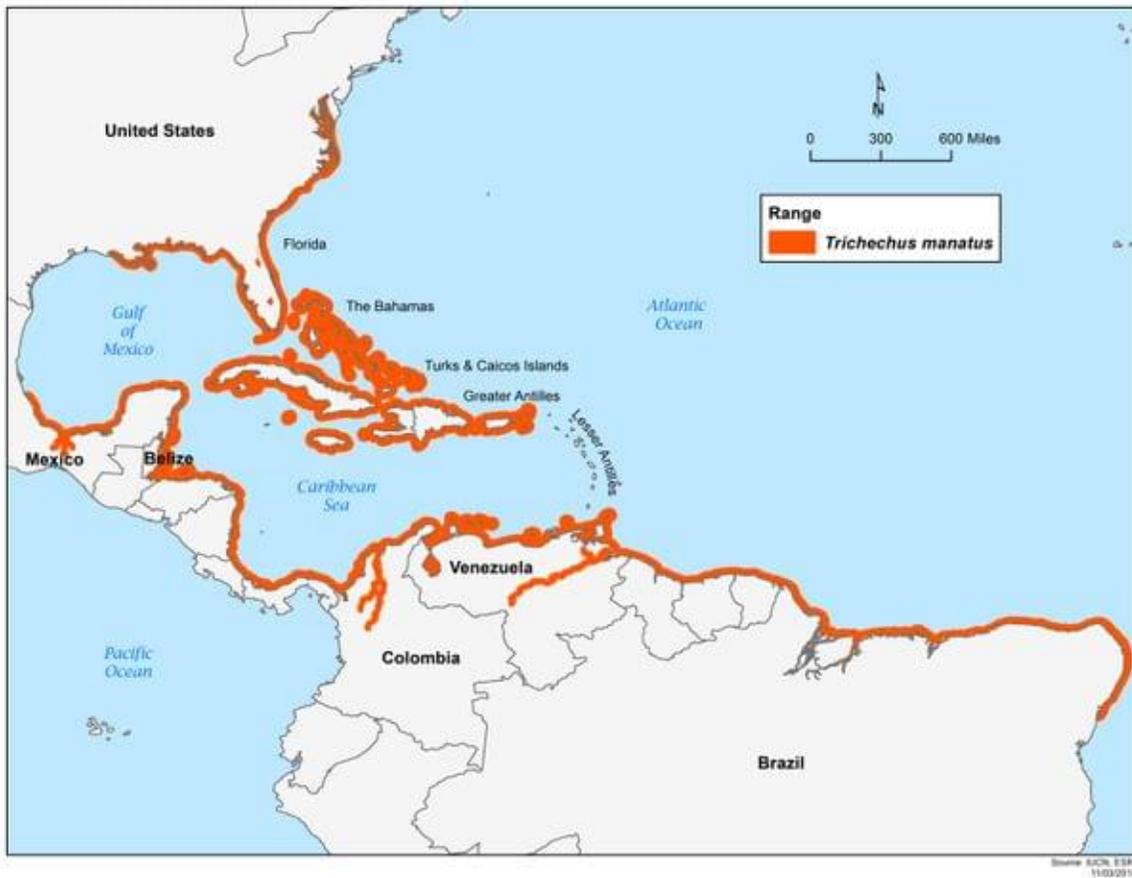
## **3.2 MAMMAL**

### **3.2.1 West Indian Manatee**

The west Indian manatee is a large, fully aquatic mammal found throughout the Caribbean Basin, being commonly found in Florida waters with a few individuals migrating seasonally (manatee cannot tolerate water colder than approximately 68°F) as far north as Chesapeake Bay. Today, the range-wide population is estimated to be at least 13,000 manatees, with more than 6,500 in the southeastern U.S. and Puerto Rico. When aerial surveys began in 1991, there were an estimated 1,267 manatees in Florida. Today there are more than 6,300 in Florida, representing a significant increase over the past 25 years. West Indian manatees are federally listed as threatened. Manatees are large, elongated marine mammals with one set of paired flippers and a large, spoon-shaped tail. They can reach lengths of over 14 feet and weights of over 3,000 pounds. Manatees are typically greyish brown in color. They have sparse hairs spread across their bodies, with bristles about the muzzle. They are herbivorous, eating a wide variety of seagrasses. Due to this, they are often found in shallow coastal and estuarine into fresh waters (they require fresh water for drinking), where they are in danger of being struck by boats, a fairly common occurrence. Manatee critical habitat is found in the Action Area in the nearshore and back-bay habitats of Collier County.

Figure 3-1 provides the estimated range of the west Indian manatee. The aquatic portions of the Action Area would contain manatee habitat and it is anticipated the back-bay habitats would provide preferential manatee habitat. These areas would be anticipated manatee

foraging grounds and potentially breeding and calving grounds as portions of these areas contain seagrass populations.



**Figure 3-1. Estimated range of the west Indian manatee (USFWS 2019a)**

Figure 3-2 provides the West Indian Manatee Critical Habitat found in Florida.



**Figure 3-2. Designated West Indian Manatee Critical Habitat (USFWS 2019a)**

### **3.3 REPTILES**

#### **3.3.1 American Alligator**

The American alligator is federally protected under the Endangered Species Act as a threatened species due to similarity in appearance to the American crocodile. Both species are native to Florida. The American alligator can be distinguished from the American crocodile by a broad snout with no lower teeth visible when their jaw is closed. Alligators prefer fresh water lakes, and slow-moving rivers and associated wetlands, but are occasionally found in brackish water habitats (USFWS 2019). The species ranges from east Texas and Oklahoma in the west through to North Carolina to Florida in the east. Alligators are opportunistic feeders. Juveniles consume small fish, amphibians, invertebrates, and insects; while adults consume fish, snakes, turtles, small mammals, and birds. Alligators mate in May and June, and nest from June through September. Since alligators are ectothermic, they hide in burrows and become dormant in temperatures below 55°degrees Fahrenheit. There is no critical habitat for this species within the Action Area.

There is the potential for this species to occur in the back-bay habitats in the Action Area. These habitats provide potential foraging grounds for the American alligator.

#### **3.3.2 American crocodile**

American crocodile inhabits coastal waters of extreme south Florida in the U.S., as well as waters further south outside the territorial bounds of the U.S. There is a large extent of critical habitat in southern Florida for the crocodile, encompassing water from Turkey Point off Homestead in eastern Florida, including all embayments and inshore waters along the Florida Keys, ending at Long Key, then extending northwestward to Cape Sable. However, in the Action Area in Collier County there is no designated American Crocodile Critical Habitat. In the local area, crocodiles primarily inhabit mangrove swamps, though can be found in other areas such as shorelines, mudflats, nearshore salt waters and other types of swamps, both estuarine and fresh. Crocodiles have a higher salinity tolerance than alligators, and tend to inhabit more estuarine waters though they can be found in fresh water. Impacts to this species that have reduced its numbers are primarily hunting, nest disturbance and loss of habitat.

There has been a gradual increase in numbers since crocodiles were listed as federally endangered in 1975, when only about 300 adults were inhabiting Florida waters, to over 2,000 adults today, allowing an upgrade to federally threatened in 2007. American crocodiles are a large crocodylian, adults reach an average length of 3.8 m, though larger adults exceeding 4.0 m are occasionally found. Compared to the American alligator, the American crocodile may be distinguished by its longer, narrower, more tapered snout and the exposed fourth tooth of the lower jaw, as alligators lack this feature. Females reach maturity in approximately 10-13 years, and typically nest only once/year, laying a clutch of on average 38 eggs (8-56). Adults, juveniles, and hatchlings are all opportunistic feeders, consuming a wide range of prey depending on size. Hatchlings require low-salinity water ( $\leq 4$  parts per thousand), juveniles and adults are much more tolerant of higher salinities due to their salt glands, which allow them to osmoregulate in higher salinity waters, similar to sea turtles, which allows them to exploit a wider range of habitat than alligators.

Within the Action Area, the American crocodile could potentially occur in aquatic habitats and could potentially use the Action Area for foraging grounds. It would not be anticipated to occur in the far offshore habitats in the Gulf of Mexico in the Action Area but rather the Back-Bay and nearshore coastal habitats.

### **3.4 SEA TURTLES**

#### **3.4.1 Green Sea Turtle**

The green sea turtle was listed as endangered in Florida, and threatened elsewhere in the U.S., in July 1978. However, on April 6, 2016, NMFS superseded this with a Federal Register announcement of 11 worldwide DPSs for this species, the North Atlantic DPS being inclusive of this region. The range of this DPS extends from the boundary of South and Central America, north along the coast to include Panama, Costa Rica, Nicaragua, Honduras, Belize, Mexico, and the United States East Coast. The range extends due east across the Atlantic Ocean to include a portion of the west coast of Africa. It was re-listed as a threatened species (Federal Register, 81 FR 20057).

Green turtles are one of the largest of the hard-shelled sea turtles, but have a comparatively small head. Its carapace is smooth with shades of black, gray, green, brown, and yellow. Adults can grow to three feet in length and weigh up to 300 pounds. Juveniles are omnivorous feeding on both benthic invertebrates as well as algae and sea grasses. Adults are generally herbivorous, feeding on algae and sea grasses. They occur seasonally in mid-Atlantic waters such as the Chesapeake Bay and the Long Island Sound, which serve as foraging and developmental habitat. The principal feeding areas for the species are the west coast of Florida, the Florida Keys, and the Yucatan Peninsula.

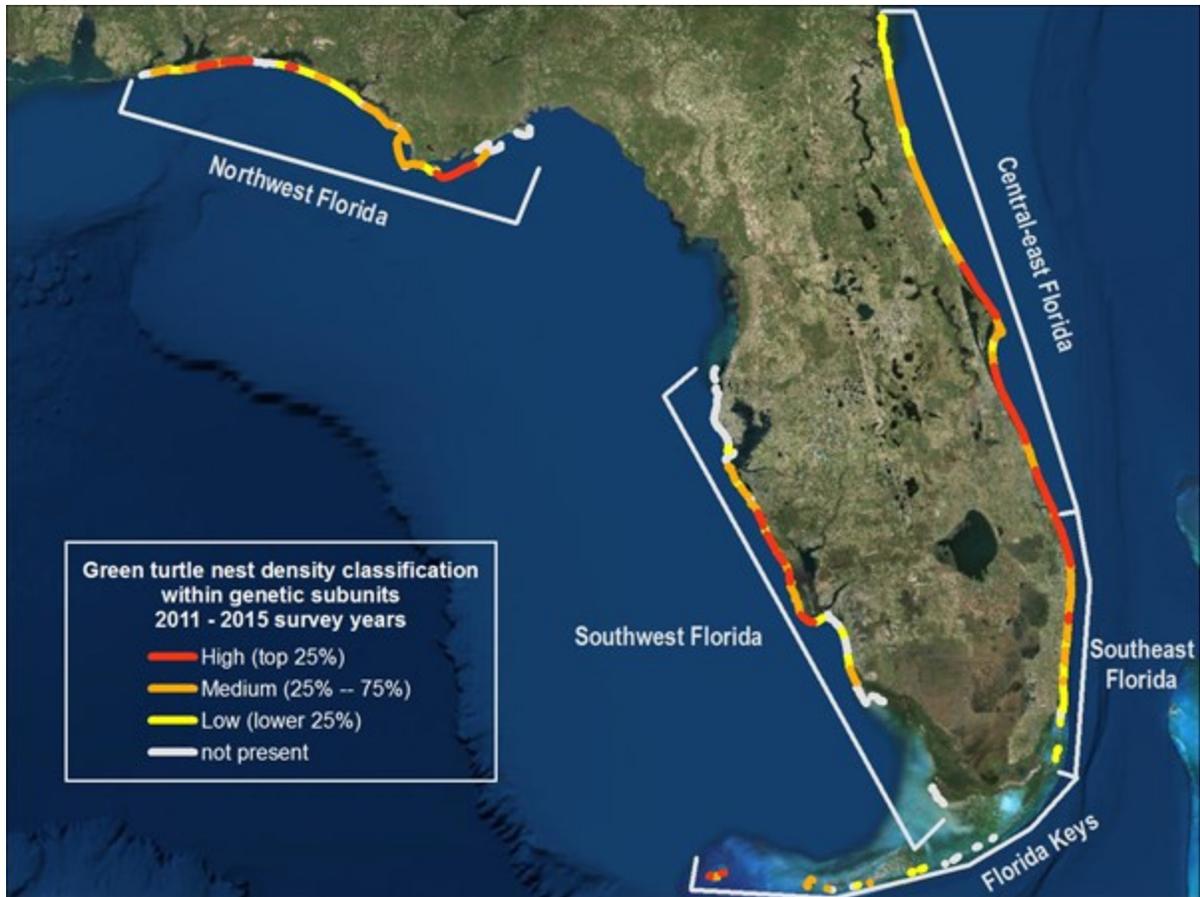
The most important nesting grounds for the Western Atlantic population remains in Costa Rica. In the U.S., nesting mostly occurs in Florida, although it has recently been recorded in North Carolina, at Bald Head Island and the Cape Hatteras National Seashore.

Adults, juveniles, and hatchlings have the potential to occur in the aquatic portions of the Action Area. As they are primarily herbivorous as adults, they prefer shallow, nearshore waters where seagrasses can grow. We would anticipate the back-bay areas of the Action Area to provide preferential foraging grounds for the green sea turtle in the Action Area.

There is no critical habitat for the green sea turtle in Collier County. Its critical habitat in the U.S. is confined to Puerto Rico. Within the Action Area, the beach habitats provide nesting grounds for the green sea turtle. Table 3-2 provides a summary compilation of sea turtle nesting data (all reported species including green sea turtles) in Collier County. From 2010-2019, a total of 47 green sea turtle nests were reported in the Collier County with most of the nesting concentrated at the Keewaydin Island (Table 3-2). While the Action Area includes beach habitats with previous reported nesting, the Collier County beaches reported fairly low numbers of green sea turtles as compared with other areas to the north of these beaches and those on the Atlantic coastal habitats in Florida (Figure 3-3).

**Table 3-2. Loggerhead, Green, Leatherback, Hawksbill, and Kemp's Ridley Sea Turtle summed nest counts from 12 Collier County beaches based from 2010-2019 survey data (FWRI 2020). Percentage of total Collier County nest counts are indicated beside Loggerhead and Green Sea Turtle Counts. Beaches are ordered from north to south.**

Beach	Loggerhead	Green	Leatherback	Hawksbill	Kemp's Ridley
Barefoot Beach Pr	1,829 13%	0 0%	0	0	0
Wiggins Pass State Park	421 3%	0 0%	0	0	0
Vanderbilt Beach	1,784 13%	0 0%	0	0	0
Clam Pass Park	427 3%	0 0%	0	0	0
Parkshore Beach	1,160 8%	1 2%	0	0	0
Naples Beach	1,578 12%	5 11%	0	0	0
Keewaydin Island (North)	1,269 9%	14 30%	1	0	0
Keewaydin Island (South)	2,070 15%	27 57%	0	0	0
Sea Oat Island	134 1%	0 0%	0	0	0
Marco Island	806 6%	0 0%	0	0	0
Ten Thousand Isls Nwr	1,088 8%	0 0%	0	0	0
Cape Romano	1,135 8%	0 0%	0	0	0
Collier County Total	13,701	47	1	0	0



*Figure 3-3. Green sea turtle nest density classification, 2011-2015 (FWRI 2015)*

### 3.4.2 Hawksbill Sea Turtle

The hawksbill sea turtle, listed as endangered on June 2, 1970, is one of the smallest sea turtles of the Gulf of Mexico weighing only 95-165 lb (43-75 kg) as an adult and ranging in size from approximately 62.5 to 94.0 cm straight carapace length. Hawksbills have a hawk-like beak (from which their name originates). Hawksbills are found worldwide in tropical and subtropical seas where they inhabit shallow coastal areas, lagoons, and coral reefs. Being omnivores, hawksbills feed primarily on invertebrates including sponges, benthic crustaceans, tunicates, bryozoans, algae, and mollusks.

We would anticipate the aquatic portions of the RO Action Area I to provide potential foraging habitats for the hawksbill sea turtle, notably the offshore hardbottom habitats. No hawksbill sea turtles have ever been documented as nesting in Collier County and there is no designated critical habitat in the Action Area.

### 3.4.3 Kemp's Ridley Sea Turtle

The Kemp's ridley sea turtle is listed as endangered throughout its range. It is a small-to-medium-sized turtle with a nearly circular shell, weighing up to 100 pounds and reaching up to 2.3 feet in length (USFWS 2019). Primarily a Gulf of Mexico species, it inhabits marine coastal waters with sand or mud bottoms. Juveniles frequent bays. Kemp's ridley sea turtles are

omnivores, but feed primarily on crabs, small animals, plants, and even discarded by catch. The biggest threat to this species is accidental capture in commercial fisheries (shrimp trawls, long lines, finfish trawls, beach seines, gill nets, etc.) (Schmid and Barichivich 2006).

Ninety-five percent of worldwide Kemp's ridley nesting occurs in Tamaulipas, Mexico (NOAA 2019). Nesting occurs on Gulf beaches in south Texas and northern Mexico between April and July, although a few nests have been confirmed in Florida, the Carolinas, and Virginia.

We would anticipate the aquatic portions of the Action Area to provide potential foraging habitats for the Kemp's ridley sea turtle, notably the offshore hardbottom habitats. No Kemp's ridley sea turtles have ever been documented as nesting in Collier County (FWRI 2020) and there is no designated critical habitat in the Action Area.

#### **3.4.4 Leatherback Sea Turtle**

Leatherback sea turtles, listed as an endangered species on June 2, 1970 (35 FR 8491), are generally distributed circumglobally. This species has been known to migrate into deep, pelagic, colder and offshore waters more than any other sea turtle species (Lazell 1980; Shoop and Kenney 1992; Bleakney 1965). They have a specialized heat retention circulation that allows them to maintain a higher core body temperature and swimming muscle temperature while inhabiting waters that would cold stun other species of sea turtles. Leatherbacks predominantly feed upon gelatinous zooplankton such as salps and jellyfish. Feeding usually takes place throughout the water column from the surface to depths as far as 1,200 m (Eisenberg and Frazier 1983; Davenport 1988).

Leatherbacks are most commonly associated with the offshore waters of the Gulf of Mexico, occurring in waters beyond the 50 meter isobath. They utilize these deep waters for feeding, resting, and as migratory corridors (Landry and Costa 1999).

Nesting occurs regularly in Puerto Rico, the U.S. Virgin Islands, and along the Atlantic coast of Florida. Leatherback nesting, with the exception of one false crawl on Sanibel Island, has been documented without any consistency in either Collier or Lee Counties (FWRI 2020).

Within the Action Area we would anticipate aquatic portions of the Action Area, namely the offshore locations to provide potential foraging, resting, and migratory habitat. The use of any of the beach habitat as nesting habitat would be very rare and not likely anticipated based on the nesting survey data collected to date.

#### **3.4.5 Loggerhead Sea Turtle**

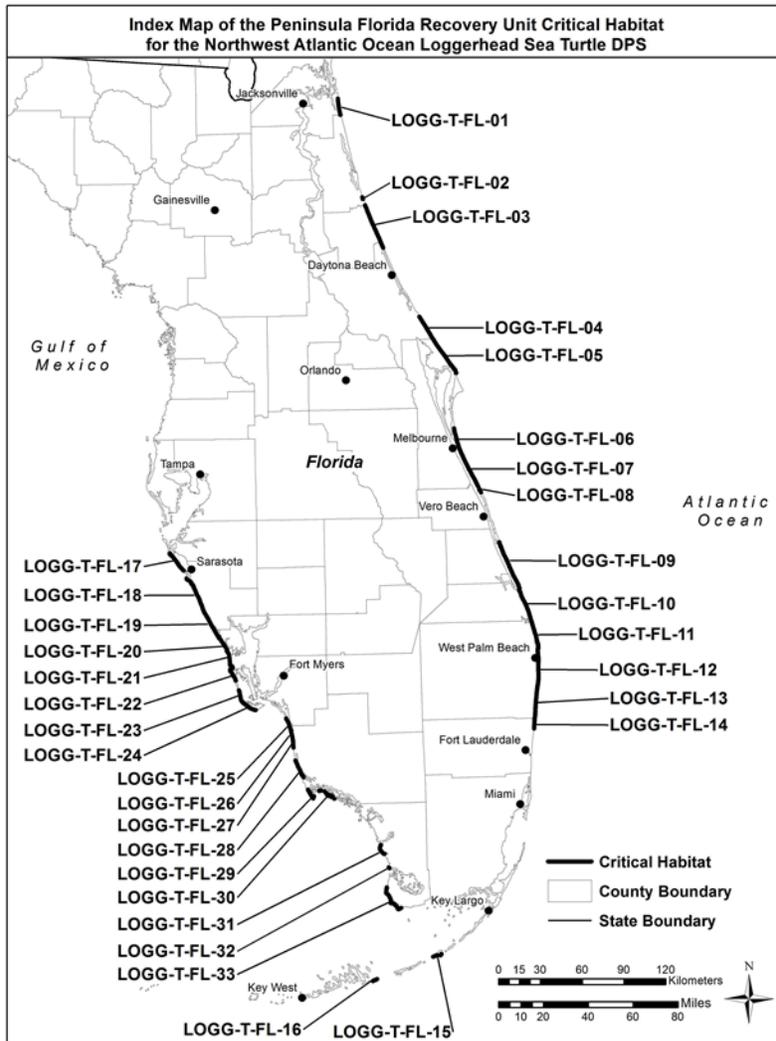
The loggerhead sea turtle was listed as threatened in July 1978. The loggerhead is the most abundant species of sea turtle in U.S. waters. The Northwest Atlantic Distinct Population of loggerhead is found in temperate and subtropical waters, from Florida to Cape Cod. Loggerheads occur in waters from beach to beyond continental shelf, in a range of habitats including offshore waters, continental shelves, bays, estuaries, and lagoons. They have been observed in waters with surface temperatures of 7°C to 30°C, but water temps of greater than 11°C are most favorable. They occur year-round in the ocean waters of North Carolina, South Carolina, Georgia, and Florida.

Loggerheads were named for their relatively large heads. They have powerful jaws that enable them to feed on hard-shelled prey, such as whelks and conch. They eat a wide variety of invertebrates, concentrating on shellfish, both molluscs and crustaceans. Their carapaces are slightly heart-shaped and reddish-brown in adults and subadults, while the undersides are generally a pale yellowish color. The neck and flippers are usually dull brown to reddish brown

on top and medium to pale yellow on the sides and bottom. Adults can reach lengths of an average of three feet and approximately 200 pounds. (USFWS 2015).

The majority of the loggerhead nesting occurs on beaches of the southeastern U.S. Within its range, nesting season occurs late April to early September and hatching season late June through early November. Locally, nesting peaks in the summer, with a mean clutch size of 100-126 eggs, with females laying on average 4.1 nests/season. Sea turtles in Collier County have previously nested both on nourished and non-nourished beaches and no documented preference of sea turtle nesting for non-nourished beaches has ever been documented in Collier County. Table 3-2 provides the documented loggerhead sea turtle nesting data from Collier County from 2010-2019. During this timeframe, a total of 13,701 loggerhead nests were documented on beaches throughout the Collier County documenting the significance of this nesting habitat for loggerhead sea turtles.

Due to the significance of the nesting habitat in the Collier County beaches, portions of the beach habitat in the Action Area have been designated as Loggerhead Sea Turtle Critical Habitat (Figure 3-4). All beach portions of the Action Area located north of the Doctor's Pass Inlet are in designated Loggerhead Sea Turtle Critical Habitat.



**Figure 3-4. Index Map of Critical Habitat Units for the Northwest Atlantic Ocean Loggerhead Sea Turtle Distinct Population Segment (USFWS 2014)**

In addition to the nesting habitat in the Action Area, the aquatic portions of the Action Area provide sea turtle foraging and migratory habitat.

Juveniles are omnivorous and forage on crabs, mollusks, jellyfish, and vegetation at or near the surface. Subadults and adults are primarily coastal dwelling and typically prey on benthic invertebrates such as mollusks and decapods crustaceans in hard bottom habitats. The loggerhead is a long-lived species with an average life span of 57 years (NMFS 2012).

Threats to species include by-catch in fisheries, interactions with vessels and dredges, oil spills, and other marine pollution in the water; and habitat loss, nesting predation or disturbance that affects eggs, hatchlings, and nesting females on land. Based on a five-year status review of the species, which discussed a variety of threats to loggerheads including climate change, NMFS and USFWS determined that they should not be delisted or reclassified. A NMFS model in 2009 had suggested that the populations are most likely declining, although overall nesting population remains widespread, and the trend for nesting population appears to be stabilizing (NMFS 2012).

## **4.0 EFFECTS ANALYSIS**

### **4.1 BIRDS**

#### **4.1.1 Piping Plover**

Piping plovers have the potential to overwinter in the Action Area; piping plovers have the potential to rest, forage and/or migrate through the Action Area but do not currently breed in the Action Area.

Construction, operations, and maintenance of features throughout the Action Area from the Outer Continental Shelf to the shoreline habitats has the potential to impact piping plover flight and foraging behaviors. Noise and visual disturbances during construction and maintenance could produce disturbance effects, flushing piping plovers from overwintering habitat. This could potentially result in temporary disturbances to feeding, resting, or migratory patterns.

The beach nourishment would result in approximately 9.5 miles of temporary impacts to the beach berm/dune habitats which would temporarily disrupt piping plover overwintering habitat including resting and foraging habitat. The localized sediment disturbances caused by beach nourishment and aquatic construction and operations have the potential to affect the foraging success of the piping plover. This could potentially impact prey species availability to piping plovers. The placement of the sand on the existing beaches would be anticipated to temporarily reduce prey invertebrate populations that are important for piping plover foraging. However we would anticipate prey populations to recover rapidly, approximately within three years following beach nourishment events.

The construction of the Wiggins Pass Surge Barrier and associated features including the concrete features in the beach berm/dune system north and south of the surge barrier, and the jetties would result in the permanent loss of piping plover overwintering habitat that consists of high quality foraging habitat for piping plovers. The jetties would permanently disrupt the natural sand transport in the barrier island system as well. The construction of the Doctors Pass Surge Barrier and associated features including potentially concrete features in the beach/dune system north and south of the surge barrier would result in the result of the permanent loss of piping plover overwintering habitat as well. The overall permanent loss of habitat would be approximately five acres for the Wiggins Pass Surge Barrier and associated features and approximately one acre for the Doctor's Pass Surge Barrier and associated

features. Closure and opening of the storm surge barriers has the potential to result in upstream and downstream shifts in salinity, temperature, dissolved oxygen, and nutrients which could also temporarily limit prey species availability. The pump station for the Wiggins Pass Surge Barrier would also temporarily disrupt the beach habitat and sand transport in the immediate vicinity of the discharge pipe that would discharge flows to the Gulf of Mexico.

Mitigation for the sand transport impacts would consist of redistributing of the sand and would provide for a more natural sand distribution in the barrier island, however, the mitigation itself would also create a temporary and recurring disturbance impact to the piping plovers, invertebrate prey populations, and piping plover overwintering habitat. The planting of the vegetated dune would also create a temporary and recurring disturbance as well to the piping plovers as well that may result in flushing of the piping plovers and disruption of foraging, resting, and/or migratory behaviors.

Overall impacts to piping plovers and piping plover overwintering habitat would be negative and range from temporary to permanent impacts that are minor to moderate.

Implementation of Alternative 4A would not include beach nourishment or any structural features in the designated Piping Plover Critical Habitat. Therefore, there would be no anticipated adverse modification of Piping Plover Critical Habitat.

### **Cumulative Impacts**

There are a multitude of past, present and reasonably foreseeable future projects within the Action Area. Previous beach nourishment, dredging and sand transport mitigation projects in the Action Area have resulted in noise and disturbance impacts to piping plovers as well as temporary loss of overwintering habitat including foraging and resting habitat. The previous construction of the jetties at the Doctor's Pass has resulted in permanent loss of piping plover overwintering habitat and negative impacts to natural sediment transport processes in the Action Area. Past and existing public usage of the beaches in the Action Area result in disturbances and noise impacts to overwintering piping plovers that are using this area as overwintering habitat.

A myriad of projects and studies with sea level rise and climate change resiliency efforts would continue to be studied and implemented. Resilience efforts that include construction and the use of mobile construction equipment would temporarily contribute to potential disturbance and noise impacts.

Collier County has many ongoing funded construction projects including various construction improvements to existing businesses and residences, and ongoing roadway improvements conducted by the Florida Department of Transportation (FDOT) which all necessitate the use of heavy construction equipment which can also temporarily impact noise and vibration levels.

Climatic changes such as sea level rise and increasing global temperatures are predicted to continue over the next 50 years. Due to the synergistic effects from a combination of factors, accelerating relative sea level rise, and an increase in the frequency and strength of storms, the risk from coastal inundation will rise in the Action Area. However, implementation of Alternative 4A would not predicted to substantially cumulatively or synergistically interact with climate change and/or effects from other actions in the Action Area, with respect to noise and vibration levels. Cumulative impacts would be negative and range from temporary to permanent impacts that are minor to moderate.

***Therefore, the implementation of Alternative 4A may affect and is likely to adversely affect the piping plover. There would be no adverse modification of Piping Plover Critical Habitat.***

#### **4.1.2 Red Knot**

Red knots have the potential to forage and migrate through the Action Area; red knots have the potential to rest, forage, and/or migrate or stopover through the Action Area but do not currently breed in the Action Area.

Construction, operations, and maintenance of features from the Outer Continental Shelf to the shoreline habitats has the potential to impact red knot flight and foraging behaviors. Noise generated during construction and maintenance could produce disturbance effects, flushing red knots from overwintering or stopover habitat. This could potentially result in temporary disturbances to feeding, resting, or migratory patterns.

The beach nourishment would result in approximately 9.5 miles of temporary impacts to the beach berm/dune habitats which would temporarily disrupt red knot overwintering and stopover habitat including resting and foraging habitat. The localized sediment disturbances caused by beach nourishment and aquatic construction and operations have the potential to affect the foraging success of the red knot. This could potentially impact prey species availability to red knots. The placement of the sand on the existing beaches would be anticipated to temporarily reduce prey invertebrate populations that are important for foraging. However we would anticipate prey populations to recover rapidly, approximately within three years following beach nourishment events.

The construction of the Wiggins Pass Surge Barrier and associated features including the concrete features in the beach berm/dune system north and south of the surge barrier, and the jetties would result in the permanent loss of red knot overwintering habitat that consists of important foraging habitat for red knots. The jetties would permanently disrupt the natural sand transport in the barrier island system as well. The construction of the Doctors Pass Surge Barrier and associated features including potentially concrete features in the beach/dune system north and south of the surge barrier would result in the result of the permanent loss of red knot habitat as well. The overall permanent loss of habitat would be approximately five acres for the Wiggins Pass Surge Barrier and associated features and approximately one acre for the Doctor's Pass Surge Barrier and associated features. Closure and opening of the storm surge barriers has the potential to result in upstream and downstream shifts in salinity, temperature, dissolved oxygen, and nutrients which could also temporarily limit prey species availability. The pump stations for the Wiggins Pass Surge Barrier would also temporarily disrupt the beach habitat and sand transport in the immediate vicinity of the discharge pipe that would discharge flows to the Gulf of Mexico.

Mitigation for the sand transport impacts would consist of redistributing of the sand would to provide for a more natural sand distribution, however, the mitigation itself would also create a temporary and recurring disturbance impact to the red knots, invertebrate prey populations, and red knot overwintering habitat. The planting of the vegetated dune would also create a temporary and recurring disturbance as well to the red knots as well that may result in flushing of the red knots and disruption of foraging, resting, and/or migratory behaviors.

Overall impacts to red knots and red knot overwintering habitat would be negative and range from temporary to permanent impacts that are minor to moderate.

#### **Cumulative Impacts**

There are a multitude of past, present and reasonably foreseeable future projects within the Action Area. Previous beach nourishment, dredging and sand transport mitigation projects in the Action Area have resulted in noise and disturbance impacts to red knots as well as temporary loss of overwintering habitat including foraging and resting habitat. The previous

construction of the jetty system at the Doctor's Pass has resulted in permanent loss of red knot overwintering habitat and negative impacts to natural sediment transport processes in the Action Area. Past and existing public usage of the beaches in the Action Area result in disturbances and noise impacts to overwintering red knots that are using this area as overwintering habitat.

A myriad of projects and studies with sea level rise and climate change resiliency efforts would continue to be studied and implemented. Resilience efforts that include construction and the use of mobile construction equipment would temporarily contribute to potential disturbance and noise impacts.

Collier County has many ongoing funded construction projects including various construction improvements to existing businesses and residences, and ongoing roadway improvements conducted by the FDOT which all necessitate the use of heavy construction equipment which can also temporarily impact noise and vibration levels.

Climatic changes such as sea level rise and increasing global temperatures are predicted to continue over the next 50 years. Due to the synergistic effects from a combination of factors, accelerating relative sea level rise, and an increase in the frequency and strength of storms, the risk from coastal inundation will rise in the Action Area. However, implementation of Alternative 4A would not be predicted to substantially cumulatively or synergistically interact with climate change and/or effects from other actions in the Action Area, with respect to noise and vibration levels. Cumulative impacts would be negative and range from temporary to permanent impacts that are minor to moderate.

***Therefore, the implementation of Alternative 4A may affect and is likely to adversely affect the red knot.***

#### **4.1.3 Wood Stork**

Wood storks have the potential to rest, forage and migrate through the Action Area but are not known to nest in the Action Area. There is no known wood stork nesting in the Action Area (USFWS 2020a).

Construction, operations, and maintenance have the potential to impact wood stork flight and foraging behaviors. Noise generated during construction and maintenance could produce disturbance effects, flushing wood storks. This could potentially result in temporary disturbances to feeding, resting, or migratory patterns.

Construction and management of the surge barriers and associated features and floodwalls would result in approximately 11.6 acres of direct and indirect permanent mangrove impacts. Mangroves provide potential resting, loafing, and roosting habitat for wood storks. In addition, shallow aquatic sites in the back-bay habitats (approximately less than 60 centimeters) such as those fringing mangrove habitats provide potential foraging habitats for wood storks as well.

The construction and operation of the surge barriers has the potential to result in upstream and downstream shifts in salinity, temperature, dissolved oxygen, and nutrients which could also negatively affect local prey species communities and temporarily limit prey species availability for wood storks.

Because of the disturbance impacts and permanent impacts to mangrove habitats we would anticipate impacts to wood storks to be negative, temporary to permanent, and range from minor to moderate.

## **Cumulative Impacts**

There are a multitude of past, present and reasonably foreseeable future projects within the Action Area. Past and existing boating in the Action Area results in disturbances and noise impacts to wood storks. Previous development and loss of mangrove habitat has resulted in the loss of foraging and resting habitats for the wood stork.

A myriad of projects and studies with sea level rise and climate change resiliency efforts would continue to be studied and implemented. Resilience efforts that include construction and the use of mobile construction equipment would temporarily contribute to potential disturbance and noise impacts.

Collier County has many ongoing funded construction projects including various construction improvements to existing businesses and residences, and ongoing roadway improvements conducted by the FDOT which all necessitate the use of heavy construction equipment which can also temporarily impact noise and vibration levels.

Climatic changes such as sea level rise and increasing global temperatures are predicted to continue over the next 50 years. Due to the synergistic effects from a combination of factors, accelerating relative sea level rise, and an increase in the frequency and strength of storms, the risk from coastal inundation will rise in the Action Area. However, implementation of Alternative 4A would not predicted to substantially cumulatively or synergistically interact with climate change and/or effects from other actions in the Action Area, with respect to noise and vibration levels. Cumulative impacts would be negative and range from temporary to permanent impacts that are minor to moderate.

***Therefore, the implementation of Alternative 4A may affect, and is likely to adversely affect the wood stork.***

## **4.2 MAMMAL**

### **4.2.1 West Indian Manatee**

Closure of the storm surge barriers and sluice gate could result in a trapping effect, by impeding passage to manatees that have the potential to be in the Action Area. This could potentially affect their daily movement patterns, migrations in and out of the Action area, and potentially could also impact their foraging in the Action Area. However, with the surge barrier and sluice gate in the open position more than 80% of the time we would not anticipate trapping to substantively impact daily movement patterns, foraging, or migrations. Any trapping impacts resulting from the structural operations would be anticipated to be insignificant. Prior to closure of the surge barriers and sluice gate, a visual inspection (or equivalent protection) would be conducted to ensure no crushing or trapping of manatees would occur. We would not expect any manatee mortality associated with the surge barrier and sluice gate operations and this would be a temporary affect as the storm surge barriers and tidal gates would not likely be closed for a period of more than a week at a time. We would not expect entrainment of manatees when the pumping stations are running for the storm surge barriers and floodwalls. This is because the pipes would be fitted with trash prevention devices that have grates that are approximately three inches in size which would prevent entrainment of any manatees due to the size of the grates. Any potential impacts to manatees anticipated with the structural features and operations would be anticipated to be insignificant.

The construction, operation, and maintenance of the structures may result in the permanent loss of SAV that would affect the foraging habitat for manatees in the back-bay habitats. We would anticipate approximately 1.1 acres of seagrass impacts, however, any potential impacts

would be fully mitigated with onsite compensatory mitigation. Any potential foraging impacts would be insignificant.

The construction, maintenance, and operation of the structures would likely result in a disturbance effect to the manatees where they will move away from the turbidity, noise, and visual disturbances. This could result in a negative, temporary effect in their daily movement patterns, migration, or foraging in the Action Area. However, any potential impacts would be anticipated to be insignificant. Most impacts would be in the back-bay and nearshore habitats in Collier County, however, manatees can occasionally occur in the more offshore habitats in the Outer Continental Shelf.

There is a slightly increased risk that a vessel interaction with a manatee could occur with operation of vessel or dredging/dredged material placement equipment in waters where manatees are known to occur. A risk of a vessel strike would be low because of the very limited amount of time barges or vessels would be in the water associated with construction and maintenance of features and likely due to the limited speed of the vessels. It is estimated that during most operating conditions the barges would travel at a speed of approximately 10 knots or less. Therefore, we would anticipate any potential vessel interactions with manatees to be highly unlikely and discountable.

Overall impacts to manatees would be negative and range from temporary to permanent impacts that are minor.

### **Cumulative Effects**

There are a multitude of past, present and reasonably foreseeable future projects within the Action Area. Past, current, and future boating in the Action Area has resulted in negative manatee interactions; vessel collisions are the leading cause of manatee mortality. Previous development and loss of SAV has resulted in temporary to permanent impacts in loss of foraging habitats. Previous beach nourishment, dredging and sand transport mitigation projects in the Action Area have resulted in potential noise and disturbance impacts. Past and existing public usage of the beaches and other areas where manatees are potentially found in the Action Area result in disturbances and noise impacts to manatees.

A myriad of projects and studies with sea level rise and climate change resiliency efforts would continue to be studied and implemented. Resilience efforts that include construction and the use of mobile construction equipment would temporarily contribute to potential disturbance and noise impacts.

Collier County has many ongoing funded construction projects including various construction improvements to existing businesses and residences, and ongoing roadway improvements conducted by the FDOT which all necessitate the use of heavy construction equipment which can also temporarily impact noise and vibration levels.

Climatic changes such as sea level rise and increasing global temperatures are predicted to continue over the next 50 years. Due to the synergistic effects from a combination of factors, accelerating relative sea level rise, and an increase in the frequency and strength of storms, the risk from coastal inundation will rise in the Action Area. However, implementation of Alternative a4 would not be predicted to substantially cumulatively or synergistically interact with climate change and/or effects from other actions in the Action Area, with respect to noise and vibration levels. Cumulative impacts would be negative and range from temporary to permanent impacts that are minor.

***Therefore, implementation of Alternative 4A may affect, but is not likely to adversely affect the West Indian Manatee. There would be no anticipated adverse modification of critical habitat.***

#### **4.2.2 American Alligator and American Crocodile**

Closure of the storm surge barriers and the sluice gate could potentially result in a trapping effect, by impeding passage to alligator and crocodiles that have the potential to be in the Action Area. This could potentially affect their daily movement patterns, migrations in and out of the Action area, and potentially could also impact their foraging in the Action Area.

Because of the potential negative water quality effects, the prey base for alligators and crocodiles may be negatively affected which could potentially limit foraging opportunities in the Action Area and potentially while crocodiles are trapped behind the storm surge barriers. The construction, operation, and maintenance of the structures may result in the loss of foraging habitat for alligators and crocodiles.

However, with the surge barrier and sluice gate in the open position more than 80% of the time we would not anticipate trapping to substantively impact daily movement patterns, foraging, or migrations of crocodiles. Any trapping impacts resulting from the structural operations would be anticipated to be insignificant. Prior to closure of the surge barriers and sluice gate, a visual inspection (or equivalent protection) would be conducted to ensure no crushing or trapping of alligators or crocodiles. We would not expect any alligator or crocodile mortality associated with the surge barrier and sluice gate operations and this would be a temporary affect as the storm surge barriers and tidal gates would not likely be closed for a period of more than a week at a time. We would not expect entrainment of manatees when the pumping stations are running for the storm surge barriers and floodwalls. This is because the pipes would be fitted with trash prevention devices that have grates that are approximately three inches in size which would prevent entrainment of any manatees due to the size of the grates. Any potential impacts to alligators or crocodiles anticipated with the structural features and operations would be anticipated to be insignificant.

The construction, maintenance, and operation of the structures will likely result in a disturbance effect to alligators and crocodiles where they will move away from the turbidity, noise, and visual disturbances. However, any anticipated impacts would be insignificant.

With implementation of the Preferred Alternative, there is a slightly increased risk that a vessel interaction with an alligator or crocodile could occur as we would have barges used to construct the features in waters where crocodiles are known to occur. A risk of a vessel strike would be low because of the very limited amount of time barges or vessels would be in the water associated with construction and maintenance of features and likely due to the limited speed of the vessels. It is estimated that during most operating conditions the barges would travel at a speed of approximately 10 knots or less. Therefore, we would anticipate any potential vessel interactions with crocodiles to be highly unlikely and discountable.

We would not expect entrainment of alligators or crocodiles when the pumping stations are running for the storm surge barriers and floodwalls. This is because the pipes would be fitted with trash prevention devices that have grates that are approximately three inches in size which would prevent entrainment of any due to the size of the grates.

Overall impacts to alligators and crocodiles would be negative and range from temporary to permanent impacts that are minor.

## Cumulative Impacts

There are a multitude of past, present and reasonably foreseeable future projects within the Action Area. Past, current, and future boating in the Action Area has the potential to result in alligator and/or crocodile interactions. Previous beach nourishment, dredging and sand transport mitigation projects in the Action Area have resulted in potential noise and disturbance impacts. Past and existing public usage of potential habitats result in disturbances and noise impacts.

A myriad of projects and studies with sea level rise and climate change resiliency efforts would continue to be implemented. Resilience efforts that include construction and the use of mobile construction equipment would temporarily contribute to potential disturbance and noise impacts.

Collier County has many ongoing funded construction projects including various construction improvements to existing businesses and residences, and ongoing roadway improvements conducted by the FDOT which all necessitate the use of heavy construction equipment which can also temporarily impact noise and vibration levels.

Climatic changes such as sea level rise and increasing global temperatures are predicted to continue over the next 50 years. Due to the synergistic effects from a combination of factors, accelerating relative sea level rise, and an increase in the frequency and strength of storms, the risk from coastal inundation will rise in the Action Area. However, implementation of Alternative 4A would not be predicted to substantially cumulatively or synergistically interact with climate change and/or effects from other actions in the Action Area, with respect to noise and vibration levels. Cumulative impacts would be negative and range from temporary to permanent impacts that are minor.

***Therefore, implementation of the Alternative 4A may affect but is not likely adversely affect the American alligator or American crocodile.***

## 4.3 SEA TURTLES

The recurring beach nourishment would result in temporary but recurring impacts to nesting loggerheads and green sea turtles and their associated habitat including designated Loggerhead Sea Turtle Critical Habitat. The beach nourishment would result in approximately 9.5 miles of temporary impacts to sea turtle habitat with approximately 7.6 miles being located in designated Loggerhead Sea Turtle Critical Habitat. Both loggerhead and green sea turtles are known to repeatedly nest in relatively high frequencies in the Action Area (Table 3-2) and therefore, would be most likely affected from the beach nourishment and dune plantings. While nesting of the Kemp's ridley, leatherback, and hawksbill sea turtles would not be likely based on the historic nesting record (Table 3-2) in the Action Area, we have included potential nesting impacts for these species as well as sea turtles are known to occasionally nest in atypical locations and because of the potential extensive nesting habitat found in the Action Area. Also, this action is anticipated to occur intermittently for a period of 50 years so during that timeframe, sea turtle nesting preferences and densities are subject to shift over time. Potential impacts to nesting sea turtles and sea turtle habitat from beach nourishment and dune vegetation plantings would be minimized by following the Reasonable and Prudent Measures and Terms and Conditions as described in the Shore Protection Activities along the Coast of Florida Statewide Programmatic Biological Opinion shall be followed (USFWS 2015). However, even with implementation of these mitigation/best management practices some limited sea turtle take would be potentially anticipated as described in USFWS (2015). Even with following the extensive mitigation measures/best management practices including

extensive monitoring, optimized sand pumping operations (to minimize impacts to nesting turtles), nest relocation, minimized lighting, and use of adequate quality sand for beach nourishment, impacts would still be anticipated to be negative resulting from the beach nourishment activities for listed sea turtles.

The construction of the Wiggins Pass Surge Barrier and associated features including the concrete features in the beach berm/dune system north and south of the surge barrier, and the jetties would result in the permanent loss of sea turtle nesting habitat including designated Loggerhead Sea Turtle Critical Habitat. The pump stations for the Wiggins Pass Surge Barrier would also temporarily disrupt the beach habitat and sand transport in the immediate vicinity of the discharge pipe that would discharge flows to the Gulf of Mexico. The jetties and operation of the pump station would permanently disrupt the natural sand transport in the barrier island system as well potentially affecting the beach berm contours north and south of the jetty system. The construction of the Doctors Pass Surge Barrier and associated features including potentially concrete features in the beach/dune system north and south of the surge barrier would result in the result of the permanent loss of sea turtle nesting habitat. The overall permanent loss of sea turtle nesting habitat would be approximately five acres for the Wiggins Pass Surge Barrier and associated features and approximately one acre for the Doctor's Pass Surge Barrier and associated features. The five acres of impacts resulting from the Wiggins Pass Surge Barrier and associated features is located in designated Loggerhead Sea Turtle Critical Habitat.

Mitigation for the sand transport impacts would consist of redistributing of the sand would to provide for a more natural sand distribution, however, the mitigation itself would also create a temporary and recurring disturbance impact to nesting sea turtles and their associated habitat including designated Loggerhead Sea Turtle Critical Habitat.

Overall impacts to listed sea turtles would be negative and range from temporary to permanent impacts that are minor to moderate.

### **Cumulative Impacts**

There are a multitude of past, present and reasonably foreseeable future projects within the Action Area. Previous development has resulted in temporary to permanent impacts in loss of nesting habitats. Previous development, beach nourishment, dredging and sand transport mitigation projects in the Action Area have resulted in potential noise, disturbance, and lighting impacts. All of these past and existing public usage of the beaches and other areas where sea turtles are potentially found in the Action Area result in disturbances and noise impacts to manatees.

A myriad of projects and studies with sea level rise and climate change resiliency efforts would continue to be studied and implemented. Resilience efforts that include construction and the use of mobile construction equipment would temporarily contribute to potential disturbance and noise impacts.

Climatic changes such as sea level rise and increasing global temperatures are predicted to continue over the next 50 years. Due to the synergistic effects from a combination of factors, accelerating relative sea level rise, and an increase in the frequency and strength of storms, the risk from coastal inundation will rise in the Action Area. However, implementation of Alternative 4A would not predicted to substantially cumulatively or synergistically interact with climate change and/or effects from other actions in the Action Area, with respect to noise and vibration levels. Cumulative impacts would be negative and range from temporary to permanent impacts that are minor to moderate.

***Therefore, implementation of Alternative 4A may affect and is likely to adversely affect the green sea turtle, Kemp's ridley sea turtle, hawksbill sea turtle, leatherback sea turtle, and loggerhead sea turtle. There would be adverse modification of Loggerhead Sea Turtle Critical Habitat.***

## **5.0 PLANNED MITIGATION MEASURES/BEST MANAGEMENT PRACTICES**

For any potential final alignments, avoidance and minimization practices will be employed to the maximum extent practicable for all potential impacts. Specific examples of best management practices to avoid and minimize impacts to air quality during temporary construction conditions:

1. All Reasonable and Prudent Measures and Terms and Conditions as described in the Shore Protection Activities along the Coast of Florida Statewide Programmatic Biological Opinion shall be followed (2015).
2. Barges will be operated at approximately 10 knots or less to reduce any potential interactions with marine mammals and sea turtles.
3. Surge barriers would be designed to prevent entrainment of alligators/crocodiles, marine mammals and sea turtles when in the open position.
4. A visual inspection of the surge barriers will be done prior to closure to ensure no crocodiles, marine mammals, or sea turtles are crushed/injured during closure operations.
5. Storm surge barrier pumping station discharge pipes would be fitted with trash prevention devices that have grates that are approximately three inches in size which would prevent entrainment of any sea turtles or marine mammals due to the size of the grates.
6. The Standard Manatee Conditions for In-Water Work would be followed (USFWS 2011).
7. Siltation barriers shall be made of material in which a crocodile or smalltooth sawfish cannot become entangled, be properly secured, and be regularly monitored to avoid protected species entrapment. Barriers may not block crocodile or smalltooth sawfish entry to or exit from designated critical habitat without prior agreement from the National Marine Fisheries Service's Protected Resources Division.
8. All vessels associated with the construction project shall operate at "no wake/idle" speeds at all times while in the construction area and while in water depths where the draft of the vessel provides less than a four foot clearance above the bottom. All vessels will preferentially follow deep-water routes (e.g. marked channels) whenever possible.
9. If a crocodile or smalltooth sawfish is seen within 100 yards of the active daily construction operation or vessel movement, all appropriate precautions shall be implemented to ensure its protection. These precautions shall include cessation of operation of any moving equipment closer than 50 feet of a crocodile or smalltooth sawfish. Operation of any mechanical construction equipment shall cease immediately if a crocodile or smalltooth sawfish is seen within a 50-ft radius of the equipment. Activities may not resume until the protected species has departed the project area of its own volition.

## 6.0 SUMMARY OF FINDINGS

Table 5-1 summarizes the findings for each species and critical habitat occurring or with the potential to occur in the action area.

*Table 5-1. Endangered Species Act, Section 7 Findings: Species and Critical Habitats under the Jurisdiction of the U.S. Fish and Wildlife Service*

Taxonomic Category/Common Name	Status	Endangered Species Act, Section 7 Finding
<b>BIRDS</b>		
Piping plover	T	May affect, likely to adversely affect
Red knot	T	May affect, likely to adversely affect
Wood Stork	T	May affect, likely to adversely affect
<b>MAMMALS</b>		
West Indian manatee	T	May affect, not likely to adversely affect
<b>REPTILES</b>		
American alligator	T	May affect, not likely to adversely affect
American crocodile	E	May affect, not likely to adversely affect
Green sea turtle (North and South Atlantic DPS)	T	May affect, likely to adversely affect
Hawksbill sea turtle	E	May affect, likely to adversely affect
Kemp's ridley sea turtle	E	May affect, likely to adversely affect
Leatherback sea turtle	E	May affect, likely to adversely affect
Loggerhead sea turtle (Northwest Atlantic Ocean DPS)	T	May affect, likely to adversely affect
Loggerhead Sea Turtle Critical Habitat		Likely to Adversely Modify Critical Habitat
Piping Plover Critical Habitat		Not Likely to Adversely Modify Critical Habitat
Manatee Critical Habitat		Not Likely to Adversely Modify Critical Habitat

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**COLLIER COUNTY COASTAL STORM RISK  
MANAGEMENT PROJECT**

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**Section 404(b)(1) Evaluation**

**Norfolk District  
803 Front Street  
Norfolk, Virginia 23510**

**July 31, 2020**



**U.S. Army Corps  
of Engineers  
Norfolk District**

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**Draft Evaluation of 404(b)(1) Guidelines**

**Collier County Coastal Storm Risk Management Draft Integrated Feasibility Study  
and Environmental Impact Statement**

**Collier County, Florida**

**July, 2020**

1. Technical Evaluation Factors

a. Physical and Chemical Characteristics of the Aquatic Ecosystem (40 CFR §§ 230.20-230.25)(Subpart C)

	N/A	Not Significant*	Significant**
(1) Substrate impacts	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(2) Suspended particulates/turbidity impacts	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(3) Water Quality Control	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(4) Alteration of current patterns and water circulation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(5) Alteration of normal water fluctuations/hydro-period	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(6) Alteration of salinity gradients	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

The Tentatively Selected Plan (TSP), Alternative 4A, combines borrow dredging and beach nourishment for four beach reaches totaling approximately 9.5 miles, nonstructural and structural measures, and nonstructural features measures including floodproofing of critical infrastructure. Structural measures would include enhanced berm and dune geometries, surge gates, a sluice gate, floodwalls, two jetties, concrete structures in the berm/dune, and surge barriers and associated pump stations. Final designs of the structural features would be conducted in the Preconstruction, Engineering, and Design (PED) Phase of the project. Additional topographic and geotechnical surveys would be conducted during the PED Phase to inform the final design of the proposed in-water structures.

The project description is covered in greater detail in Chapter 7 of the Collier County Coastal Storm Risk Management Draft Integrated Feasibility Report and EIS (IFR/EIS).

Sand used in berm and dune construction would be dredged via hopper dredge from the two proposed sand shoal borrow areas located approximately 33 nautical miles offshore of Naples, Florida: the Shoal Area T1 and the Shoal Area T2. The northern portion of the Shoal Area T1 (Borrow Area T1) has been previously used

as a sand source for past beach nourishment projects in Collier County. The shoals would be dredged via hopper dredge. After dredging, sand would be transported to beach sites with the hopper dredge and sand would be placed via pipeline from the hopper dredge. Sand placement pipelines would be positioned at sites previously established and permitted in the 2016 Collier County beach re-nourishment projects; additional pipeline sites would be established as needed.

The primary sand sources would be expected to be similar to the following specifications, which would be verified via a sediment testing quality assurance/quality control program during the PED Phase of the project:

- Maximum Shell Content: 1% retained on the No. 4 sieve
- Munsell Color Value: Moist Value (Chroma = 1) of 7 or lighter
- Median grain size: 0.33 millimeters

The proposed, estimated maximum berm would extend approximately 75 feet from the toe of the constructed dune, and the estimated maximum dune height would be 14 feet high. Berm extensions from the toe of the dunes seaward would extend into existing nearshore aquatic habitats in the Gulf of Mexico. Existing dunes and dune vegetation would be reconstructed following construction and maintenance of the berms and dunes.

Nonstructural measures include dry/wet floodproofing of commercial buildings and critical infrastructure, elevation of residential structures, and acquisition and demolition of residential structures. The Natural and Nature-Based Features (NNBFs) would consist of the installation of reef habitat for the purpose of coastal storm risk reduction and resilience.

It is anticipated that sand transport (via hydraulic cutterhead and pipeline), hardbottom, mangrove, submerged aquatic vegetation (SAV), and dune vegetation onsite compensatory mitigation would be required to be conducted to offset functional impacts caused by the beach nourishment and construction and operation of the project structural features.

Beach nourishment actions would require both hopper dredge offshore and the sand transport mitigation would require hydraulic cutterhead dredges. Placement activities would be accomplished by pumping sand from the dredges onto the shore and spreading it out via pipeline to the appropriate dune and berm dimensions. This may result in increases in Total Suspended Solids, turbidity/sedimentation, and the alteration of hydrodynamic regimes and habitat. Sedimentation may increase in the ROI during construction, though best management practices would be used to minimize these impacts. Construction of the in-water structural measures would increase flow velocities by limiting the area where tidal ebb and flow could occur.

Potential permanent and temporary impacts could occur to the physical substrate, turbidity, water quality, water velocity, current patterns and water circulation, normal water fluctuations, and salinity gradients from the use of construction equipment for the installation and construction, operation and maintenance of the surge barriers, tide gates, floodwalls, riprap and associated features.

Once constructed, the surge barriers and sluice gate would be closed during substantive storm events, no more than approximately ten times a year. Gates would be closed for an estimated average of five days at a time (but up to a maximum of approximately 10 days). During this time, no tidal exchange between the embayments and nearshore coastal waters will occur. This will likely result in declines in water quality in the embayments, as salinity is expected to decrease and nutrients are expected to increase. The impacts to embayment waters could be adverse and moderate. This is due to the containment of very fresh, poor quality (high in Nitrogen (N), Phosphorus (P), and Total Suspended Solids (TSS)) behind the tide gates, where it will impact any natural resources inhabiting these waters. The subsequent openings post-storm will result in a large pulse of fresh water to enter nearshore waters of Collier County at discharge points.

As the impacts of the surge barriers and sluice gate to water quality are relatively uncertain, water quality modeling is being conducted to better assess the magnitude and extent of sediment transport and water quality impacts.

Construction of the reef structure Natural and Nature-Based Feature sites would result in an adverse, temporary negligible to minor increased level of TSS and turbidity but would result in a beneficial, permanent minor impact to water quality resulting from the reef's sediment trapping and filtration benefits.

Overall, impacts to water quality would be adverse to beneficial, temporary to permanent and range from negligible to moderate impacts.

b. Biological Characteristics of the Aquatic Ecosystem (40 CFR §§ 230.30-230.32) (Subpart D)

	N/A	Not Significant	Significant
(1) Effect on threatened/endangered species and their habitat	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(2) Effect on the aquatic food web	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(3) Effect on other wildlife (mammals, birds, reptiles, and amphibians)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Pursuant to Section 7 of the Endangered Species Act (ESA), Magnuson-Stevens Fishery Conservation and Management Act (MSA), and the Marine Mammal Protection Act (MMPA), coordination is underway with the National Marine Fisheries Service (NMFS) and U.S. Fish and Wildlife Service (USFWS). Biological

Assessments (BAs) have been prepared for each agency, and formal Section 7 consultation will be initiated with both agencies, for the potential impacts that could occur directly and/or indirectly from the implementation of the Collier County Coastal Storm Risk Management Project

The project is also undergoing coordination with the USFWS and the State of Florida in accordance with the Fish and Wildlife Coordination Act. A Memorandum of Agreement has been signed by the USACE and the USFWS stating that Fish and Wildlife Coordination Act review will be integrated with the National Environmental Policy Act (NEPA) review process.

Table 1 summarizes our preliminary potential impacts findings of the Alternative 4A for species under the jurisdiction of the USFWS.

**Table 1. Threatened/Endangered Species, USFWS Jurisdiction.**

Taxonomic Category/Common Name	Status	Endangered Species Act, Section 7 Finding
<b>BIRDS</b>		
Piping plover	T	May affect, likely to adversely affect
Red knot	T	May affect, likely to adversely affect
Wood Stork	T	May affect, likely to adversely affect
<b>MAMMALS</b>		
West Indian manatee	T	May affect, not likely to adversely affect
<b>REPTILES</b>		
American alligator	T	May affect, not likely to adversely affect
American crocodile	E	May affect, not likely to adversely affect
Green sea turtle (North and South Atlantic DPS)	T	May affect, likely to adversely affect
Hawksbill sea turtle	E	May affect, likely to adversely affect
Kemp's ridley sea turtle	E	May affect, likely to adversely affect
Leatherback sea turtle	E	May affect, likely to adversely affect
Loggerhead sea turtle (Northwest Atlantic Ocean DPS)	T	May affect, likely to adversely affect

Taxonomic Category/Common Name	Status	Endangered Species Act, Section 7 Finding
Loggerhead Sea Turtle Critical Habitat		Likely to Adversely Modify Critical Habitat
Piping Plover Critical Habitat		Not Likely to Adversely Modify Critical Habitat
Manatee Critical Habitat		Not Likely to Adversely Modify Critical Habitat

Table 2 summarizes our preliminary potential impacts findings of the Alternative 4a for species under the jurisdiction of the NMFS.

**Table 2. Threatened/Endangered Species, NMFS Jurisdiction.**

Taxonomic Category/Common Name	Scientific Name	Status	Endangered Species Act, Section 7 Finding
<b>FISH</b>			
Giant manta ray	<i>Manta birostris</i>	T	May Affect, Likely to Adversely Affect
Gulf sturgeon	<i>Acipenser oxyrinchus desotoi</i>	T	May Affect, Likely to Adversely Affect
Oceanic whitetip shark	<i>Carcharhinus longimanus</i>	T	May Affect, Not Likely to Adversely Affect
Shortnose sturgeon	<i>Acipenser brevirostrum</i>	E	No Effect
Smalltooth sawfish	<i>Pristis pectinata</i>	E	May Affect, Likely to Adversely Affect
<b>WHALES</b>			
Bryde's whale	<i>Balaenoptera edeni</i>	E	May Affect, Not Likely to Adversely Affect
North Atlantic right whale	<i>Eubalaena glacialis</i>	E	May Affect, Not Likely to Adversely Affect

Taxonomic Category/Common Name	Scientific Name	Status	Endangered Species Act, Section 7 Finding
Sperm Whale	<i>Physeter macrocephalus</i>	E	May Affect, Not Likely to Adversely Affect
<b>SEA TURTLES</b>			
Green sea turtle (North and South Atlantic DPS)	<i>Chelonia mydas</i>	T	May Affect, Likely to Adversely Affect
Hawksbill sea turtle	<i>Eretmochelys imbricata</i>	E	May Affect, Likely to Adversely Affect
Kemp's ridley sea turtle	<i>Lepidochelys kempii</i>	E	May Affect, Likely to Adversely Affect
Leatherback sea turtle	<i>Dermochelys coriacea</i>	E	May Affect, Likely to Adversely Affect
Loggerhead sea turtle (Northwest Atlantic Ocean DPS)	<i>Caretta caretta</i>	T	May Affect, Likely to Adversely Affect
Smalltooth Sawfish Critical Habitat			No adverse modification

Negative effects on marine mammals are expected to be temporary and minor, and are also being addressed through coordination with the NMFS, pursuant to the Marine Mammal Protection Act (MMPA). Negative impacts would be anticipated to bottlenose dolphins under the protection of the MMPA. Depending on construction methodology, an incidental take authorization for marine mammal (for potential impacts to the bottlenose dolphin) permit may be required but is not anticipated.

Pursuant to the Magnuson-Stevens Act, the USACE has determined that Alternative 4A would adversely affect Essential Fish Habitat (EFH). Moderate to potentially significant adverse impacts are anticipated to the following EFH, managed species, and their prey: corals, red drum, shrimp, reef fish, coastal migratory pelagic fish, and spiny lobster. In addition, impacts to 31 reef fish, commercial fisheries, and two corals (Black and Stony) were evaluated as part of the EFH chapter in the Draft IFR/EIS. This impact is discussed in Section 1.d. of this document.

Construction activities could also increase ambient noise to levels greater than baseline, which could result in a temporary disturbance effect to managed and unmanaged species in the ROI; noise levels would reduce to normal levels at night and after construction activities are completed. Increased flow velocities may

impede aquatic species passage into or out of upstream waters, however, the extent of this effect is uncertain at this time.

c. Special Aquatic Site (40 CFR §§ 230.40-230.45) (Subpart E)

	N/A	Not Significant	Significant
(1) Sanctuaries and refuges	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(2) Wetlands	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(3) Mud flats	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(4) Vegetated shallows	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(5) Coral reefs	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(6) Riffle and pool complexes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

At this time, wetland, SAV, and hardbottom impacts have been estimated, based on National Wetland Inventory (NWI) mapping, and Florida Fish and Wildlife Commission (FFWC) mapping layers, and the Collier County hardbottom survey data (Collier County 2020). Table 3 provides a summary of estimated impacts. For purposes of this preliminary impact assessment, direct permanent adverse impacts includes construction access for mangrove impacts, because it is assumed that such areas might be permanently adversely affected. Indirect effects were assumed for areas not within the project footprint, but in close enough proximity to be altered by the effects of the structure.

**Table 3. Estimated Impacts on Special Aquatic Sites.**

Location	Direct Permanent Impact (Includes Construction Access Impacts)	Indirect Permanent Impact
Mangrove Wetland, Impact	6.4 acres	5.2 acres
Submerged Aquatic Vegetation, Impact	0	1.1 acres
Hardbottom Direct Impact	0	11.6 acres

Additional analysis for the existing conditions and the potential impacts to Special Aquatic Sites can be found in the Draft IFS/EIS.

Detailed environmental surveys for coral/hardbottom habit and SAV, and a jurisdictional determination to identify all waters of the U.S., including wetlands, will be conducted in the PED Phase.

The Uniform Mitigation Assessment Method (UMAM) will be utilized as a functional assessment to determine appropriate mitigation for wetlands, SAVs, and hardbottom. The Environmental Mitigation Plan is found in the Environmental Appendix of this Integrated Feasibility Report and EIS.

d. Human Use Characteristics (40 CFR §§ 230.50-230.54) (Subpart F)

	N/A	Not Significant	Significant
(1) Effects on municipal and private water supplies	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(2) Recreational and Commercial fisheries impacts	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(3) Effects on water-related recreation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(4) Aesthetic impacts	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(5) Effects on parks, national and historical monuments, national seashores, wilderness areas, research sites, and similar preserves	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Fisheries.** As discussed earlier in 1.b. Biological Characteristics of the Ecosystem, pursuant to the Magnuson-Stevens Act, the USACE has determined that Alternative 4A would adversely affect Essential Fish Habitat (EFH), and coordination with NMFS is ongoing, and will be completed during the Feasibility Phase, prior to the signing of the Chief's Report.

Direct and indirect impacts to EFH, including seagrass, mangroves, and coral reef/life/hardbottom habitats, as well as managed species and fish resources, would be adverse and both temporary and permanent, ranging from moderate to potentially significant for the following EFH, managed species, and their prey: corals, red drum, shrimp, reef fish, coastal migratory pelagic fish, and spiny lobster. In addition, impacts to 31 reef fish, commercial fisheries, and two corals (Black and Stony) were evaluated as part of the EFH chapter in the Draft IFR/EIS.

Project construction would not be predicted to produce direct impacts that are substantively negative to EFH, managed species or their prey. Turbidity plumes generated at aquatic construction sites (i.e. construction of surge barriers/tide gates) are not expected to be significant due to the limited area and time in which construction will occur and the sandy nature of the dredged material. Additionally, turbidity plumes are expected to settle and/or dissipate within hours of sediment disruption, as the majority of the areas with significant amounts of construction have sediments consisting largely of sand and/or sandy mud/muddy sand. Additionally, in areas where benthic sediment is relatively undisturbed and where dredging does not regularly occur, underwater construction could result in direct loss of some permanent habitat for fish and benthic invertebrate species.

Habitat loss would be limited to the build location of project measures. Construction activities could also increase ambient noise to levels greater than baseline, which could result in a temporary disturbance effect to managed and unmanaged species in the ROI; noise levels would reduce to normal levels at night and after construction activities are completed.

However, construction and operation of the Alternative 4A is predicted to produce a number of indirect impacts that may significantly adversely affect EFH, managed species, and associated prey species. These impacts include changes in water quality (i.e. DO, salinity, and flow regimes), benthic prey species and habitat availability. Indirect impacts to EFH and managed species are predicted to be greatest during the operation and maintenance of the built structures proposed in the Alternative 4A.

Extreme storm and high tide events would trigger the closure of surge barriers and sluice gate, causing shifts in water quality and flow rates (Refer to Water Quality Chapters in the Draft IFR/EIS). Increased flow velocities may impede aquatic species passage into or out of upstream waters, however, the extent of this effect is uncertain at this time. Additionally, activation of pump stations could increase risk of entrainment to fishes upstream of the surge barriers, though this is dependent on the rate at which water is being pumped out of the upstream areas. During tide gate and surge barrier closures, tidal fluxes in water would cease for a period of time, potentially reducing water quality, salinity, and dissolved oxygen (DO), while increasing the number of harmful nutrients in the water caused by run-off. The changes in water quality, salinity, DO, and nutrients could have compound and/or cumulative interactions, causing increased stress levels to fish populations, which may lead to increased susceptibility to disease or even a mortality event, though this is relatively uncertain at this time (Tietze 2016; Bachman and Rand 2008). Additionally, closure of the storm surge barriers and tide gates could result in a trapping effect, by impeding passage to fish populations that frequently move in and out of upstream estuarine areas to feed and/or reproduce. Activation of pump stations would increase risk of entrainment to fishes trapped upstream of the surge barriers, though this is dependent on the rate at which water is being pumped out of the upstream areas. Indirect impacts from tide gate and storm surge barrier closures are potentially significant to EFH and fish populations in the ROI, but these effects would be temporary.

Any direct or indirect adverse effects to mangrove, hardbottom and SAV habitats will be mitigated. The Environmental Mitigation Plan for the Collier County CSRM project can be found in the Environmental Appendix, Appendix D of the Draft IFR/EIS. Water quality effects can be better determined following completion of modeling.

**Parkland.** Public property alongside the Wiggins Pass surge barrier would need to be acquired from the Delnor-Wiggins State Park for the construction of a pump station. Land would also be acquired from the State Park and the Barefoot

Beach County Preserve for construction of tie-ins to the surge barrier. Permanent easements for maintenance access would also be needed at the two surge barriers. The land acquisitions would result in a permanent loss of area for recreation at the impacted sites. A beach access path from the Admiralty Point Condominium Complex would also need to be reconfigured to bypass the surge barrier tie-in.

The floodwalls and surge barriers, and sluice gate are anticipated to cause only temporary impacts to recreation although the surge barge barriers and sluice gate may reduce channel widths through these access points. The design of these structural features would account for vessel passage, but some permanent loss of channel width may occur. The surge barrier would be open except for operation and maintenance and during substantive storm conditions.

The floodwalls would have openings with deployable sections for each roadway or driveway crossing. The deployable sections would also only be closed during operation and maintenance. The floodwalls would run alongside existing roadways and sidewalks and access for walkers, bikers, and drivers should not be permanently affected.

## 2. Evaluation of Dredged or Fill Material (40 CFR § 230.60) (Subpart G)

- a. The following information has been considered in evaluating the biological availability of possible contaminants in dredged or fill material. **(Check only those appropriate)**
- (1) Physical characteristics
  - (2) Hydrography in relation to known or anticipated sources of contaminants
  - (3) Results from previous testing of the material in the vicinity of the project
  - (4) Known, significant, sources of persistent pesticides from land runoff or percolation
  - (5) Spill records for petroleum products or designated (Section 311 of CWA) hazardous substances
  - (6) Other public records of significant introduction of contaminants from industries, municipalities or other sources
  - (7) Known existence of substantial material deposits of substances which could be released in harmful quantities to the aquatic environment by man-induced discharge/fill
  - (8) Other sources (specify)

The existing conditions for hazardous, toxic, and radioactive waste and materials producers are discussed in the Draft IFR/ EIS. There are no known records of any Hazardous, Toxic, or Radioactive (HTRW) materials within the dredged or fill footprint of the project; this will be reverified in the PED Phase. If any previously unknown locations are discovered during PED, a Phase 1

Environmental Site Assessment (ESA) (and additional phased ESAs as needed) would be conducted. It is anticipated as a standard practice that only clean fill material demonstrating no potential for contaminants would be used. In addition, extensive testing, characterization, and evaluation would be conducted for any material that would need to be removed (and/or filled) in conjunction with the installation or construction of the proposed structures.

There are no known HTRW producers adjacent to the potential project impact sites that discharge effluents into the Gulf of Mexico, such as Gordon River, Venetian Bay, Rock Creek, Upper Gordan River, Cocohatchee River, Turkey Bay, and Outer Clam Bay, However, the areas surrounding the proposed project sites are highly developed; therefore, hazardous waste sources such as gas stations, dry cleaners, etc., exist around the entire study area as well as the documented Superfund and other contaminated sites detailed in the Draft IFR/ EIS.

- b. An evaluation of the appropriate information in 2a above indicated that there is reason to believe the proposed dredged or fill material is not a carrier of contaminants, of that levels of contaminants are substantively similar at extraction and disposal sites and not likely to exceed constraints. The material meets the testing exclusion criteria.

YES  NO

### 3. Disposal Site Delineation (40 CFR § 230.11(f))

- a. The following factors, as appropriate, have been considered in evaluating the disposal site.

- (1) Depth of water at disposal site
- (2) Current velocity, direction, and variability at disposal site
- (3) Degree of turbulence
- (4) Water volume stratification
- (5) Discharge vessel or fill speed and direction
- (6) Rate of discharge/fill
- (7) Dredged material characteristics (constituents, amount, and type of material, settling velocities)
- (8) Number of discharges/fill per unit of time
- (9) Other factors affecting rates and patterns of mixing (specify)

Dredging operations (Hopper and Cutterhead) are anticipated for this project. It is anticipated that all material will be pumped onto shore and placed as nourishment at varying intervals and depths on the four beach reaches approximately 9.5 miles of Collier County's Gulf Coast, within Planning Areas 1 and 3, as described and depicted in the IFR/EIS. Sand transport mitigation with the hydraulic cutterhead dredge and pipeline would occur north and south of the proposed jetties at Wiggins Pass.

Material would be dredged from the T1 Shoal and the T2 Shoal, located approximately 30 miles off the coast of the nearest beach nourishment site. Sand placement, and movement of the sand to construct the beach berm and dunes will require heavy earth-moving equipment, which generates disturbance and noise effects typical of a construction site. In addition, during construction, pipelines will be in place at various locations to pump the sand in from offshore.

Impacts from dredging sand/borrow material will include direct removal and mortality of benthic organisms; turbidity/siltation effects, including increased light attenuation from turbidity; noise disturbances to aquatic organisms; and alteration of hydrodynamic regimes and physical habitat. A portion of the T1 Shoal, the T1 Borrow Site, has previously been used as a sand source for beach nourishment activities, so this area has already undergone various stages of disruption and re-colonization.

Dredging, pumping and placement of sand material will have temporary and permanent impacts ranging from minor to potentially moderate to water quality in the ROI. A Clean Water Act Section 401 water quality certification is required from the State of Florida for this project. Any and all applicable authorizations will be coordinated and obtained prior to the start of construction.

- b. An evaluation of the appropriate factors in 4A above indicates that the disposal site and/or size of mixing zone are acceptable.

YES  NO

4. Actions to Minimize Adverse Effects (40 CFR §§ 230.70-230.77)(Subpart H)

All appropriate and practicable steps have been taken, through application of recommendation of Section 230.70-230.77 to ensure minimal adverse effects of the proposed discharge/fill.

YES  NO

It is anticipated that the impacts would not be significant if mitigated as proposed, and would be avoided or minimized to the maximum extent practicable. At that time all appropriate and practicable steps would be employed to ensure minimal adverse effects of the proposed discharge/fill. An Environmental Mitigation Plan is located in the Environmental Appendix of the Draft IFR/EIS.

Best Management Practices to ensure that resources in the ROI is impacted to a lesser extent are:

- 1) Conduct noise generating work in a way that minimizes acoustic effects and avoids injury to managed/unmanaged species and their habitat.
- 2) Avoid placing staging areas or structural measures in the water.
- 3) Limit the amount and extent of turbidity and sedimentation by using appropriate sedimentation and turbidity controls such as silt curtains, settling

basins, cofferdams, and/or operational modifications such as conducting the work at low tide.

4) Minimize the amount of new impervious surfaces, and incorporate stormwater controls to minimize pollutants in aquatic habitats

5) Remove cofferdams or other diversion structures only after water quality is consistent with ambient levels outside the structure.

6) Ensure that construction vessels/barges are operated in adequate water depths to avoid propeller scour and grounding at all tides. Use shallow draft vessels that maximize the navigational clearance between the vessel and the benthos in shallow areas.

## 5. Factual Determination (40 CFR § 230.11)

A review of appropriate information as identified in items 2-5 above indicates that there is minimal potential for short or long-term environmental effects of the proposed discharge/fill as related to:

- a. Physical substrate at the disposal site (review sections 2a, 3, 4, & 5)
- b. Water circulation, fluctuation & salinity (review sections 2a, 3, 4, & 5)
- c. Suspended particulates/turbidity (review sections 2a, 3, 4, & 5)
- d. Contaminant availability (review sections 2a, 3, & 4)
- e. Aquatic ecosystem structure and function (review sections 2b, c; 3, & 5)
- f. Disposal site (review sections 2, 4, & 5)
- g. Cumulative impact on the aquatic ecosystem
- h. Secondary impacts on the aquatic ecosystem

Potential impacts to environmental resources are described in the Draft IFR/EIS.

This initial analysis was conducted to evaluate the overall potential for environmental impacts based on projected project features and estimated impacts using existing data. The findings from this analysis would be revisited once the designs are finalized and the cultural and any necessary environmental surveys are conducted, and subsequent data has been analyzed. During the PED Phase of the project, detailed surveys of the extent, diversity, and coverage of SAV and hardbottom habitat/corals and a wetland jurisdictional determination would be conducted.

## 6. Review of Compliance (40 CFR § 230.10(a)-(d) (Subpart B)

A review of the permit application indicates that:

- a. The discharge/fill represents the least environmentally damaging practicable alternative and if in a special aquatic site, the activity associated with the discharge/fill must have direct access or proximity to, or be located in the

aquatic ecosystem to fulfill its basic purpose (if no, see section 2 and information gathered for EA alternative);

YES  NO

- b. The activity does not appear to 1) violate applicable state water quality standards or effluent standards prohibited under Section 307 of the CWA; 2) jeopardize the existence of Federally designated marine sanctuary (if no, see section 2b and check responses from resource and water quality certifying agencies;

YES  NO

- c. The activity will not cause or contribute to significant degradation of waters of the U.S. including adverse effects on human health, life stages of organisms dependent on the aquatic ecosystem, ecosystem diversity, productivity and stability, and recreational, aesthetic, and economic values (if no, see section 2);

YES  NO

- d. Appropriate and practicable steps have been taken to minimize potential adverse impacts of the discharge/fill on the aquatic ecosystem (if no, see section 5);

YES  NO

The project siting, design, and footprint of the Alternative 4A is anticipated to be the preliminary least environmentally damaging practicable alternative (LEDPA) and additional analysis and evaluation during the PED Phase would serve to further substantiate this. At that time all appropriate and practicable steps would be employed to ensure minimal adverse effects of the proposed discharge/fill to human health, life stages of organisms dependent on the aquatic ecosystem, ecosystem diversity, productivity and stability, and recreational, aesthetic, and economic values. The project would be designed to not violate applicable state water quality standards or effluent standards prohibited under Section 307 of the CWA nor jeopardize the existence of any federally designated marine sanctuaries.

## 7. Findings

- a. The proposed disposal site for discharge of dredged or fill material complies with the Section 404 (b)(1) guidelines
- b. The proposed disposal site for discharge of dredged or fill material complies with the Section 404(b)(1) guidelines with the inclusion of the following conditions:

Water quality and sediment transport modeling will be conducted to determine whether potential adverse effects would require additional compensatory mitigation.

- Water Quality modeling is being conducted to determine the extent of adverse effects with respect to N, P, and TSS, as well as sediment transport.
- Compensatory mitigation to offset the functional losses of mangrove wetlands, SAV, hardbottom, and vegetated beach dunes would be completed in accordance with the Environmental Mitigation Plan found in this Environmental Appendix, Appendix D.
- All terms and conditions and conservation measures from the Biological Opinions of the USFWS and NMFS are adhered to.
- The recommendations of NMFS to avoid and minimize adverse effects on EFH are adhered to, to the maximum extent practicable.
- BMPs for migratory birds and for control of invasive species are adhered to.
- All BMPs as described herein are adhered to.
- Project specifications would ensure that any proposed disposal site for discharge of dredged or fill material would be in full compliance with Section 404(b)(1) guidelines.

c. The proposed disposal site for discharge of dredged or fill material does not comply with the Section 404(b)(1) guidelines for the following reason(s):

- (1) There is a less damaging practicable alternative
- (2) The proposed discharge/fill will result in significant degradation of the aquatic ecosystem
- (3) The proposed discharge/fill does not include all practicable and appropriate measures to minimize potential harm to the aquatic ecosystem

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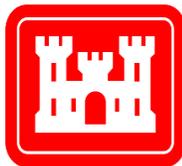
**COLLIER COUNTY COASTAL STORM RISK  
MANAGEMENT PROJECT**

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**Coastal Zone Management Act Draft  
Determination**

**Norfolk District  
803 Front Street  
Norfolk, Virginia 23510**

**July 31, 2020**



**U.S. Army Corps  
of Engineers  
Norfolk District**

**Florida Coastal Zone Management Program Evaluation Procedures  
Federal Consistency Determination (FCD)**

**Collier County Coastal Storm Risk Management Project  
Collier County, Florida**

**July 1, 2020**

**Enforceable Policy.** Florida Statutes considers “enforceable policy” under the Coastal Zone Management Act ([www.dep.state.fl.us/cmp/federal/24\\_statutes.htm](http://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\*.

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

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

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

## Coastal Zone Consistency Statement by Statute/Enforceable Policy

### 1. CHAPTER 161, F.S., BEACH AND SHORE PRESERVATION.

*Coastal areas are among the state's most valuable natural, aesthetic, and economic resources. 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 purpose for the project is to provide coastal storm risk management through a coastal storm protection system. The Tentatively Selected Plan (TSP) recommended herein includes the following measures to reduce coastal storm risk and damage throughout Collier County:

Beach renourishment along four reaches of Gulf of Mexico-facing shoreline, totaling approximately 9.5 miles in Collier County, Florida. The need of the beach nourishment portion of the project is driven by the loss of sand (erosion) along the shoreline. Erosion has reduced the width of the beach, thus increasing the risk for storm damages to the shoreline. Periodic renourishment of the beach will be required to replace sand along the shoreline and thus maintain the beach to a wider template.

These reaches were identified as critical to the protection of upland structures, both adjacent to the beach and along the inland bay areas during storm events, as well as having risk of damage due to erosion and wave attack. Sand volumes were calculated for initial placement and renourishment approximately every seven years to reduce future damage to upland structures and stabilize the shoreline to prevent breaching.

The specific areas for beach nourishment include:

- A higher beach dune and beach berm are also included in PA1 from the northern County line (approximately at Florida DEP range monument 1 (R1)) through Vanderbilt Beach (approximately R29)
- A higher beach dune and beach berm from Park Shore to Naples Beach (approximately R46-R68)

The beach berm and dune where they are recommended in the planning areas, would be an approximate maximum width of 75 feet from the toe of the dune vegetation and to a maximum height of 14 feet. Existing dune vegetation would be covered to create new, higher dunes; therefore vegetative dune replantings will also be incorporated into the beach dunes, in accordance with the Environmental Mitigation Plan, in the Collier County Coastal Storm Risk Management Draft Integrated Feasibility Report and Environmental Impact Statement (IFR/EIS) Environmental Appendix, Appendix D.

The sand source for the beach nourishment is described in more detail in Chapter 6 of the Collier County Coastal Storm Risk Management Draft IFR/EIS of which this report is an appendix.

Sand would be dredged via hopper dredge from these two proposed sand shoal borrow areas, which are located approximately 33 Nmi offshore of Naples, Florida: the Shoal Area T1 and the Shoal Area T2. The northern portion of the Shoal Area T1 (Borrow Area T1) has been previously used as a sand source for past beach nourishment projects in Collier County. After dredging, sand would be transported to beach sites with the hopper dredge and sand would be placed via pipeline from the hopper dredge. Sand placement pipelines would be positioned at sites previously established and permitted in the 2016 Collier County beach re-nourishment projects; additional pipeline sites may also be required in addition to those used previously by the Collier County.

Renourishment of the Collier beach segments would occur on a periodic cycle or as-needed basis using the identified off-shore sand source. The dunes would include vegetated plantings which would improve their stability. Public beach access must be maintained as a requirement of the federal project. The intent is to improve and maintain the proposed beach segments.

Other proposed shoreline features include structural measures including two surge barriers across Wiggins Pass and Doctors Pass; two jetties at the Wiggins Pass and concrete structures in the berm/dune at the adjacent shorelines; the Bonita Beach Road floodwalls surge barriers; the Seagate Drive floodwalls and sluice gate; and the Tamiami Trail floodwalls and surge barriers. Pump stations at may also be included at the floodwalls, surge barrier, and sluice gates. These structures are intended to hydraulically isolate portions of drainage basins from storm surge, and are critical for reducing risk to upland structures along the inland bay areas. In some cases, portions of the study area do not benefit from protections provided by the beaches, therefore they are solely reliant on these engineered structural measures. In other locations, the structural measures are complimentary and tie-in to beach features to create a coastal storm protection system. In all cases, the structures would be constructed in a way to minimize impacts to beach areas and formulated to protect and maintain the shoreline.

The nonstructural measure of the project would include elevation of residential structures; floodproofing of critical infrastructure and condos; and acquisition and demolition of residential structures. The demolished residential structures would be planted with native vegetation and converted to green space and potentially may be turned into parks.

Mitigation for the project would consist of onsite compensatory mitigation. Mitigation would include dune vegetation plantings, mangrove mitigation, Submerged Aquatic Vegetation mitigation, and hardbottom habitat mitigation. Sand transport mitigation would also be done to compensate for sand transport impacts caused by the jetties. This would

consist of using a hydraulic cutterhead dredge with a pipeline to redistribute sand impacted by the jetties.

The proposed project is consistent with the goals of this chapter.

## **2. 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.*

RESPONSE: This project would serve to protect existing infrastructure and structures and increase life-health safety and resiliency in Collier County and would not increase future development in the state. Pursuant to the National Environmental Protection Act (NEPA), the proposed project will be coordinated with federal, state, federally recognized Native American tribes, local agencies, and other interested parties. The proposed project meets the goals of the State Comprehensive Plan by mitigating coastal storm damages to infrastructure along or near Collier County through beach renourishment and other structural and non-structural coastal storm risk management measures.

The proposed project is consistent with the goals of this chapter.

## **3. CHAPTER 186, F.S., STATE AND REGIONAL PLANNING**

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

RESPONSE: This storm risk management project is compatible with state and regional plans and would further serve to increase the protection and resiliency of Collier County. Extensive coordination with local, state, and federal agencies has occurred throughout the project and would continue during the implementation phase of the project. The proposed project meets the goals of the State Comprehensive Plan by mitigating coastal storm damages to infrastructure along or near segments of the Collier County shoreline through beach renourishment as well as other structural and nonstructural measures.

The proposed project is consistent with the goals of this chapter.

#### **4. CHAPTER 252, F.S., EMERGENCY MANAGEMENT**

*The state of Florida is vulnerable to a wide range of emergencies, including natural, technological, and manmade disasters. This vulnerability is exacerbated by the tremendous growth in the state's population. This statute directs the state to reduce the vulnerability of its people and property to natural and manmade disasters; prepare for, respond to and reduce the impacts of disasters; and decrease the time and resources needed to recover from disasters.*

*Disaster mitigation is necessary to ensure the common defense of Floridians' lives and to protect the public peace, health, and safety. The policies provide the means to assist in the prevention or mitigation of emergencies that may be caused or aggravated by the inadequate planning or regulation. State agencies are directed to keep land uses and facility construction under continuing study and identify areas that are particularly susceptible to natural or manmade catastrophic occurrences.*

RESPONSE: The project would provide significant benefits for coastal storm risk reduction, would improve emergency management (as this project would serve to protect critical infrastructure, residential and commercial structures, and transportation routes from major coastal storm damage and allow for greater resiliency and faster emergency response following storm events), and would reduce coastal storm-related life-loss to a substantive portion of the Collier County Community.

Pursuant to NEPA, the proposed project has been coordinated with local, federal, and state agencies including those conducting emergency response planning as well as the public and tribal governments. Interagency coordination includes representatives from the Federal Emergency Management Agency (FEMA), the Florida Department of Environmental Management (FDEM), Collier County emergency management departments, and the Florida Department of Transportation (FDOT).

During the Preconstruction, Engineering, and Design (PED) Phase, an operation and maintenance plan will be developed for the project and coordinated with the public. The County currently has a State Emergency Response Plan (SERP) into which the operation and maintenance plan could be incorporated.

The proposed project meets the goals of the State Comprehensive Plan, as described in detail in the Draft IFR/EIS, and is consistent with the goals of this chapter.

#### **5. CHAPTER 253, F.S., STATE LANDS**

*The Board of Trustees of the Internal Improvement Trust Fund (Trustees) is vested and charged with the acquisition, administration, management, control, supervision, conservation, protection, and disposition of all lands owned by the state. Lands acquired for preservation, conservation and recreation serve the public interest by contributing to*

*the public health, welfare and economy. In carrying out the requirements of this statute, the Trustees are directed to take necessary action to fully: conserve and protect state lands; maintain natural conditions; protect and enhance natural areas and ecosystems; prevent damage and depredation; and preserve archaeological and historical resources.*

*All submerged lands are considered single-use lands to be maintained in natural condition for the propagation of fish and wildlife and public recreation. Where multiple-uses are permitted, ecosystem integrity, recreational benefits and wildlife values are conserved and protected.*

RESPONSE: The surge structural features would cause direct and indirect impacts to submerged lands and aquatic resources of the State of Florida in inlets and along the Collier County shoreline.

The construction, operation, and maintenance of the surge barriers, floodwalls and associated pump stations would result in a range of temporary to permanent impacts to aquatic resources and habitats that range from negligible to potentially significant impacts on water quality and fish and wildlife conservation; these are discussed further under #13 Water Resources, and #17 Fish and Wildlife Conservation, respectively. The construction, operation, and maintenance of the surge barriers, sluice gate and associated floodwalls and pump stations also would have direct and indirect permanent impacts on a mangrove wetlands, Submerged Aquatic Vegetation (SAV), and hardbottom habitat. These effects are discussed in Section 13, Water Resources. The construction of the reef Natural and Nature-Based Features near the Marco Island would provide a minor benefit to water quality and the benthic community.

Impacts to upland areas, natural drainage features, utilities, existing structures, etc. would generally be within the footprint of the project alignment and immediate surrounding areas. The associated impacts would range from beneficial to adverse, minor to moderate, and temporary to permanent impacts. There would be only minor, potential adverse impacts to the natural floodplain.

The structural measures are anticipated to cause minor to moderate adverse effects to recreation that are temporary (during construction and operation and maintenance of the structural measures), to permanent due to the losses of recreational land alongside the Doctors and Wiggins Passes. The nonstructural measures effects are temporary and minimal, and the effects of beach nourishment are permanent and beneficial.

Cultural resource impacts would include potential adverse effects to historic buildings from the implementation of the nonstructural measures and/or unidentified archeological sites that could be impacted by the structural measures. Further study will be needed, and these potential impacts are addressed through a Programmatic Agreement (PA) with the Florida Division of Historic Resources (FDHR) and consulting parties, pursuant to Section 106 of the National Historic Preservation Act. Any potential adverse impacts to cultural resources would be mitigated as stipulated in the PA. Beneficial impacts to historic buildings resulting from structural risk reduction measures are also anticipated.

Construction, operation, and maintenance activities would increase ambient noise to levels greater than baseline. These adverse direct and indirect impacts to wildlife and

terrestrial habitat have the potential to be minor and temporary to permanent in duration. There would be adverse, permanent, and moderate impacts to terrestrial habitat from the permanent construction footprints of the floodwalls.

Moderate, direct permanent beneficial effects are expected with the addition of beach width. The sand would be dredged from an offshore location; outside of state waters; however, it would be barged in and then pumped up onto beaches from hopper dredges and cutter head dredges. State-owned bottom also would be filled for the beach nourishment.

Significant permanent effects on land use are expected to result from the nonstructural measures. However, these effects relate to the acquisition of residential properties, rather than state-owned land. These effects would be both adverse and beneficial, because while the land use would be permanently restricted for reclaimed areas due to acquisition, there would also be beneficial effects due to a more coastal storm resilient County and improved wildlife habitat.

Best management practices (BMPs) and other environmental protection measures, as described in detail in the DEIS, would be implemented to avoid and minimize adverse effects to the extent practicable to fish, benthic fauna, other wildlife resources, water quality, air quality, or other environmental resources. Formal Section 7 consultation pursuant to the Endangered Species Act (ESA) will be initiated with the US Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS), for federally listed threatened and endangered species and critical habitats.

Please refer to the Draft IFR/EIS for a more thorough description of the potential state resources impacted by the project.

The proposed project complies with the goals of this chapter to the extent practical.

## **6. CHAPTER 258, F.S., STATE PARKS AND PRESERVES**

*The statute addresses the state's administration of state parks, aquatic preserves, and recreation areas, which are acquired to emblemize the state's natural values and to ensure that these values are conserved for all time. Parks and preserves are managed for the non-depleting use, enjoyment, and benefit of Floridians and visitors and to contribute to the state's tourist appeal.*

*Aquatic Preserves are recognized as having exceptional biological, aesthetic, and scientific value and are set aside for the benefit of future generations. Disruptive physical activities and polluting discharges are highly restricted in aquatic preserves. State managed wild and scenic rivers possess exceptionally remarkable and unique ecological, fish and wildlife, and recreational values. These rivers are also designated for permanent preservation and enhancement for both the present and future.*

RESPONSE: Pursuant to NEPA, the proposed project is being coordinated with local, state, and federal regulatory agencies, tribal governments, and public stakeholders. Two state parks would be affected by the TSP: Delnor-Wiggins State Park and

Barefoot Beach Preserve. Both encircle Wiggins Pass. Delnor-Wiggins State Park occupies a mile of relatively undisturbed barrier island, one of a few such undeveloped gulf sites in this region preserved for public use is 199 acres, with 80% being submerged and mangrove swamp. Barefoot Beach Preserve is 342 acres of natural land, also located on one of the last undeveloped barrier islands on Florida's southwest coast. Vanderbilt Beach Park, a local park is also within the project footprint.

All of these beaches would be renourished with sand, which would provide benefits for recreational use. However, the new permanent structural measures: jetties, storm surge barriers, floodwalls, and pump stations would be constructed on the two state park lands. The Wiggins Pass Surge Barrier would remain open and navigable access would be preserved although potentially somewhat constricted, except prior to and during storm events. In addition, during construction, all of these areas would be closed to the public, which would be a temporary but minor impact on State Park usage.

Best Management Practices and other environmental protection measures, as described in detail in the Draft IFR/EIS, would be implemented to minimize adverse effects to the maximum extent practicable to fish and other wildlife resources, threatened and endangered species, water quality, air quality, or other environmental resources. The Corps would coordinate the project with the State of Florida during the Preconstruction, Engineering and Design Phase (PED) through the issuance of a Clean Water Act, 401 Water Quality Certification and Environmental Resource Permit.

The proposed project complies with the goals of this chapter to the extent practical.

## **7. CHAPTER 259, F.S., LAND ACQUISITION FOR CONSERVATION OR RECREATION**

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

RESPONSE: No land acquisition specifically for conservation or recreation is planned for this project. Renourishment of segments of the Collier County shoreline will maintain opportunities for recreational use of the beach and habitat for nesting sea turtles and other wildlife. Portions of the project will occur on submerged lands of the State of Florida. The Corps will coordinate the project with the State of Florida through the issuance of a Clean Water Act, 401 Water Quality Certification and Environmental Resource Permit, this Federal consistency review, and the NEPA IFR/EIS review process.

The proposed project complies with the goals of this chapter.

## **8. CHAPTER 260, F.S., FLORIDA GREENWAYS AND TRAILS ACT**

*A statewide system of greenways and trails is established in order to conserve, develop, and use the natural resources of Florida for healthful and recreational purposes. These greenways and trails provide open space benefiting environmentally sensitive lands and wildlife and provide people with access to healthful outdoor activities. The greenways and trails serve to implement the concepts of ecosystem management while providing recreational opportunities such as horseback riding, hiking, bicycling, canoeing, jogging, and historical and archaeological interpretation. As of August 29<sup>th</sup>, 2016, Chapter 260, F.S., does not contain any enforceable policies for federal consistency purposes.*

RESPONSE: During construction, beach access would be closed off for safety purposes. This may affect the use of some beach trails with the state parks. However, this effect would be temporary and minor.

The proposed project meets the goals of the State Comprehensive Plan, as described in detail in the Draft IFR/EIS, and is consistent with the goals of this chapter.

## **9. CHAPTER 267, F.S., HISTORICAL RESOURCES**

*The management and preservation of the state's archaeological and historical resources are addressed by this statute. This statute recognizes the state's rich and unique heritage of historic resources and directs the state to locate, acquire, protect, preserve, operate and interpret historic and archeological resources for the benefit of current and future generations of Floridians.*

*Objects or artifacts with intrinsic historic or archeological value located on, or abandoned on, state-owned lands or state-owned submerged lands belong to the citizens of the state. The state historic preservation program operates in conjunction with the National Historic Preservation Act of 1966 to require state and federal agencies to consider the effect of their direct or indirect actions on historic and archeological resources. These resources cannot be destroyed or altered unless no prudent alternative exists. Unavoidable impacts must be mitigated.*

RESPONSE: Consultation on the TSP is ongoing with the SHPO and appropriate federally recognized tribes for compliance with Section 106 of the National Historic Preservation Act (NHPA) for the Federal portions of the project as described in detail in the DEIS. A Draft PA has been prepared and was coordinated with the Florida Division of Historic Resources (FDHR) and consulting parties, pursuant to Section 106 of the National Historic Preservation Act. The proposed project is consistent with the goals of this chapter. The proposed plans, a copy of the PA once executed, and supplemental information will be submitted to the state in compliance with this chapter once finalized. Additional survey work would be needed during the PED Phase of the project. Mitigation would be conducted for any potential adverse impacts to archeological resources and historic buildings in accordance with Section 106 of the NHPA.

The proposed project is consistent with the goals of this chapter.

#### **10. CHAPTER 288, F.S., COMMERCIAL DEVELOPMENT AND CAPITAL IMPROVEMENTS**

*The framework to promote and develop general business, trade, and tourism components of the state economy are established in this statute. The statute includes requirements to protect and promote the natural, coastal, historical, and cultural tourism assets of the state; foster the development of nature-based tourism and recreation; and upgrade the image of Florida as a quality destination. Natural resource-based tourism and recreational activities are critical sectors of Florida's economy. The needs of the environment must be balanced with the need for growth and economic development.*

RESPONSE: Construction and renourishment of segments of the Collier County beaches will ensure the continuation of benefits to socioeconomic resources (e.g. recreation, tourism, etc.). However, there would be a temporary effect on tourism and recreational use, in that the beach areas and locations of all construction will be closed to the public during construction. This effect is expected to be temporary and minor. Best management practices and other environmental protection measures, as described in detail in the Draft IFR/DEIS, will be implemented to minimize adverse effects to the maximum extent practicable to fish and other wildlife resources, threatened and endangered species, water quality, air quality, or other environmental resources. The proposed project is consistent with the goals of this chapter.

This project would impact recreation in the Collier County coastal inlets causing temporary to permanent impacts that are minor to moderate as described in in the Draft IFR/EIS. However, the storm risk structural measures would also serve to provide storm protection to recreational lands and areas (such as museums and shopping areas) and transportation routes serving to support the local economy. Implementation of the project components would provide benefits to socioeconomic resources (e.g. recreation, tourism, import/exports, commercial properties, etc.). The BMPs, terms and conditions and conservation measures associated with the Biological Opinions, and other environmental protection measures, as described in detail in the IFR/EIS, would be implemented to minimize adverse effects to the maximum extent practicable to fish and other wildlife resources, threatened and endangered species, water quality, air quality, and other environmental resources.

The proposed project meets the goals of the State Comprehensive Plan and is consistent with the goals of this chapter.

#### **11. CHAPTER 334, F.S., TRANSPORTATION ADMINISTRATION**

*The statute addresses the state's policy concerning transportation administration. It establishes the responsibilities of the state, the counties, and the municipalities in the planning and development of the transportation systems; and the development of an integrated, balanced statewide transportation system. This is necessary for the protection*

*of public safety and general welfare and for the preservation of all transportation facilities in the state. As of October 9<sup>th</sup>, 2017, Chapter 334, F.S., does not contain any enforceable policies for federal consistency purposes.*

RESPONSE: This project would serve to provide significant storm surge protection to critical infrastructure and the transportation system in portions of Collier County as described in the Draft IFR/EIS. There would be minimal impacts to transportation, during construction and while the surge barriers and sluice gate remain open. However, street gate closures would be necessary prior to high storm events, and residents would need to plan accordingly. Interagency coordination has occurred throughout the study process and has included representatives from the FDOT. Close collaboration and input would continue with FDOT throughout the implementation phase to ensure that the proposed project is consistent with the State Comprehensive Plan and meets the goals of this chapter. During the PED phase, an operation and maintenance plan would be developed during the PED Phase, and would be coordinated with the public.

The proposed project meets is consistent with the goals of this chapter.

## **12. CHAPTER 339, F.S., TRANSPORTATION FINANCE AND PLANNING**

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

RESPONSE: This project would serve to provide significant storm surge protection to critical infrastructure and the road system in portions of Collier County as described in the Draft IFR/EIS. There would be minimal adverse impacts to transportation during construction and while the surge barriers and sluice gate remain open. However, street gate closures would be necessary prior to high storm events, and residents would need to plan accordingly.

Interagency coordination has occurred throughout the study process and has included representatives from the FDOT, which is a cooperating agency for this study. Close collaboration and input would continue with FDOT throughout the implementation phase to ensure that the proposed project is consistent with the State Comprehensive Plan and meets the goals of this chapter. During the PED phase, an operation and maintenance plan would be developed during the PED Phase, and would be coordinated with the public.

The proposed project meets is consistent with the goals of this chapter.

## **13. CHAPTER 373, F.S., WATER RESOURCES**

*The waters in the state of Florida are managed and protected to conserve and preserve water resources, water quality, and environmental quality. This statute addresses sustainable water management; the conservation of surface and ground waters for full beneficial use; the preservation of natural resources, fish, and wildlife; protecting public land; and promoting the health and general welfare of Floridians. The*

*state manages and conserves water and related natural resources by determining whether activities will unreasonably consume water; degrade water quality; or adversely affect environmental values such as protected species habitat, recreational pursuits, and marine productivity.*

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

RESPONSE: The new beach berm profile would extend an estimated average of 75 feet channelward from the toe of the new dunes; therefore, areas that are currently state waters would be converted to upland beach berm. Beach nourishment actions from offshore borrowing and from the nearshore sand transport mitigation would require both hopper dredge offshore and cutterhead dredges. Dredging from the aforementioned borrow and shoaling sites approximately 33 Nmi offshore of Naples, Florida would be outside of state waters. Placement activities would be accomplished by pumping sand via pipeline from dredges onto the shore and spreading it out to the appropriate dune and berm dimensions. This would result in increases in Total Suspended Solids (TSS), turbidity/sedimentation in the water column and potentially minor increases in nutrients, and the alteration of bathymetry, hydrodynamic regimes and habitat and benthic resources. Sedimentation may increase in the Region of Influence (ROI) during construction, though BMPs would be used to minimize these impacts. Because the material will be sandy, it is expected to settle out and not expected to stay in suspension for long periods of time.

Construction and maintenance of the surge barriers, sluice gate, jetties, floodwalls, and pump stations would result in temporary increases in turbidity and altered sediment deposition processes resulting in adverse, temporary, and minor to moderate water quality impacts. Potential permanent and temporary impacts could occur to the physical substrate, turbidity, water quality, water velocity, current patterns and water circulation, normal water fluctuations, and salinity gradients from the use of construction equipment for the installation and construction, operation and maintenance of the surge barriers, sluice gate, jetties, floodwalls, pump stations, and associated features. Construction of the in-water structural measures could increase flow velocities by limiting the area where tidal ebb and flow could occur

Construction BMPs will be used for construction, such as silt fences, turbidity curtains, and potentially cofferdams, to minimize any sediment input from construction sites to the water. There would be in-water construction and maintenance of the surge barrier and sluice gates and portions of the floodwalls. There will be local, temporary increases in TSS as the in-water structural features are constructed. Adverse impacts from the

construction of the structural features on bathymetry, hydrology, and tidal processes would range from temporary and minor.

However, the construction, operation, and maintenance of the surge barriers, sluice gate, jetties, floodwalls, and associated pump stations would result in a range of temporary to permanent impacts to aquatic resources and habitats that range from moderate to potentially significant. Surge barrier operations could potentially result in altered salinity, Dissolved Oxygen (DO), nutrients, and temperature. The operation and testing of the surge barriers and pump stations would directly and indirectly impact local water quality. During most conditions, the surge barriers would be in the open position (more than approximately 80% of the time) with minimal flow velocity and water quality impacts; the surge barriers and sluice gate would only be closed during major storm events and during testing conditions. It would be anticipated that water quality impacts resulting from closure events during storm conditions would eventually equilibrate to background ambient conditions following the storm surge barrier and sluice gate reopening.

Post construction, during storm events, the surge barriers and sluice gate will be closed for up to approximately five days (but up to approximately 10 days). During this time, no tidal exchange between the embayments and nearshore coastal waters will occur. This will likely result in declines in water quality in the embayments, as salinity is expected to decrease and nutrients are expected to increase, possibly to levels adverse to local aquatic flora and fauna. This is due to the containment of very fresh, poor quality (high in nitrogen, phosphorus, and total suspended solids (TSS) water behind the surge barriers and sluice gate, where it will impact any natural resources inhabiting these waters.

The subsequent openings post-storm will potentially in a large pulse of fresh water to enter nearshore waters of Collier County at discharge points. Following storm events, plumes have the potential to alter water quality as it ultimately flows into offshore areas. This will directly alter local water quality by altering local salinity near discharge points, TSS and dissolved nutrients nitrogen (N) and phosphorus (P), which will lower water quality and can also negatively impact any benthic habitats, particularly SAV and corals, which require relatively pristine higher salinity waters to thrive, especially corals.

The relative effects of the surge barriers and sluice gate on water quality, hydrology, and sedimentation is uncertain, therefore, modeling will be conducted during the feasibility phase to better understand the magnitude and extent of potential impacts.

#### Wetland, Submerged Aquatic Vegetation, and Hardbottom Impacts:

At this time, wetland, SAV, and hardbottom impacts have been estimated, based on National Wetland Inventory (NWI) mapping, the Collier County Hardbottom 2018-2019 Survey Data (Collier County 2019) and Florida Fish and Wildlife Commission (FWWC) mapping layers for SAV. The USACE also conducted a geospatial analysis of vegetated dunes anticipated to be impacted by the berm/dune construction and maintenance. For purposes of this preliminary impact assessment, direct permanent adverse impacts includes construction access for mangrove impacts, because it is assumed that such areas might be permanently adversely affected. Indirect effects were assumed for areas

not within the project footprint, but in close enough proximity to be altered by the effects of the structure. The estimated impacts at this time are: 6.4 acres of direct, permanent mangrove impacts; 5.2 acres of indirect mangrove impacts, and 11.6 acres of indirect hardbottom impacts. Additional analysis for the existing conditions and the potential impacts to Special Aquatic Sites can be found in the Draft IFR/EIS.

Detailed environmental surveys for coral/hardbottom habit and SAV, and a jurisdictional determination to identify all waters of the U.S., including wetlands, will be conducted in the PED Phase.

The Uniform Mitigation Assessment Method (UMAM) will be utilized as a functional assessment to determine appropriate mitigation for vegetated dunes, wetlands, SAVs, and hardbottom. The Environmental Mitigation Plan is found in the Environmental Appendix of this Draft IFR/EIS. Implementation of this mitigation plan would reduce these permanent impacts from moderate to minor.

Pursuant to NEPA, the proposed project will be coordinated with federal, state, federally recognized Native American tribes, local agencies, and other interested parties. Environmental protection measures, as described in detail in the Draft IFR/EIS, will be implemented to minimize adverse effects to the maximum extent practicable to water resources. The Corps will coordinate the project with the State of Florida through the issuance of a WQC, FCD review, and the review process of the IFR/EIS. BMPs would be followed to avoid and minimize environmental impacts. The proposed project complies with the goals of this chapter.

#### **14. CHAPTER 375, F.S., OUTDOOR RECREATION AND CONSERVATION LANDS**

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

#### **RESPONSE:**

The effects on the existing parks are discussed under #6 State Parks and Preserves, and #7 Land Acquisition for Conservation.

Otherwise, residential properties acquired and demolished would be converted to greenspaces and/or potentially parks; these previously developed areas would be perpetually preserved in a natural state providing a minor, benefit. Coordination will continue to occur with the Collier County as our nonfederal sponsor, both during the feasibility study and in the PED Phase, to ensure compliance with the County's Parks and Recreation Plan, dated May 18, 2018.

The proposed project meets the goals of the State Comprehensive Plan, as described in detail in the Draft IFR/EIS, and is consistent with the goals of this chapter.

## **15. CHAPTER 376, F.S., POLLUTANT DISCHARGE PREVENTION AND REMOVAL**

*Regulating the transfer, storage, and transportation of pollutants, and the cleanup of pollutant discharges is essential for maintaining coastal resources (specifically the coastal waters, estuaries, tidal flats, beaches, and public lands adjoining the seacoast) in as close to a pristine condition as possible. The preservation of the seacoast as a source of public and private recreation, along with the preservation of water and certain lands are matters of the highest urgency and priority.*

*This statute provides a framework for the protection of the state's coastline from spills, discharges, and releases of pollutants. The discharge of pollutants into or upon any coastal waters, estuaries, tidal flats, beaches, and lands adjoining the seacoast of the state is prohibited. The statute provides for hazards and threats of danger and damages resulting from any pollutant discharge to be evaluated; requires the prompt containment and removal of pollution; provides penalties for violations; and ensures the prompt payment of reasonable damages from a discharge.*

*Portions of Chapter 376, F.S., serve as a complement to the national contingency plan portions of the federal Water Pollution Control Act.*

RESPONSE: Potential adverse water quality impacts due to nutrient and TSS, related to stormwater and runoff are discussed in Section #13 Water Resources. There are no known contaminated sites within the structural footprint of the TSP. However, if contamination is found, it will be cleaned up according to existing laws and regulations. Petroleum products, hazardous materials and wastes would be handled and disposed of in accordance with state and federal requirements. All wastes would be disposed of at certified waste disposal facilities. The contract specifications will be written to prohibit the contractor from dumping oil, fuel, or hazardous wastes in the work area and will include conditions on how to handle inadvertent spills of pollutants, such as vehicle fuels. A spill prevention and control plan would be developed prior to project implementation.

The proposed project meets the goals of the State Comprehensive Plan, as described in detail in the DEIS, and is consistent with the goals of this chapter.

## **16. CHAPTER 377, F.S., ENERGY RESOURCES**

*The statute addresses the regulation, planning, and development of the energy resources of the state. The statute provides policy to conserve and control the oil and gas resources in the state, including products made therefrom and to safeguard the health, property and welfare of Floridians. The Department of Environmental Protection (DEP) is authorized to regulate all phases of exploration, drilling, and production of oil, gas, and other petroleum products in the state.*

*The statute describes the permitting requirements and criteria necessary to drill and develop for oil and gas. DEP rules ensure that all precautions are taken to prevent the spillage of oil or any other pollutant in all phases of extraction and transportation. The*

*state explicitly prohibits pollution resulting from drilling and production activities. No person drilling for or producing oil, gas, or other petroleum products may pollute land or water; damage aquatic or marine life, wildlife, birds, or public or private property; or allow any extraneous matter to enter or damage any mineral or freshwater-bearing formation.*

*Penalties for violations of any provisions of this chapter are detailed.*

RESPONSE: The proposed project does not involve the development of energy resources.

## **17. CHAPTER 379, F.S., FISH AND WILDLIFE CONSERVATION**

*The framework for the management and protection of the state of Florida's wide diversity of fish and wildlife resources are established in this statute. It is the policy of the state to conserve and wisely manage these resources. Particular attention is given to those species defined as being endangered or threatened. This includes the acquisition or management of lands important to the conservation of fish and wildlife.*

*This statute contains specific provisions for the conservation and management of marine fisheries resources. These conservation and management measures permit reasonable means and quantities of annual harvest (consistent with maximum practicable sustainable stock abundance) as well as ensure the proper quality control of marine resources that enter commerce.*

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

RESPONSE: As described earlier, construction, operation, and maintenance of the surge barriers, sluice gate, and associated floodwalls and pump stations would cause direct and indirect impacts to SAV as well as corals/hardbottom habitat (including federally listed corals) that are moderate. Threatened and endangered species regulated under the Endangered Species Act (ESA), and under the jurisdiction of both US Fish and Wildlife Service (USFWS), and the National Marine Fisheries Service (NMFS), are likely to be adversely affected. Therefore, pursuant to ESA, the USACE has prepared Biological Assessments (BAs) and will initiate formal Section 7 consultation with NMFS and USFWS.

Essential Fish Habitat (EFH), other benthic habitats and species, and mangroves will also be adversely affected. An EFH assessment has been prepared in the IFR/EIS, and USACE will also initiate coordination with NMFS pursuant to the Magnuson-Stevens Act (MSA).

Minor to moderate, direct permanent beneficial and adverse effects are expected for threatened and endangered species, with the addition of beach width and dune height. Additional beach width would potentially impact nesting and foraging areas in the short-

term, but would also provide larger areas for some species such as sea turtles in the long-term. Adverse effects in the form of potential takes during dredging, construction and trapping are possible. Further detail is available in the IFR/EIS as well as in both BAs in the Environmental Appendix, Appendix D.

Direct and indirect impacts to EFH, including seagrass, mangroves, and coral reef/life/hardbottom habitats, as well as managed species and fish resources, would be adverse and both temporary and permanent, ranging from moderate to potentially significant for the following EFH, managed species, and their prey: corals, red drum, shrimp, reef fish, coastal migratory pelagic fish, and spiny lobster. In addition, impacts to 31 reef fish, commercial fisheries, and two corals (Black and Stony) were evaluated as part of the EFH chapter in the IFR/EIS.

Project construction itself would not be predicted to produce direct impacts that are substantively negative to EFH, managed species or their prey. Turbidity plumes generated at aquatic construction sites (i.e. construction of surge barriers/tide gates) are not expected to be significant due to the limited area and time in which construction will occur. Additionally, turbidity plumes are expected to settle and/or dissipate within hours of sediment disruption, as the majority of the areas with significant amounts of construction have sediments consisting largely of sand and/or sandy mud/muddy sand. Additionally, in areas where benthic sediment is relatively undisturbed and where dredging does not regularly occur, underwater construction could result in direct loss of some permanent habitat for fish and benthic invertebrate species. Habitat loss would be limited to the build location of project measures. Construction activities could also increase ambient noise to levels greater than baseline, which could result in a temporary disturbance effect to managed and unmanaged species in the ROI; noise levels would reduce to normal levels at night and after construction activities are completed.

However, construction and operation of the TSP is predicted to produce a number of indirect impacts that may significantly adversely affect EFH, managed species, and associated prey species. These impacts include changes in water quality (i.e. DO, salinity, and flow regimes) and potentially benthic prey species and habitat availability. Indirect impacts to EFH and managed species are predicted to be greatest during the operation and maintenance of the built structures proposed in the TSP.

The gates would allow passage of aquatic organisms in the open position; however, passage and availability of prey species may be more restricted than currently. Extreme storm and high tide events would trigger the closure of tide gates (throughout the county) and surge barriers (Wiggins Pass and Doctors Pass), causing shifts in water quality and flow rates (Refer to Water Quality Chapters in the IFR/EIS). Increased flow velocities may impede aquatic species passage into or out of upstream waters, however, the extent of this effect is uncertain at this time. Additionally, activation of pump stations could increase risk of entrainment to fishes upstream of the surge barriers, though this is dependent on the rate at which water is being pumped out of the upstream areas. During tide gate and surge barrier closures, tidal fluxes in water would cease for a period of time, potentially reducing water quality, salinity, and dissolved

oxygen (DO), while increasing the number of harmful nutrients in the water caused by run-off. Additionally, closure of the storm surge barriers and sluice gate could result in a trapping effect, by impeding passage to fish populations that frequently move in and out of upstream estuarine areas to feed and/or reproduce. Activation of pump stations would increase risk of entrainment to fishes trapped upstream of the surge barriers, though this is dependent on the rate at which water is being pumped out of the upstream areas. Indirect impacts from tide gate and storm surge barrier closures are potentially significant to EFH and fish populations in the ROI, but these effects would be temporary.

Any direct or indirect adverse effects to mangroves, hardbottom and SAV habitats will be mitigated. The Environmental Mitigation Plan for the Collier County CSR project can be found in the Environmental Appendix of the IFR/EIS. Water quality effects can be better determined following completion of modeling. Coordination with NMFS is ongoing, and will be completed during the Feasibility Phase, prior to the signing of the Chief's Report.

Construction activities would increase ambient noise to levels greater than baseline. These adverse direct and indirect impacts to wildlife and terrestrial habitat have the potential to be minor and temporary to permanent in duration. There would be adverse, permanent, and moderate impacts to terrestrial habitat from the permanent construction footprints of the floodwalls.

All coordination will be completed during the Feasibility Phase, prior to the signing of the Chief's Report.

Pursuant to NEPA, the proposed project will be coordinated with federal, state, federally-recognized Native American tribes, local agencies, and other interested parties. The BMPs and other environmental protection measures, as described in detail in the Draft IFR/DEIS, would be implemented to minimize adverse effects to the maximum extent practicable to threatened and endangered species as well as fish and other wildlife resources.

The project is consistent with the goals of this chapter. The proposed plans and information will be submitted to the state in compliance with this chapter once finalized.

## **18. CHAPTER 380, F.S., LAND AND WATER MANAGEMENT**

*Land and water management policies are established to protect natural resources and the environment; and to guide and coordinate local decisions relating to growth and development. The statute provides that state land and water management policies be implemented by local governments through existing processes for the guidance of growth and development. The statute also provides that all the existing rights of private property be preserved in accord with constitutions of this state and of the United States.*

*The chapter establishes the Areas of Critical State Concern designation, the Florida Communities Trust as well as the Florida Coastal Management Act. The Florida Coastal Management Act provides the basis for the Florida Coastal Management*

*Program which seeks to protect the natural, commercial, recreational, ecological, industrial, and aesthetic resources of Florida's coast.*

RESPONSE: The proposed project meets the goals of the State Comprehensive Plan, as described in detail in the Draft IFR/EIS, and is consistent with the goals of this chapter.

## **19. CHAPTER 381, F.S., PUBLIC HEALTH: GENERAL PROVISIONS**

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

RESPONSE: The state's public health system will be improved by the proposed project through the protection of critical infrastructure, transportation routes, and also prevention and reduction of structural damages within the study area. The proposed project meets the goals of the State Comprehensive Plan throughout its goals to provide greater protection of critical infrastructure in the study area, increase public safety through the greater protection of Collier County residents and businesses through flood protection measures, among other improvements that are in support of this statute which are described in detail in the Draft Integrated Report/EIS.

The proposed project meets the goals of the State Comprehensive Plan and is consistent with the goals of this chapter.

## **20. CHAPTER 388, F.S., MOSQUITO CONTROL**

*Mosquito control efforts of the state are to achieve and maintain such levels of arthropod control as will protect human health and safety; promote the economic development of the state; and facilitate the enjoyment of its natural attractions by reducing the number of pestiferous and disease-carrying arthropods.*

*It is the policy of the state to conduct arthropod control in a manner consistent with protection of the environmental and ecological integrity of all lands and waters throughout the state.*

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

## **21. CHAPTER 403, F.S., ENVIRONMENTAL CONTROL**

*Environmental control policies conserve state waters; protect and improve water quality; and maintain air quality. This statute provides wide-ranging authority to address various environmental control concerns, including air and water pollution; electrical power plant and transmission line siting; the Interstate Environmental Control Compact; resource recovery and management; solid and hazardous waste management; drinking*

*water protection; pollution prevention; ecosystem management; and natural gas transmission pipeline siting.*

RESPONSE: All required permits would be obtained and all permit conditions would be followed. The BMPs and other environmental protection measures, as described in the Draft IFR/EIS would be implemented to minimize adverse effects to the maximum extent practicable to fish and other wildlife resources, threatened and endangered species, water quality, air quality, or other environmental resources. The proposed project meets the goals of the State Comprehensive Plan, as described in detail in the Draft IIFR/EIS, and is consistent with the goals of this chapter.

## **22. CHAPTER 553, F.S., BUILDING AND CONSTRUCTION STANDARDS**

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

RESPONSE: This project would have no anticipated impact to the Florida Building Code.

## **23. CHAPTER 582, F.S., SOIL AND WATER CONSERVATION**

*It is the state's policy to preserve natural resources; control and prevent soil erosion, prevent floodwater and sediment damages; and to further the conservation, development and use of soil and water resources.*

*Farm, forest, and grazing lands are among the basic assets of the state; and the preservation of these lands is necessary to protect and promote the health, safety, and general welfare of its people.*

*These measures help to preserve state and private lands, control floods, maintain water quality, prevent impairment of dams and reservoirs, assist in maintaining the navigability of rivers and harbors, preserve wildlife and protect wildlife habitat, protect the tax base, protect public lands, and protect and promote the health, safety, and general welfare of the people of this state.*

RESPONSE: The project is not located on or near agricultural lands and would not impact any agricultural lands. The proposed project will include required sediment and erosion control plans and measures where applicable. Any temporary or permanent impacts to the natural floodplain from construction of flood risk management measures would be minor. Strict erosion and sediment control as well as other BMPs will be adhered to during construction.

The proposed project meets the goals of the State Comprehensive Plan, as described in detail in the DEIS, and is consistent with the goals of this chapter.

## **24. CHAPTER 597, F.S., AQUACULTURE**

*The statute establishes public policy concerning the cultivation of aquatic organisms in the state. The intent is to enhance the growth of aquaculture, while protecting Florida's environment. This includes a requirement for a state aquaculture plan which provides for: the coordination and prioritization of state aquaculture efforts; the conservation and enhancement of aquatic resources; and mechanisms for increasing aquaculture production.*

RESPONSE: The proposed project does not propose any measures specifically for the purposes of aquaculture.

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# **COLLIER COUNTY COASTAL STORM RISK MANAGEMENT PROJECT**

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## **Environmental Mitigation Plan**

**U.S. Army Corps of Engineers  
Norfolk District  
803 Front Street  
Norfolk, Virginia 23510**

**July 31, 2020**

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## **1.0 PURPOSE OF THIS DOCUMENT AND MITIGATION OBJECTIVES**

The purpose of this document is to describe the environmental resources impacted and quantity of compensatory mitigation required for implementation of the Preferred Alternative, Alternative 4A, for the Collier County Coastal Storm Risk Management (CSRSM) Draft Integrated Feasibility Report and Environmental Impact Statement (IFR/EIS). This document also serves to describe the mitigation strategies and alternatives that were considered, and the functional model used to assess functional resource loss requiring mitigation.

The compensatory mitigation objectives for the Collier County CSRSM Project would be the following:

- Describe the methodology that will be used to estimate the functional loss of unavoidable impacts to hardbottom habitat/corals, Submerged Aquatic Vegetation (SAV), mangroves, and dune vegetation with implementation of the Preferred Alternative, Alternative 4A;
- Identify potential environmental mitigation plan alternatives that compensate for the functional loss of hardbottom habitat/corals, SAV, mangroves, and dune vegetation;
- Identify the most cost-effective compensatory mitigation alternative that strategizes to identify and implement the most cost-effective mitigation plan while also meeting all environmental mitigation requirements; and
- Describe required real estate needs, in terms of labor and lands, easements, rights of way, and relocations (LERRDs) to implement the preferred environmental mitigation alternative.

This document is meant to describe the environmental mitigation strategy and would be updated during the Preconstruction, Engineering, and Design (PED) Phase of the project when the final siting of structures and engineering designs are provided and the quantity and type of required environmental mitigation as well as real estate acquisitions are finalized. Additional data collection to help identify the type and quantity of requirement mitigation would occur during the PED Phase. This additional data collection would include detailed environmental benthic surveys for corals/hardbottom and SAV, a wetland jurisdictional determination, and a detailed dune vegetation survey.

## **2.0 PURPOSE AND NEED FOR THE PROPOSED ACTION**

Since 1851, Collier County has been repetitively impacted by large storms. On average they have been hit by a tropical cyclone every 2-3 years, including 33 hurricanes, 20 of which were Category three or greater. This action is needed to address the coastal storm risk and the purpose is to develop and evaluate various alternatives aimed at increasing coastal resiliency against erosion and flooding. The beaches of coastal Collier County are at risk of storm surge, storm driven wave action, tidal flooding, and erosion. The shoreline is largely within critically eroded areas as designated by the Florida Department of Environmental Protection (FDEP) and is mostly public beaches with the exception of Pelican Bay. In addition, numerous inlets penetrate the interior community of Naples while Marco Island is completely surrounded by water with only two bridges in and out of the island. There are also concerns regarding a dense population of people who

require more time and assistance for evacuation, concerns for structures and critical infrastructure, and protection of evacuation routes.

### **3.0 ENVIRONMENTAL MITIGATION REGULATORY BACKGROUND**

The USACE and U.S. Environmental Protection Agency (USEPA) published regulations entitled, “Compensatory Mitigation for Losses of Aquatic Resources” (Mitigation Rule) on April 10, 2008. One of the primary goals of these regulations (33 Code of Federal Regulation (CFR) Parts 325 and 332) was to improve the quality and success of compensatory mitigation plans that are designed to offset impacts to aquatic resources. The Mitigation Rule emphasizes the strategic selection of mitigation sites on a watershed basis and established equivalent standards for all types of compensatory mitigation (mitigation banks, in-lieu fee programs, and permittee-responsible mitigation plans). Per these regulations, compensatory mitigation means the restoration (re-establishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of wetlands and special aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved. The three mechanisms for providing compensatory mitigation listed in order of preference as stated in the Mitigation Rule are the following: mitigation banks, in-lieu fee programs, and permittee-responsible mitigation. Compensatory mitigation is necessary to offset these unavoidable impacts to aquatic resource functions and services and to meet the programmatic goal of “no overall net loss” of aquatic resource functions and services.

### **4.0 DESCRIPTION OF THE PREFERRED ALTERNATIVE, ALTERNATIVE 4A**

For a detailed description of the Preferred Alternative, Alternative 4A please refer to the Collier County Draft IFR/EIS.

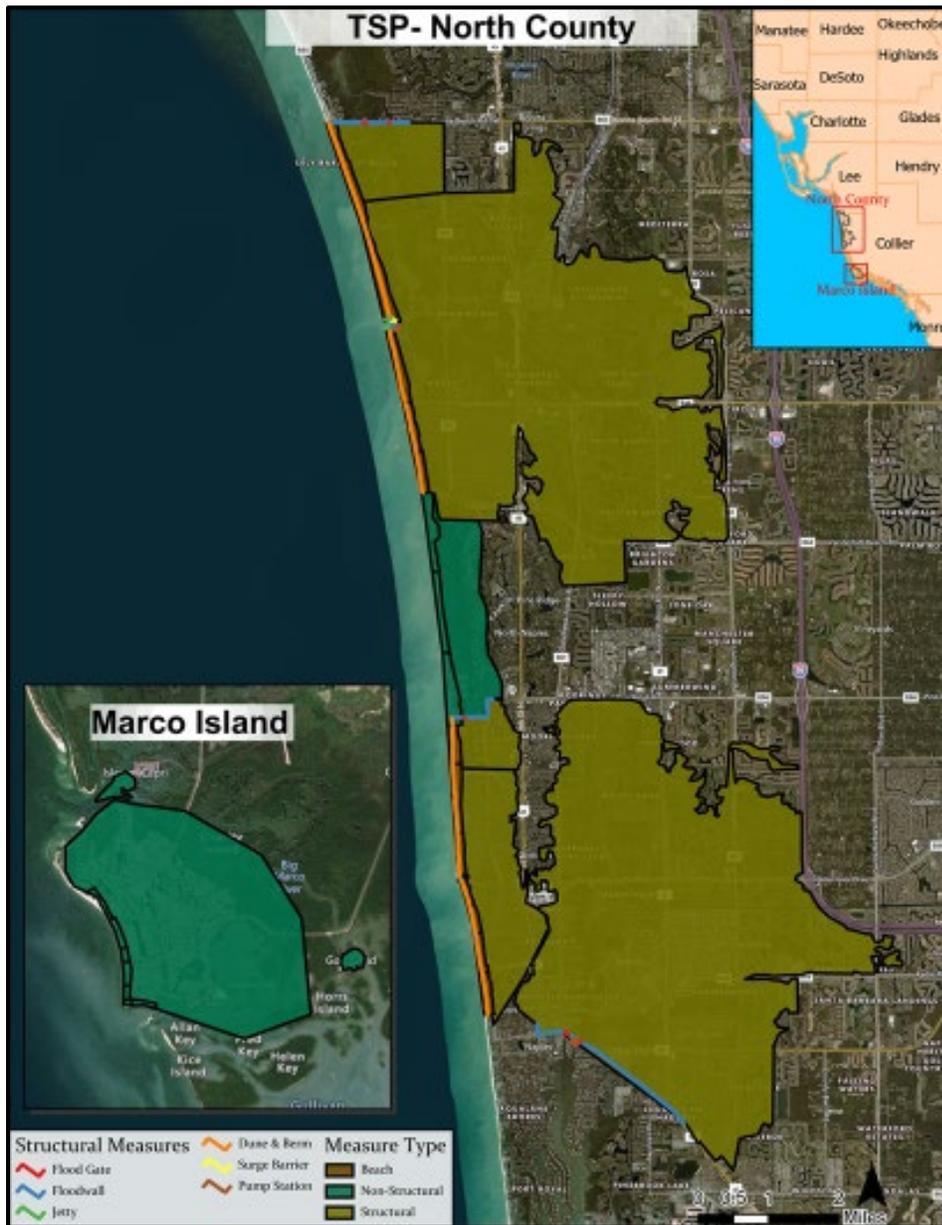
### **5.0 OVERVIEW AND DESCRIPTION OF PROJECT IMPACTS AND MITIGATION IMPACT ANALYSIS**

Figure 5-1 provides a summary overview of the proposed beach nourishment sites and proposed structural project features for the Alternative 4A. The structural features would include the following:

- Bonita Beach Road: surge barriers and floodwalls
- Wiggins Pass: jetties, surge barrier, concrete structures in the dune/beach, and a pump station
- Doctor’s Pass: surge barrier, a pump station, concrete structures in the beach
- Tamiami Trail: surge barriers, a pump station, and floodwalls
- Seagate Drive: sluice (tidal) gate and floodwalls

\*additional pump stations may also be added/required for the project at any of the floodwall and surge barrier, and sluice gate sites; should these features be added the Environmental Mitigation Plan would be updated as needed. Please note that in addition to the beach nourishment areas planned and shown in Figure 1-4, additional beach nourishment may also be included between Planning Area 1-2 and south of Planning Area 3 in Planning Area 4 but is contingent upon further

evaluation and modeling. If any additional structural or nonstructural features are added mitigation needs would be required to be reevaluated.



**Figure 5-1. Summary overview of the Alternative 4A project features**

Nonstructural features would include elevations of residential structures, floodproofing of critical infrastructure and condos, and acquisition/demolition of residential structures and converting the acquired sites to green space or potentially parks.

Based on a review of recent hardbottom survey data collected by the Collier County from 2018-2019 (Collier County 2019) and a review of the Florida Fish and Wildlife Commission SAV habitat (2020) and the U.S. Fish and Wildlife Service National Wetlands Inventory geospatial data (2020), we would anticipate there to be impacts to hardbottom habitat, SAV, mangroves, dune vegetation

from, and sediment transport implementation of the Alternative 4A that would require compensatory mitigation.

The proposed beach nourishment and structural features of the water are those that would require onsite compensatory mitigation. Table 5-1 provides a summary of the estimated direct and indirect environmental impacts of Alternative 4A that would be anticipated to require compensatory mitigation for each project feature.

The impacts anticipated to require compensatory mitigation with implementation of Alternative 4A would be the following:

- Mangrove and SAV impacts from the construction, operation and maintenance of the proposed surge barrier located at the Bonita Beach Road;
- Hardbottom impacts from the proposed beach nourishment sites;
- Mangrove and hardbottom impacts from the construction, operation and maintenance of the proposed surge barrier and pump station located at the Wiggins Pass;
- Sediment transport impacts from the jetties proposed at the Wiggins Pass;
- Hardbottom impacts from the Doctor's Pass Surge Barrier;
- Mangrove impacts at the Tamiami Trail Floodwall;
- Mangrove impacts from the construction, operation, and maintenance of the Seagate Drive Sluice gate; and
- Vegetated dune impacts at the proposed beach nourishment sites.



## **DESCRIPTION OF WETLAND AND SAV IMPACTS REQUIRING MITIGATION**

### **Operation of the storm surge barriers and sluice gates**

Once constructed, the storm surge barriers and sluice gates would remain in the open position unless a storm is approaching or test or maintenance operations are being conducted. The frequency of necessary gate closures per year would be determined based on a defined storm event, but is estimated to be no more than approximately 10 times per year. Prior to the approach of the storm, the gates would be closed and would remain so for an average of five days at a time, over the course of the 50-year period of analysis. Once the event passes, the gates would be reopened and normal tidal flushing would be restored.

Closure of the surge barriers and sluice gate would temporarily block tidal flushing and potentially cause fluctuations in salinity, currents, and water circulation. Excess water would be pumped out from Wiggins Estuary and Naples Bay, in order to avoid flooding developed areas while the gates are closed. Drawing down the water level could also influence changes in temperature, nutrients, Dissolved Oxygen, currents, and water circulation. These changes would be temporary, and following opening of the surge barriers and sluice gate water quality conditions would eventually be anticipated to acclimate back to pre-storm conditions.

As noted, mangroves can tolerate a wide range of salinities well; as long as they do not exceed 90 parts per thousand. Reopening the gates and restoring tidal flushing following storms would

restore water circulation, salinity, and currents; however, tidal wetlands in closest proximity to the structures may experience scour and siltation. For these reasons, we have found that there would likely be indirect as well as direct adverse effects on mangroves and SAV.

Based upon the conceptual and operational plans and these scientifically documented findings, we have made the following estimations of mangrove and SAV impacts.

### **Bonita Beach Road Floodwall and Surge Barriers**

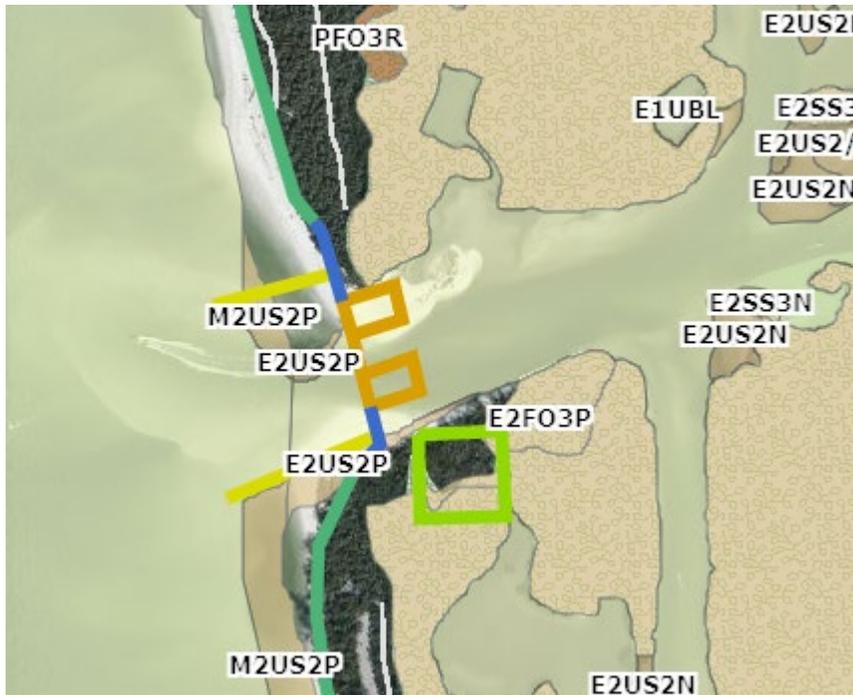
This location is at the northernmost end of Wiggins Estuary. Along the shoreline on the south side of the road, there is a small section of approximately 100 square feet of mangrove wetlands that would be directly and permanently adversely impacted by the footprint of the floodwall. Immediately south of proposed eastern sluice gate, there are approximately 6.6 acres of mangrove wetlands, which are mapped as, "E2FO3N" in Figure 5-2. The floodwall and surge barriers could cause a direct, adverse impact on an estimated 0.002-acre of mangroves. The floodwall and surge barriers could cause an indirect, adverse impact on an estimated 1.5 acres of this mangrove community nearby. There is also an SAV bed located immediately channelward of the mangrove area, for which there is an estimated 1.1-acre indirect, permanent, adverse effect. The SAV bed is shown in light green in Figure 5-2.

### **Wiggins Pass Inlet**

This location is at the mouth of Wiggins Estuary, shown in Figure 5-3. The storm surge barrier, concrete structures in the berm/dune, jetties, and pump station together would cause a direct permanent, adverse impact on an estimated 5.9 acres of mangrove wetlands. An additional estimated 2.7 acres of mangroves could be indirectly adversely affected by changes in currents, sediment transport, water circulation, and other potential hydrological alterations. Wiggins Pass would be the largest mangrove impact associated with this project.



**Figure 5-2. Bonita Beach Road Floodwall and Sluice Gates. Wetlands and Submerged Aquatic Vegetation located in the vicinity of. “E2FO3N” indicates mangrove wetlands, and light green indicates Submerged Aquatic Vegetation. (Source: USFWS National Wetland Inventory Map, 2020).**



**Figure 5-3. Wiggins Pass. Wetlands and SAV to be impacted at “E2FO3N” and “E2SS3N.” indicate mangrove wetlands (Source: USFWS National Wetland Inventory Map 2020).**

**Clam Pass and Clam Bay**

There would be no impacts to mangroves or SAV with the project features, however, mangrove mitigation may be conducted in this area to offset potential mangrove impacts.

**Doctors Pass/Venetian Bay**

A storm surge barrier is proposed at this location. However, there are no mapped wetlands or SAVs at this location and vicinity; therefore, there would be no anticipated direct or indirect effect to wetlands or SAVs at this location.

**Seagate Drive floodwall and sluice gate**

At this location, along the footprint of the floodwall, south of Seagate Road, there would be approximately 0.35 acres of direct impacts to mangrove wetlands, which are mapped as, “E2SS3N” in Figure 5-4. No other wetlands or SAVs are in close proximity, and therefore, there would be no anticipated indirect effect on them at this location.

**Tamiami Trail floodwall and sluice gate, at Naples Bay**

At this location, along the footprint of the floodwall, on the north side of Tamiami Trail, there would be approximately 0.1 acres of direct impacts to mangrove wetlands, which are mapped as, “E2FO3N” in Figure 5-5. Due to the proximity to the proposed wall, an additional 1.0 acre of

indirect adverse effects are estimated for the mangrove wetlands on the north side of the floodwall. Anticipated indirect effects would be changes in currents, sediment transport, water circulation, and other potential hydrological alterations.

### **Marco Island**

There would be no anticipated beach nourishment or structural features in this area but SAV mitigation may be conducted at the Marco Island.



**Figure 5-4. Seagate Drive Floodwall and Sluice Gate. Wetlands to be impacted at “E2SS3N”. (Source: USFWS National Wetland Inventory Map 2020).**

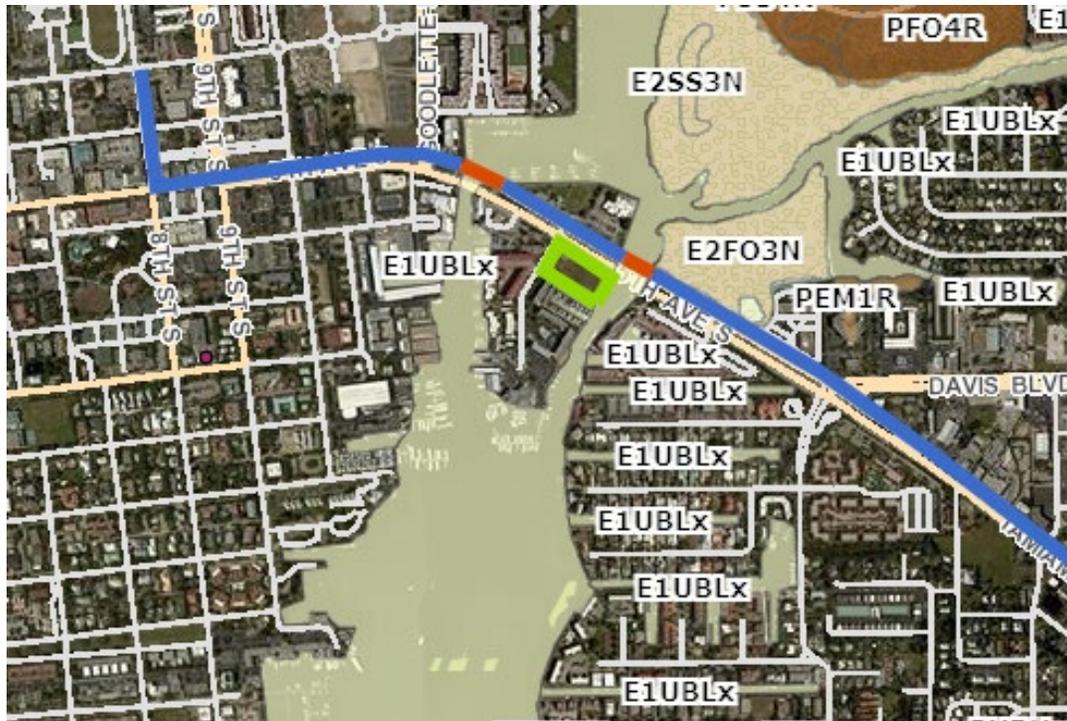


Figure 5-5. Tamiami Trail floodwall and sluice gates. Wetlands to be impacted at “E2FO3N”. (Source: USFWS National Wetland Inventory Map 2020).

Table 5-1. Estimated acreage of direct and indirect impacts with Alternative 4A

Description	Estimated Raw Impact Acreage (square feet) or (cubic yard)*	Estimated UMAM Mitigation Ratio	Resource Impacted	Estimated Mitigation Acreage Required with UMAM Multiplier (square feet)
Floodwall and Surge Barriers at Bonita Beach Road	98.66	2.50	Mangrove (Direct)	246.65
Floodwall and Surge Barriers at Bonita Beach Road - East Surge Barrier	66,895.30	2.50	Mangrove (Indirect)	167,238.25
Floodwall and Surge Barriers at Bonita Beach Road - East Surge Barrier	47,961.00	2.20	Seagrass (Indirect)	105,514.20

<b>Description</b>	<b>Estimated Raw Impact Acreage (square feet) or (cubic yard)*</b>	<b>Estimated UMAM Mitigation Ratio</b>	<b>Resource Impacted</b>	<b>Estimated Mitigation Acreage Required with UMAM Multiplier (square feet)</b>
<b>Barefoot Beach Vegetated Dune - Beach Nourishment</b>	15,661.68	2.50	Hardbottom (Indirect)	39,154.19
<b>Floodwall, Jetties, Pump Station, and Surge Barrier at Wiggins Pass</b>	257,140.20	2.50	Mangrove (Direct)	642,850.50
<b>Floodwall, Jetties, Pump Station, and Surge Barrier at Wiggins Pass</b>	118,070.00	2.50	Mangrove (Indirect)	295,175.00
<b>Floodwall, Jetties, Pump Station, and Surge Barrier at Wiggins Pass</b>	217,800.00	2.50	Hardbottom (Indirect)	544,500.00
<b>Jetties at Wiggins Pass</b>	865,668.57	1.00	Benthic Habitat/Sediment Transport*	865,668.57
<b>Wiggins Pass Vegetated Dune - Beach Nourishment</b>	6,218.39	2.5	Hardbottom (Indirect)	15,545.97
<b>Doctor's Pass Surge Barrier</b>	217,800.00	2.5	Hardbottom (Indirect)	544,500.00
<b>Vanderbuilt Vegetated Dune - Beach Nourishment</b>	8,086.19	2.5	Hardbottom (Indirect)	20,215.46
<b>Pelican Bay Vegetated Dune - Beach Nourishment</b>	10,937.74	2.5	Hardbottom (Indirect)	27,344.36
<b>Clam Pass Vegetated Dune - Beach Nourishment</b>	3,533.27	2.5	Hardbottom (Indirect)	8,833.17

<b>Description</b>	<b>Estimated Raw Impact Acreage (square feet) or (cubic yard)*</b>	<b>Estimated UMAM Mitigation Ratio</b>	<b>Resource Impacted</b>	<b>Estimated Mitigation Acreage Required with UMAM Multiplier (square feet)</b>
<b>Park Shore Vegetated Dune - Beach Nourishment</b>	12,015.33	2.5	Hardbottom (Indirect)	30,038.31
<b>Naples Vegetated Dune - Beach Nourishment (Planning Area 3)</b>	5,815.05	2.5	Hardbottom (Indirect)	14,537.63
<b>Naples Vegetated Dune - Beach Nourishment (Planning Area 4)</b>	2,511.04	2.5	Hardbottom (Indirect)	6,277.60
<b>Gordon Pass</b>	2,563.91	2.5	Hardbottom (Indirect)	6,409.78
<b>Floodwall at Tamiami Trail</b>	4,263.70	2.5	Mangrove (Direct)	10,659.25
<b>Floodwall at Tamiami Trail</b>	43,560.00	2.5	Mangrove (Indirect)	21,780.00
<b>Barefoot Beach Vegetated Dune</b>	369939.5634	1.03	Vegetated Dune (Direct)	381,037.75
<b>Clam Pass Vegetated Dune</b>	99822.4105	1.03	Vegetated Dune (Direct)	102,817.08
<b>Marco Island Vegetated Dune</b>	1514802.318	1.03	Vegetated Dune (Direct)	1,560,246.39
<b>Naples Vegetated Dune - Beach Nourishment (Planning Area 3)</b>	325143	1.03	Vegetated Dune (Direct)	334,897.29
<b>Naples Vegetated Dune - Beach Nourishment (Planning Area 4)</b>	407340	1.03	Vegetated Dune (Direct)	419,560.20

<b>Description</b>	<b>Estimated Raw Impact Acreage (square feet) or (cubic yard)*</b>	<b>Estimated UMAM Mitigation Ratio</b>	<b>Resource Impacted</b>	<b>Estimated Mitigation Acreage Required with UMAM Multiplier (square feet)</b>
<b>Gordon Pass</b>	69500	1.03	Vegetated Dune (Direct)	71,585.00
<b>Park Shore Vegetated Dune</b>	450458.0188	1.03	Vegetated Dune (Direct)	463,971.76
<b>Pelican Bay Vegetated Dune</b>	245079.7517	1.03	Vegetated Dune (Direct)	252,432.14
<b>Vanderbilt Vegetated Dune</b>	204754.3086	1.03	Vegetated Dune (Direct)	210,896.94
<b>Wiggins Pass Vegetated Dune</b>	165599.9501	1.03	Vegetated Dune (Direct)	170,567.95
<b>Floodwall and Gate at Seagate Drive</b>	2699.285926	1.03	Vegetated Dune (Direct)	2,780.26
<b>Floodwall and Gates at Bonita Beach Road</b>	485.281466	1.03	Vegetated Dune (Direct)	499.84
<b>Floodwall at Wiggins Pass</b>	1645.052862	1.03	Vegetated Dune (Direct)	1,694.40
<b>Floodwalls and Surge Barrier at Doctors Pass</b>	2126.674945	1.03	Vegetated Dune (Direct)	2,190.48
<b>Seagate Drive Sluice Gate</b>	15246	2.5	Mangrove (Direct)	38115

\*presence, abundance, diversity, and extent of protected resources would be determined during the PED Phase of the project when detailed, site-specific surveys would be conducted; additional protected resources may need to be added to Table 5-1 depending on the result of site-specific surveys; UMAM based on desktop analysis that would be verified during the PED Phase

## **6.0 COMPENSATORY WETLAND MITIGATION FUNCTIONAL ANALYSIS AND MITIGATION REQUIREMENTS**

### **Hardbottom/Coral, SAV, and Mangrove Mitigation Functional Analysis and Mitigation Requirements**

The Uniform Mitigation Assessment Model (UMAM) would be used to evaluate the estimated functional loss of hardbottom habitat, SAV, mangroves, and dune vegetation associated with implementation of the Preferred Alternative, Alternative 4A. This model is used to determine the functional loss of habitat and required mitigation ratios and associated required mitigation acreages. For the sediment transport mitigation a 1:1 mitigation would be required as the goal would be to only mitigate direct impact areas so as not to disturb sediment transport in additional areas; therefore the UMAM would not be applied for the sediment transport mitigation.

The UMAM is currently approved for use throughout the State of Florida by the U.S. Army Corps of Engineers ECO-PCX and is required for wetland impact and mitigation sites by the State of Florida per 62-345 Florida Administrative Code. Therefore, the UMAM is applied in a wide variety of wetland habitat types throughout the State of Florida. The UMAM is well suited for evaluating a suite of impact and potential mitigation sites, including the preservation, enhancement, restoration, and creation of wetlands, as well as the evaluation and use of mitigation sites, and it provides a framework for standardized wetland assessment methodology. The impact or mitigation site is assessed via a qualitative description of the site and a quantification of the wetland function at the site. For the wetland function quantification, sites are evaluated in three categories and scored numerically from 0 to 10 (where 10 indicates a minimally impaired system). The first category, Location and Landscape Support, assess the surrounding landscape within which the system operates. The second examines the Water Environment, including an assessment of hydrology and water quality. The third category assess vegetation and structural habitat, for areas with plant cover, and benthic and sessile communities, for areas with a submerged benthic community.

The *UMAM Uniform Mitigation Assessment Method Training Manual* (Bardi et al. n.d.) provides a detailed guide of the UMAM concept and methodology and explains how to compile all of the data/information needed to perform the UMAM, how to document the standardized forms for the UMAM, and how to perform the necessary calculations to complete the UMAM functional analysis to quantify the habitat value of impact and mitigation sites.

For this phase (feasibility phase) of the project we have conducted a desktop UMAM analysis and the results of this analysis are provided in Table 5-1 along with required mitigation acreages of onsite compensatory mitigation following the desktop UMAM analysis. For this desktop analysis we assumed the mitigation site would be of the same functional value as the impact site.

## **7.0 POTENTIAL MITIGATION STRATEGIES/ALTERNATIVES**

This section describes the mitigation alternatives that were evaluated that serve to meet the mitigation objectives. Based on a comprehensive search and discussions with state and federal regulatory agencies, there are no mitigation banks or in-lieu fee funds available for nearshore hardbottom/coral, SAV, or mangrove impacts in the servicing area. Therefore, while we

considered banks and in-lieu fee funds as potential mitigation alternatives these were rapidly screened out due to lack of availability. Therefore, we anticipated all hardbottom/coral, SAV, and mangrove mitigation to be onsite compensatory mitigation. However, this would be reinvestigated during the PED Phase of the project. For the sediment transport mitigation, sediment redistribution would be limited solely to the impact sites. For the dune vegetation mitigation sites it is most appropriate to plant them directly at the impact sites following the dune construction as this would be the preferred way to offset the temporary functional loss and would also be needed to ensure stabilization of the dune/berm profile.

## **8.0 SITING OF ONSITE COMPENSATORY MITIGATION SITES**

The siting of onsite compensatory mitigation sites would be finalized during the PED Phase of the project when site-specific survey data is available to assess bottom conditions, hydrology, water quality, and presence of other protected species (to avoid potential impacts to other protected species). Wherever feasible, mitigation sites would be sited within approximately five miles of the impact site to offset impacts as close as possible to the impact site.

Appropriate real estate protections of the mitigation site would be required to determine the protection and perpetuity of the site over time. Designs for the mitigation site would be completed during the PED Phase of the project. The actual location, acreage, and mitigation methodology may vary depending on the final development of the project and mitigation site designs that will occur during the PED Phase of the project.

The reef would be marked (if required) with a U.S. Coast Guard approved sign to mitigate for any potential impacts to navigation.

### **Hardbottom Habitat/Coral Habitat Monitoring and Adaptive Management**

A topographic survey and bathymetric survey would be conducted prior to reef placement to assess water depths and bottom conditions in the project area. It is anticipated that all mitigation sites would occur on state-owned bottom. Following the initial reef placement, an additional topographic survey would be conducted to ensure the proper placement of the reef materials and to ensure the vertical reef requirements have been met. Monitoring would be conducted post-construction for a minimum period of five years to assess coral species/diversity, abundance and size. Monitoring would be conducted at the first year, the third year, and fifth year post-construction. Table 8-1 provides the goals and success performance metrics for the hardbottom/coral mitigation site.

**Table 8-1. Goals and success performance metrics for the hardbottom/coral mitigation site**

<b>Goals</b>	<b>Success Performance Metric Criteria</b>
Structural Goals	Reef spatial extent, and reef height should remain neutral.
Functional Goals	Average coral abundance (count), coral species diversity, and average coral size at mitigation site to meet or exceed average metrics at impact site

The first five years of a hardbottom/coral mitigation project is crucial to its success. Reef evaluations would be conducted immediately following initial reef installation, and at year one, year two, year three and year five post-reef construction. Monitoring could be conducted using a variety of methods of measurement including acoustic mapping, sampling by quadrat, ROV and/or by diver sampling.

Monitoring will involve taking sufficient samples at each mitigation site to estimate average coral abundance, diversity, size as well as reef height, and reef spatial extent. Post construction surveys would provide confirmation by acoustic mapping of reef height and areal extent before contractors demobilize the site. Adaptive management of reef height would occur (if needed) to ensure proper height and coverage at initial reef installation.

If unexpected high rates of mortality trigger adaptive management due to negative findings of a monitoring event at year one, three, or six, the reef will be evaluated for disease status. A subset of corals in various size classes would be assessed for disease. Table 8-2 summarizes the anticipated monitoring parameters, methods, and frequency for the hardbottom/coral mitigation site.

**Table 8-2. Hardbottom/Coral Monitoring Parameters, Methods, and Frequency**

<b>Monitoring Element</b>	<b>Data Recorded</b>	<b>Methods</b>	<b>Monitoring Objective</b>	<b>Sampling Frequency</b>
Reef Spatial Extent and Height	Substrate quality/unit	Acoustic Mapping & field verification	Assess existing bottom conditions. Areal extent of substrate and reef height	Post Construction, Year 1 Year 2 Year 3 Year 5

Monitoring Element	Data Recorded	Methods	Monitoring Objective	Sampling Frequency
Coral demographics	Corals abundance, species diversity, and size data	Diver and/or ROV	Assess average relative coral abundance, diversity, and size	Post Construction, Year 1 Year 2 Year 3 Year 5
Coral disease status	Prevalence and intensity of coral diseases	Laboratory assay	Determine health of corals, document any further development of disease resistance development over time	Evaluate after Year 1, 2, 3 & 5 monitoring events as an adaptive management strategy for unexpected high mortality rates only.

### **Hardbottom Habitat/Coral Adaptive Management**

Potential adaptive management of the hardbottom/coral mitigation site could include one or more of the following activities:

- Transplantation of corals if coral abundance or biodiversity metrics are not met;
- Additional placement or movement of reef structures if they have shifted due to a storm event or otherwise sustain damage;
- Removal of biofouling (algae, non-target invertebrates, etc.) if coral abundance or size metrics are not met;
- Sample corals for disease or conduct water quality monitoring if there is an unusual mortality event or if it is otherwise unknown if we are not meeting the coral metrics;
- Removal of sediment; and
- Installation of weight-displacing matting if reef structures sink due to bottom type and do not meet performance metrics.

**Reports** – Monitoring staff shall record and create datasets of the required data for the species and reef structural metrics at the mitigation site, and analyze the data. Compliance monitoring reports shall be provided after each monitoring event years one, three, and five post-construction.

The survey monitoring report will include a general description of the site, site maps identifying stations where monitoring transects or points were taken, and all raw data from all samples taken and subsequently analyzed in addition to the following elements:

- Summary of all activities completed during the monitoring year;
- Description of monitoring methods;
- Number and location of samples;
- Physical reef metrics (location, reef profile – height and extent)
- Coral species presence, abundance (count), diversity, and size
- Standard error of the mean (SE) calculations based on monitoring data;
- Listing of additional species observed;
- Discussion of data collected, methods, results and conclusions to support the number of samples necessary for next monitoring cycle;
- Comparison of site conditions from the previous monitoring year (when possible).
- Any recommended adaptive management if metrics are not being met

**SAV Monitoring and Adaptive Management**

Prior to selection of mitigation sites, previous SAV data, depth data, bottom type, hydrology, and water quality data would be examined to assess relative suitability of sites for SAV mitigation. Water clarity conditions would be assessed prior to planting efforts to ensure appropriate conditions at the mitigation site. Post-SAV planting, monitoring would involve taking sufficient samples at the site to accurately estimate SAV coverage by species and depth. A minimal standard error of the mean (SE), an estimate of sampling precision, is desirable so that the estimate of SAV coverage is accurate. The SE should be no greater than 15% of the mean. SE larger than 15% of the mean indicates the precision is poor and additional samples should be taken in order to have a higher degree of confidence in the population estimate derived from the survey. A number of transects or point samples throughout the planted area at different depths would be required in order to accomplish this objective. Water quality monitoring would also be required. As part of the monitoring, data sonde would be deployed within the restored SAV bed. These sonde would be able to collect data on a daily basis on, at the minimum, the following parameters: salinity, temperature, depth, and turbidity/clarity. Other parameters, such as chlorophyll, and Dissolved Oxygen are desirable but not required. Table 8-3 summarizes the goals and success performance metrics for the SAV mitigation site.

**Table 8-3. Goals and success performance metrics for the SAV Mitigation Site**

Goals	Success Performance Metric Criteria
Functional Goals	Attain SAV species density biodiversity reaching or exceeding that of impact site; planted SAV coverage at a minimum of 15%

**Post-planting Survey and Adaptive Management** – A post-planting survey at the SAV mitigation site would be conducted following the initial planting. Sites would be required to have

at least 15% SAV coverage. The areas devoid of SAV would be required to be replanted. Monitoring and adaptive management (as needed) would occur for a period of five years following the initial planting year to ensure project success. Adaptive management and monitoring to assess seagrass expanse, abundance, species diversity, and relative biomass would be conducted for a five year period after the year of the initial SAV planting. Table 8-4 summarizes the proposed SAV monitoring parameters, techniques, and timeline for the mitigation project.

**Table 8-4. SAV Monitoring Parameters, Methods, and Frequency**

<b>Monitoring Element</b>	<b>Data Recorded</b>	<b>Methods</b>	<b>Monitoring Objective</b>	<b>Sampling Frequency</b>
% coverage of each SAV species by area and depth	% SAV coverage, SAV species	Diver and/or ROV survey	Assess SAV presence, species diversity, % cover, and composition	Post Construction, Year 1 Year 3 Year 5
Photographs of SAV restoration site	Photographic record	Diver and/or ROV survey	Additional record collection	Year 1 Year 3 Year 5

**SAV Adaptive Management**

Potential adaptive management of the SAV mitigation site could include one or more of the following activities:

- Attempt a different type of mitigation strategy such as harvesting and planting of seeds instead of adult plants;
- Movement to a different mitigation site;
- Installation of predation-deterrent devices; and
- Sample SAV for disease or conduct additional water quality monitoring if there is an unusual mortality event or if it is otherwise unknown if we are not meeting the SAV metrics.

**Reports** – The Contractor shall record and create datasets of the required data for the species within the planted area, and analyze the data.

The survey monitoring report will include a general description of the site, site maps identifying photo stations where monitoring transects or points were taken, and all raw data from all samples taken and subsequently analyzed in addition to the following elements:

- Summary of all activities completed during the monitoring year;
- Description of monitoring methods;

- Number and location of samples;
- Properly labeled photographs of samples;
- % coverage of each SAV species by area and depth
- Standard error of the mean (SE) calculations based on monitoring data;
- Listing of additional species observed;
- Discussion of data collected, methods, results and conclusions to support the number of samples necessary for next monitoring cycle;
- Comparison of site conditions from the previous monitoring year (when possible).
- Any recommended adaptive management if metrics are not being met.

### **Mangrove Monitoring and Adaptive Management**

Prior to selection of mitigation sites previous mangrove data, depth data, site elevation, bottom type, hydrology, and water quality data (if available) would be examined to assess relative suitability of sites for mangrove mitigation. Elevation data via a topographic survey would be required to be collected at mangrove reference sites and also at the proposed mangrove mitigation site prior to planting. Post mangrove planting, annual monitoring would involve taking sufficient samples at the site to accurately estimate mangrove coverage, density, as well as any potential cover by invasive/exotic vegetation. Monitoring would also include monitoring of elevation/water depths to ensure site stability and suitable conditions over time for mangroves. Most monitoring parameters (with the exception of elevation and water depth) would be conducted for a period of five years post construction assuming all performance metric criteria is met for a consecutive period of three years.

A minimal standard error of the mean (SE), an estimate of sampling precision, is desirable so that the estimate of SAV coverage is accurate. The SE should be no greater than 15% of the mean. SE larger than 15% of the mean indicates the precision is poor and additional samples should be taken in order to have a higher degree of confidence in the population estimate derived from the survey. A number of transects or point samples throughout the planted area would be required in order to accomplish this objective. Table 8-5 summarizes the goals and success performance metrics for the mangrove mitigation site. For monitoring parameters, methods, and frequency please refer to Table 8-6.

**Table 8-5. Goals and success performance metrics for the mangrove mitigation site**

Goals	Success Performance Metric Criteria
Functional Goals	<ul style="list-style-type: none"> <li>• Mangrove species density biodiversity reaching or exceeding that of impact site; planted mangrove coverage at a minimum of 80%.</li> <li>• Invasive/exotic species coverage is limited to less than 2%.</li> <li>• Elevations are stable and suitable for mangrove survival over time and are within 0.2 feet of median mangrove reference locations.</li> <li>• Water depths are suitable for mangrove restoration and within the water depth range of the mangrove reference sites (or other published reference site data) at least 80% of the time.</li> <li>• Performance metrics have been met for a period of three consecutive years.</li> </ul>

**Table 8-6. Monitoring Parameters, Methods, and Frequency**

Monitoring Element	Data Recorded	Methods	Monitoring Objective	Sampling Frequency
% coverage of mangroves	% mangrove coverage, mangrove species	Transect Survey/Quadrant	Document mangrove presence, species diversity, % cover, and composition	Annually, post construction for five consecutive years
% coverage of invasive exotics	% coverage of invasive exotics	Transect Survey/Quadrant	Document coverage of Category I and II invasive exotic plant species, pursuant to the most current list established by the Florida Exotic Pest Plant Council at <a href="http://www.fleppc.org">http://www.fleppc.org</a>	Annually, post construction for five consecutive years
Density	Count of mangrove stems	Transect Survey/Quadrant	Document 80% density of native mangrove reference locations	Annually, post construction for five consecutive years
Elevation	Topographic Survey	Topographic Survey	Reference data points from reference sites would be collected in the vicinity of the mitigation sites; mangrove elevations	Prior to Construction; Post Construction Year 1; additional

Monitoring Element	Data Recorded	Methods	Monitoring Objective	Sampling Frequency
			must be within 0.2 feet of reference median mangrove elevation sites	monitoring required if not meeting metric at Year 1
Water Depth	Water Level Stage Gage	Water Level Stage Gage	Assess approximate monthly average water elevation in mangrove restoration area	Monthly, post construction for five consecutive years
Photographs of mangrove mitigation site	Photographic record	Transect Survey	Additional record collection	Annually, post construction for five consecutive years

**Post-planting Survey and Adaptive Management** – A post-planting survey at the mangrove mitigation site would be conducted following the initial planting. Sites would be required to have at least 80% mangrove coverage and less than 2% exotic/invasive vegetation species coverage. Mangrove density would be required to approximate the reference locations and show densities of at least 80% of those at the reference locations. Elevation and water depth would also be monitored post construction to ensure long-term suitability of mangrove restoration sites. Photographic records of monitoring sites would also be collected and provided in annual reports to document site conditions and evidence of planting success/failure and other related metrics. Monitoring and adaptive management (as needed) would occur annually for a minimum period of five years following the initial planting year to ensure project success. Adaptive management and monitoring to assess mangrove expanse, abundance, density, and species diversity would be conducted for a five year period after the year of the initial mangrove planting.

**Mangrove Adaptive Management**

Potential adaptive management of the mangrove mitigation site could include one or more of the following activities:

- Additional mangrove replantings due to storm damage, natural mortality, or other types of damage;
- Invasive species control;
- Temporary protection of seedlings from surge;
- Movement to a more suitable mitigation site; and
- Potentially regrading of the site or adding clean sand fill if the elevation is not suitable for mangrove restoration.

**Reports** – Monitoring staff shall record and create datasets of the required data for the species within the planted area, and analyze the data.

The survey monitoring report will include a general description of the site, site maps identifying photo stations where monitoring transects or points were taken, and all raw data from all samples taken and subsequently analyzed in addition to the following elements:

- Summary of all activities completed during the monitoring year;
- Description of monitoring methods;
- Number and location of samples;
- Properly labeled photographs of samples;
- % coverage of mangroves any an invasive/exotic species by area
- Standard error of the mean (SE) calculations based on monitoring data;
- Topographic survey results including elevations of reference mangrove sites and mitigation sites
- Elevation gauge data;
- Listing of additional species observed;
- Discussion of data collected, methods, results and conclusions to support the number of samples necessary for next monitoring cycle;
- Comparison of site conditions from the previous monitoring year (when possible).
- Any recommended adaptive management methods and results if metrics are not being met.

### **Dune Vegetation Monitoring and Adaptive Management**

Dune vegetation mitigation would consist of planting native dune vegetation in approximate coverage and species diversity of the existing dune system that would be impacted by the beach nourishment. Mitigation would be required for every dune construction event throughout the life cycle of the project whenever there is an impact to dune vegetation. Post vegetative dune planting, annual monitoring would involve taking sufficient samples at the site to accurately estimate vegetation coverage, density, as well as any potential cover by invasive/exotic vegetation. Monitoring would be conducted for a period of five years post construction assuming all performance metric criteria is met for a consecutive period of three years.

A minimal standard error of the mean (SE), an estimate of sampling precision, is desirable so that the estimate of SAV coverage is accurate. The SE should be no greater than 15% of the mean. SE larger than 15% of the mean indicates the precision is poor and additional samples should be taken in order to have a higher degree of confidence in the population estimate derived from the survey. A number of transects or point samples throughout the planted area would be required in order to accomplish this objective. Table 8-7 summarizes the goals and success performance metrics for the mangrove mitigation site. For monitoring parameters, methods, and frequency please refer to Table 8-8.

**Table 8-7. Goals and success performance metrics for the dune vegetation mitigation site**

Goals	Success Performance Metric Criteria
Functional Goals	<ul style="list-style-type: none"> <li>• Dune vegetation species density biodiversity reaching or exceeding that of impact site; planted dune vegetation coverage at a minimum of 80%.</li> <li>• Invasive/exotic species coverage is limited to less than 2%.</li> <li>• Performance metrics have been met for a period of three consecutive years.</li> </ul>

**Table 8-8. Monitoring Parameters, Methods, and Frequency**

Monitoring Element	Data Recorded	Methods	Monitoring Objective	Sampling Frequency
% coverage of dune vegetation	% dune vegetation coverage, dune vegetation species	Transect Survey/Quadrant	Document dune vegetation presence, species diversity, % cover, and composition	Annually, post construction for five consecutive years
% coverage of invasive exotics	% coverage of invasive exotics	Transect Survey/Quadrant	Document coverage of Category I and II invasive exotic plant species, pursuant to the most current list established by the Florida Exotic Pest Plant Council at <a href="http://www.fleppc.org">http://www.fleppc.org</a>	Annually, post construction for five consecutive years
Density	Count of dune vegetation stems	Transect Survey/Quadrant	Document 80% density of native dune vegetation reference locations	Annually, post construction for five consecutive years
Photographs of dune vegetation mitigation site	Photographic record	Transect Survey	Additional record collection	Annually, post construction for five consecutive years

**Post-planting Survey and Adaptive Management** – A post-planting survey at the dune vegetation site would be conducted following the initial planting. Sites would be required to have at least 80% dune vegetation coverage and less than 2% exotic/invasive vegetation species

coverage. Dune vegetation density would be required to approximate the reference locations and show densities of at least 80% of those at the reference locations. Photographic records of monitoring sites would also be collected and provided in annual reports to document site conditions and evidence of planting success/failure and other related metrics. Monitoring and adaptive management (as needed) would occur annually for a minimum period of five years following the initial planting year to ensure project success. Adaptive management and monitoring to assess dune vegetation expanse, abundance, density, and species diversity would be conducted for a five year period after the year of the initial dune vegetation planting.

### **Dune Vegetation Adaptive Management**

Potential adaptive management of the dune vegetation mitigation site could include one or more of the following activities:

- Additional dune vegetation replantings due to storm damage, natural mortality, or other types of damage;
- Planting in higher densities; and/or
- Invasive species control.

**Reports** – Reports would be provided that record and create datasets of the required data for the species within the planted area, and analyze the data.

The survey monitoring report will include a general description of the site, site maps identifying photo stations where monitoring transects or points were taken, and all raw data from all samples taken and subsequently analyzed in addition to the following elements:

- Summary of all activities completed during the monitoring year;
- Description of monitoring methods;
- Number and location of samples;
- Properly labeled photographs of samples;
- % coverage of dune vegetation any an invasive/exotic species by area
- Standard error of the mean (SE) calculations based on monitoring data;
- Listing of additional species observed;
- Discussion of data collected, methods, results and conclusions to support the number of samples necessary for next monitoring cycle;
- Comparison of site conditions from the previous monitoring year (when possible).
- Any recommended adaptive management methods and results if metrics are not being met.

### **Sediment Transport Mitigation**

The proposed jetties at the Wiggins Pass would be anticipated result in adverse impacts to the existing sediment transport within the nearshore ROI and sediment transport would be anticipated to be adversely affected north and south and potentially west of the jetties and may also impact the beach berm profile north and south of the jetties. Mitigation would be required to redistribute the altered distribution of sediment.

Sediment transport mitigation would consist of conducting periodic bathymetric surveys north, south, and west of the proposed jetties and along the beach nourishment nearshore areas and conducting topographic surveys along the nourished beach profile at regular intervals to assess potential sediment transport impacts and assess the need for sediment redistribution.

The beach berm design topographic profile for Alternative 4A and existing conditions of the bathymetry north, south, and west of the jetties and along the Collier County nearshore areas (prior to construction) would serve as the topographic and bathymetric baseline (target) profiles for the purposes of the sediment transport mitigation.

Hydraulic cutterhead dredge with pipeline would be used to redistribute the sediment following the results of the bathymetric and topographic surveys as needed. It is assumed that over the 50-year lifetime of the project approximately eight bathymetric and topographic surveys and sediment redistribution events would occur to offset the sediment transport impacts of the jetties. However, this could potentially flux and would be dependent on site conditions and the magnitude and frequency of potential storm conditions.

For the purposes of the sediment transport mitigation, a mitigation ratio of 1:1 would be implemented as this is most appropriate to offset the functional impacts. The estimated mitigation quantity of the sediment transport mitigation is provided in Table 5-1.

Table 8-9 summarizes the goals and success performance metrics for the sediment transport mitigation. For monitoring parameters, methods, and frequency please refer to Table 8-10.

**Table 8-9. Goals and success performance metrics for the sediment transport mitigation**

Goals	Success Performance Metric Criteria
Functional Goals	<ul style="list-style-type: none"> <li>• Sediment profile is within +/- 0.5 feet of the baseline (target) profile</li> <li>• Sediment transport performance metrics are met following each beach renourishment</li> </ul>

**Table 8-10. Monitoring Parameters, Methods, and Frequency**

Monitoring Element	Data Recorded	Methods	Monitoring Objective	Sampling Frequency
Geospatial sediment profile (following initial beach nourishment event)	Bathymetric sediment profile in NAVD88; geospatial topographic beach profile in NAVD88	Bathymetric survey/ Topographic Transect Survey	Sediment profile in NAVD88 is +/-0.5 feet of the baseline (target) profile	Bathymetric survey would be conducted prior to project construction and following each renourishment event; topographic

Monitoring Element	Data Recorded	Methods	Monitoring Objective	Sampling Frequency
				surveys would be conducted following each renourishment

**Post-Sediment Transport Survey and Adaptive Management** – A bathymetric survey of the nearshore areas north, south, and west of the jetties and along the beach nourishment areas would be conducted prior to the project construction to provide baseline data. Following renourishment cycles bathymetric and topographic surveys would be conducted to identify any potential sites in need of sediment transport mitigation.

**Sediment Transport Adaptive Management**

Potential adaptive management of the beach profile could potentially include one or more of the following activities:

- Additional redistribution of sand utilizing hydraulic cutterhead dredge and pipeline; and
- Use of onshore construction equipment to regrade the beach profile.

**Reports** – Reports would be provided that record and create datasets of the topographic survey data and post-survey results.

The survey monitoring report will include a general description of the beach profile, collected geospatial beach survey topographic data, and whether the target beach/profile elevation is being achieved throughout the beach nourishment and would include the following:

- Summary of all activities completed during the monitoring year;
- Description of monitoring methods;
- Number and location of samples;
- Comparison of site conditions from the baseline topographic data; and
- Any recommended adaptive management methods and results if metrics are not being met.

**9.0 RECOMMENDED MITIGATION PLAN ALTERNATIVE AND JUSTIFICATION OF THE SELECTED MITIGATION PLAN ALTERNATIVE**

During the PED Phase of the project detailed site investigation surveys and UMAM site investigations would be conducted to determine the type and quantify of the required mitigation for the project. In addition, potential mitigation banks and in-lieu fee funds available would be reinvestigated as well as a cost assessment to ensure that the most appropriate mitigation alternative is selected.

## 10.0 COST SHARE OF RECOMMENDED MITIGATION PLAN ALTERNATIVE

In accordance with the cost share provisions in Section 103 of the Water Resources Development Act (WRDA) of 1986, as amended (33 U.S.C. 2213), project design and implementation are cost shared 65% federal and 35% non-federal.

## 11.0 PROJECTED LERRD NEED OF COMPENSATORY MITIGATION

Because the mitigation would be conducted on state-owned bottom, there would be no anticipated LERRD needs for the potential onsite compensatory mitigation sites. Some minor labor costs of the real estate USACE staff would be required to verify and document real estate requirements of the mitigation portions of the project.

## 12.0 REFERENCES

Bardi, E., Brown, M.T., Reiss, K.C., Cohen, M.J. n.d. *UMAM Uniform Mitigation Assessment Method Training Manual* Retrieved from.

[http://sfrc.ufl.edu/ecohydrology/UMAM\\_Training\\_Manual\\_ppt.pdf](http://sfrc.ufl.edu/ecohydrology/UMAM_Training_Manual_ppt.pdf)

Collier County. 2019. Results of hardbottom survey data collected in offshore hardbottom habitat for Collier County.

Florida Fish and Wildlife Conservation Commission. 2020 (last date updated). Submerged Aquatic Vegetation geospatial data mapped from sources ranging from 1987-2018. Retrieved from <http://geodata.myfwc.com/datasets/seagrass-habitat-in-florida?geometry=-81.885%2C25.944%2C-81.588%2C25.998>.

U.S. Fish and Wildlife Service (USFWS). 2020. U.S. Fish & Wildlife Service, National Wetlands Inventory Publication geospatial data.

Approved by:

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Susan Layton

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July 1, 2020

U.S. Army Corps of Engineers, Norfolk District

Chief, Planning and Policy Branch

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# **COLLIER COUNTY COASTAL STORM RISK MANAGEMENT PROJECT**

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## **Environmental Coordination**

**Norfolk District  
803 Front Street  
Norfolk, Virginia 23510**

**July 31, 2020**



**U.S. Army Corps  
of Engineers  
Norfolk District**

Dam and the city of Minneapolis. The implementation guidance to Sections 1168 and 1225 of WRDA 2018 may be found here: [https://www.usace.army.mil/Missions/Civil-Works/Project-Planning/Legislative-Links/wrda\\_2018/wrda2018\\_impguide/](https://www.usace.army.mil/Missions/Civil-Works/Project-Planning/Legislative-Links/wrda_2018/wrda2018_impguide/).

The USAF Disposition Study will analyze three types of alternatives at the USAF site: (1) The no action; (2) complete de-authorization by Congress of the Federal missions at the site and disposal of the properties; and (3) partial de-authorization and disposal. In addition, the study will examine opportunities to augment these three alternatives by considering measures which: (1) Preserve recreational opportunities; (2) enhance recreational opportunities; (3) preserve the health of the ecosystem; (4) enhance the health of the ecosystem; (5) maintain the benefits to the natural ecosystem; and (6) maintain the benefits to the human environment. The partial disposition alternative will maintain the flood control capability of the structure. If the Corps determines that Federal interest no longer exists, it must consider, and may recommend, removal of the project or separable elements of the project under existing authorities.

In accordance with the National Environmental Policy Act of 1969 (NEPA), an Environmental Assessment (EA) for this study is anticipated and will be prepared by the St. Paul District. The Corps is soliciting public comments on the scope of the EA and significant issues that should be addressed. The Corps will also accept comments related to potential new ownership and management measures.

The Disposition Study ends when the final report is transmitted to the Corps of Engineers' Headquarters Office for review and processing of recommendations. Complete and partial de-authorization would require Congressional Approval.

Two public scoping meetings are planned as discussed in the **DATES** section above. The purpose of these meetings is to discuss background of the study, identify the properties and structures that are the subject of the study, discuss the Federal disposal process, instruct parties on how to document their interest in future ownership, provide an opportunity to submit comments, and identify issues that should be addressed in the anticipated EA. While comments and questions will be entertained at the public meetings, the meetings will not be recorded nor minutes prepared. All formal comments will be requested to be provided in writing. Written comments

will be accepted at the meetings. Comments can also be submitted by the methods listed in the **ADDRESSES** section. Once the draft EA is complete and made available for review, there will be additional opportunity for public comment through the NEPA process.

Persons needing reasonable accommodations in order to attend and participate in the public scoping meetings should contact the person listed under the **FOR FURTHER INFORMATION CONTACT** section as soon as possible. In order to allow sufficient time to process requests, please make contact no later than one week before the public meeting.

Written comments, including email comments, should be sent to the Corps at the address given in the **ADDRESSES** section of this Notice. Comments should be specific and pertain only to the issues relating to the action and the anticipated EA. The Corps will include all comments in the project record.

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—will be publicly available. While you can ask us in your comment to withhold your personal identifying information from public review, the Corps cannot guarantee that we will be able to do so.

All submissions from organizations or businesses and from individuals identifying themselves as representatives or officials of organizations or businesses will be available for public review to the extent consistent with applicable law.

Dated: July 2, 2019.

**Kari Hauck,**

*Acting Deputy Chief, Regional Planning and Environment Division North.*

[FR Doc. 2019-15298 Filed 7-17-19; 8:45 am]

**BILLING CODE 3720-58-P**

## DEPARTMENT OF DEFENSE

### Department of the Army, Corps of Engineers

#### Collier County Hurricane and Storm Damage Reduction Feasibility Study

**AGENCY:** Department of the Army, U.S. Army Corps of Engineers, DoD.

**ACTION:** Notice of Intent/NEPA Scoping meeting and public comment period.

**SUMMARY:** In accordance with all applicable laws and regulations, the U.S. Army Corps of Engineers (USACE) plans to prepare a Feasibility Study

with an integrated Environmental Impact Statement (EIS) to evaluate environmental impacts from reasonable project alternatives to protect nearshore areas of Collier County, Florida, from hurricanes and other storms with their associated wind, storm surge, and coastal flooding.

**DATES:** Scoping comments may be submitted until August 23, 2019.

**ADDRESSES:** The public is invited to submit NEPA scoping comments to Mr. David Schulte, Department of the Army, U.S. Army Corps of Engineers, Norfolk District, Fort Norfolk, 803 Front St., Norfolk, VA 23510 or via email: [David.M.Schulte@usace.army.mil](mailto:David.M.Schulte@usace.army.mil). The project title and the commenter's contact information should be included with submitted comments.

**FOR FURTHER INFORMATION CONTACT:** David Schulte, (757) 201-7007.

**SUPPLEMENTARY INFORMATION:** Applicable laws and regulations are section 102(2)(C) of the National Environmental Policy Act (NEPA) of 1969, as amended, 42 U.S.C. 4321-4370, as implemented by the Council on Environmental Quality Regulations (40 CFR parts 1500-1508). The study authority is Section 4033 of the Water Resources Development Act of 2007 (Pub. L. 110-114), whereby the Secretary shall conduct a study to determine the feasibility of carrying out a project for hurricane and storm damage reduction and flood damage reduction in the vicinity of Vanderbilt, Park Shore, and Naples beaches, Collier County Florida. The primary problem is that existing protection is not adequate to prevent excessive storm damage and flooding from occurring during major coastal storms. Coastal flooding is worsening due to climate change induced sea level rise, which is also amplifying storm surge height. These trends are expected to continue and worsen due to sea level rise accelerating over time, a trend already observed in recent decades. Measures being considered include beach berms and dunes, floodwalls with gates, storm surge barriers, groins, seawalls, buyouts/ elevations of buildings, wet and/or dry flood-proofing of buildings, and nature-based features potentially including mangrove restoration, oyster and/or coral reef restoration, and seagrass restoration.

USACE is the lead federal agency and Collier County will be the non-federal sponsor for the study. The Study/EIS will address the primary problem of the increasing storm damage and flooding occurring and expected to increase in the area by studying all reasonable alternatives and determine the Federal

interest in cost-sharing for those alternatives.

As required by Council on Environmental Quality's Principles, Requirements and Guidelines for Water and Land Related Resources Implementation Studies all reasonable alternatives to the proposed Federal action that meet the purpose and need will be considered in the EIS. These alternatives will include no action and a range of reasonable alternatives for protecting the shoreline and structures in Collier County, Florida.

**Susan L. Conner,**

*Chief, Planning and Policy, Norfolk District USACE.*

[FR Doc. 2019-15296 Filed 7-17-19; 8:45 am]

**BILLING CODE 3720-58-P**

## DEPARTMENT OF DEFENSE

### Department of the Army, Corps of Engineers

#### Miami-Dade Back Bay Coastal Storm Risk Management Feasibility Study

**AGENCY:** Department of the Army, U.S. Army Corps of Engineers, DoD.

**ACTION:** Notice of Intent/NEPA Scoping meeting and public comment period.

**SUMMARY:** In accordance with all applicable laws and regulations, the U.S. Army Corps of Engineers (USACE) plans to prepare a Feasibility Study with an integrated Environmental Impact Statement (EIS) to evaluate environmental impacts from reasonable project alternatives to protect low-lying and flood-prone areas of Miami-Dade County, Florida, from hurricanes and other coastal storms with their associated wind, storm surge, and coastal flooding.

**DATES:** Scoping comments may be submitted until August 23, 2019.

**ADDRESSES:** The public is invited to submit NEPA scoping comments to Ms. Carissa Agnese, Department of the Army, U.S. Army Corps of Engineers, Norfolk District, Fort Norfolk, 803 Front St., Norfolk, VA 23510 or via email: [Carissa.R.Agnese@usace.army.mil](mailto:Carissa.R.Agnese@usace.army.mil). The project title and the commenter's contact information should be included with submitted comments.

**FOR FURTHER INFORMATION CONTACT:** Carissa Agnese, (757) 201-7752.

#### SUPPLEMENTARY INFORMATION:

Applicable laws and regulations are section 102(2)(C) of the National Environmental Policy Act (NEPA) of 1969, as amended, 42 U.S.C. 4321-4370, as implemented by the Council on

Environmental Quality Regulations (40 CFR parts 1500-1508). The study authority is Public Law 84-71, which authorized the examination and survey of the coastal and tidal areas of the eastern and southern United States, with particular reference to areas where severe damages have occurred from hurricane winds and tides. The primary problem is that existing protection is not adequate to prevent excessive storm damage and flooding from occurring during major coastal storms. Coastal flooding is worsening due to climate change induced sea level rise, which is also amplifying storm surge height. These trends are expected to continue and worsen due to sea level rise accelerating over time, a trend already observed in recent decades. Measures being considered include ringwalls, floodwalls, storm surge barriers, buyouts/elevations of buildings, wet and/or dry flood-proofing of buildings, relocating structures and utilities, and nature-based features potentially including mangrove restoration, oyster and/or coral reef restoration, and seagrass restoration.

USACE is the lead federal agency and Miami-Dade County will be the non-federal sponsor for the study. The Study/EIS will address the primary problem of the increasing storm damage and flooding occurring and expected to increase in the area by studying all reasonable alternatives and determine the Federal interest in cost-sharing for those alternatives.

As required by Council on Environmental Quality's Principles, Requirements and Guidelines for Water and Land Related Resources Implementation Studies all reasonable alternatives to the proposed Federal action that meet the purpose and need will be considered in the EIS. These alternatives will include no action and a range of reasonable alternatives for protecting the shoreline and structures in Miami-Dade County, Florida.

**Susan L. Conner,**

*Chief, Planning and Policy, Norfolk District USACE.*

[FR Doc. 2019-15292 Filed 7-17-19; 8:45 am]

**BILLING CODE 3720-58-P**

## DEPARTMENT OF DEFENSE

### Department of Navy

#### Notice of Intent To Grant a Partially Exclusive License; CHEMEON Surface Technology, LLC

**AGENCY:** Department of the Navy, DoD.

**ACTION:** Notice of intent to grant license.

**SUMMARY:** The Department of the Navy hereby gives notice of its intent to grant to CHEMEON Surface Technology, LLC located at 2241 Park Place, Suite B, Minden, NV 89423, a revocable, nonassignable, partially exclusive license to practice the Government-Owned invention described in United States Patent Application number 15/474,374 titled "Synergistic Metal Polycarboxylate Corrosion Inhibitors" filed 30 March 2017 (PAX236); United States Patent Application number 16/184,264 titled "Synergistic Metal Polycarboxylate Corrosion Inhibitors" filed 08 November 2018 (PAX294); and United States Patent Application number 16/294,039 titled "Synergistic Metal Polycarboxylate Corrosion Inhibitors" filed 06 March 2019 (PAX315); and any divisional applications or continuation applications thereof, and any patents issuing from these applications, throughout the United States of America in the fields of use for CrVI and CrIII conversion coatings; phosphate conversion coatings; bluing; black oxide coatings on steel; and lubricants.

**DATES:** Anyone wishing to object to the grant of this license has fifteen (15) days from the publication date of this notice to file written objections along with supporting evidence, if any.

**ADDRESSES:** Written objections are to be filed with the Naval Air Warfare Center Aircraft Division, Technology Transfer Office, Attention Michelle Miedzinski, Code 5.0H, 22347 Cedar Point Road, Building 2185, Box 62, Room 2160, Patuxent River, Maryland 20670. File an electronic copy of objection with [michelle.miedzinski@navy.mil](mailto:michelle.miedzinski@navy.mil).

**FOR FURTHER INFORMATION CONTACT:** Michelle Miedzinski, 301-342-1133, Naval Air Warfare Center Aircraft Division, 22347 Cedar Point Road, Building 2185, Box 62, Room 2160, Patuxent River, Maryland 20670, [michelle.miedzinski@navy.mil](mailto:michelle.miedzinski@navy.mil).

**Authority:** (35 U.S.C. 207, 37 CFR part 404.)

Dated: July 15, 2019.

**M.S. Werner,**

*Commander, Judge Advocate General's Corps, U. S. Navy, Federal Register Liaison Officer.*

[FR Doc. 2019-15286 Filed 7-17-19; 8:45 am]

**BILLING CODE 3810-FF-P**



DEPARTMENT OF THE ARMY  
US ARMY CORPS OF ENGINEERS  
NORFOLK DISTRICT  
FORT NORFOLK  
803 FRONT STREET  
NORFOLK VA 23510-1011

January 3, 2019

Jennifer Bucatari (Culbertson), Ph.D  
Oceanographer  
Department of the Interior  
Bureau of Ocean Energy Management  
Headquarters Office of Environmental Programs  
45600 Woodland Road  
Sterling, Virginia 20166

**RE: Cooperating Agency Invitation for the Collier County Coastal Storm Risk Management Feasibility Study**

Dear Dr. Bucatari,

In accordance with regulations pertaining to the National Environmental Policy Act (NEPA; Title 40 of the Code of Federal Regulations, part 1501.6), Executive Order 13807 ("One Federal Decision") and Section 1005 of the Water Resources Reform and Development Act (WRRDA) of 2014, the U.S. Army Corps of Engineers (Corps), is formally inviting the Bureau of Ocean Energy Management to become a cooperating agency for the Collier County Coastal Storm Risk Management Feasibility Study. Council on Environmental Quality regulations implementing NEPA provide that the lead agency (i.e. Corps) may designate other federal, state, local and tribal agencies that have legal jurisdiction or special expertise with respect to any environmental impact involved in a proposal to be cooperating agencies. If you choose not to become a cooperating agency, the Corps will continue to coordinate as we have done in the past.

The purpose of the project is to reduce potential damages caused by coastal storms and improve human safety and coastal resiliency in Collier County. Attachment 1 contains a map of the approximate study area. The project is currently in the feasibility study phase and draft project alternatives are anticipated to be available in approximately January 2019, selection of a Tentatively Selected Plan is planned for September 2019 and the release of the draft integrated report/NEPA document is planned for release to the public for commenting in October/November 2019.

The formulation of the project alternatives will be in accordance with Engineer Regulation ER 1105-2-100 and will fully consider a range of environmental, economic and social factors. Your participation as a cooperating agency will help the Corps fully consider the views, needs and benefits of competing interests. Roles and responsibilities of a cooperating agency are defined in Attachment 2. For additional

information on becoming a cooperating agency, please see the "Rights and Responsibilities of Lead and Cooperating Agencies" (Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations, Council on Environmental Quality, 1981, 14a; <https://www.energy.gov/sites/prod/files/2018/06/f53/G-CEQ-40Questions.pdf>).

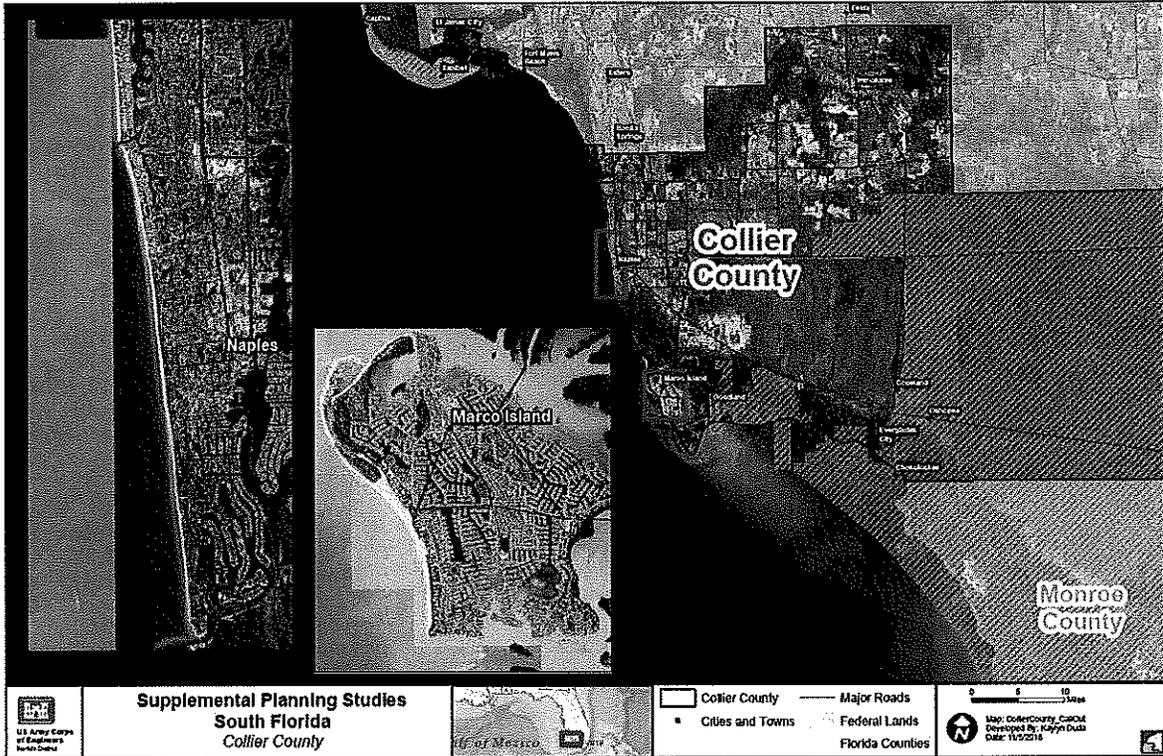
In accordance with WRRDA 2014, Section 1005, any federal agency that is invited by the federal lead agency to participate in the environmental review process for a project study shall be designated as a cooperating agency by the federal lead agency unless the invited agency informs the federal lead agency, in writing, by the deadline specified in the invitation that the invited agency— "(A)(i)(I) has no jurisdiction or authority with respect to the project; "(II) has no expertise or information relevant to the project; or "(III) does not have adequate funds to participate in the project; and "(ii) does not intend to submit comments on the project; or "(B) does not intend to submit comments on the project. The Corps appreciates a response to this invitation within 30 days of the date of this letter. If you have any questions, please contact Mr. Richard M. Harr at-757-201-7746 or via email at [richard.m.harr@usace.army.mil](mailto:richard.m.harr@usace.army.mil).

Sincerely,

A handwritten signature in black ink, appearing to read "Alicia M. Logalbo". The signature is fluid and cursive, with a prominent flourish at the end.

Alicia M. Logalbo  
U.S. Army Corps of Engineers Norfolk  
District  
Chief, Environmental Analysis Section  
Planning and Policy Branch

Attachment 1: Map of Approximate Study Area



## Attachment 2: Role of Cooperating Agency

As outlined in E.O. 13807, Section 5 (b)(i): "All Federal cooperating and participating agencies shall identify points of contact for each project, cooperate with the lead Federal agency point of contact, and respond to all reasonable requests for information from the lead Federal agency in a timely manner."

The roles and responsibilities of cooperating agencies include, but are not limited to:

### 40 CFR §1501.6

- 1) Participate in the National Environmental Policy Act (NEPA) process at the earliest possible time.
- 2) Participate in the scoping process (described below and adapted from 40 CFR §1501.7)
  - a) Determine significant issues to be analyzed in depth in the NEPA assessment.
  - b) In cooperation with the lead agency (U.S. Army Corps of Engineers, Jacksonville District; Corps) identify and eliminate from detailed study the issues which are not significant or which have been covered by prior environmental review, narrowing the discussion of these issues in the NEPA assessment to a brief presentation of why they will not have a significant effect on the human environment or providing a reference to their coverage elsewhere.
  - c) Assist in preparation of the sections of the NEPA assessment for which the cooperating agency has jurisdiction by law or special expertise.
  - d) Share knowledge of any public environmental assessments and other environmental impact statements which are being or will be prepared that are related to but are not part of the scope of the NEPA assessment under consultation.
  - e) Identify other environmental review and consultation requirements so the lead and cooperating agencies may prepare other required analyses and studies concurrently with, an integrated with, the NEPA assessment as provided in 40 CFR §1502.25.
- 3) Assume on the request of the Corps responsibility for developing information and preparing environmental analyses including portions of the NEPA assessment concerning which the cooperating agency had special expertise.
- 4) Make available staff support at the Corps' request to enhance the Corps' interdisciplinary capabilities.
- 5) Participate in scheduled project delivery team meetings, sub-team meetings, NEPA meetings and other scheduled public engagements as requested by the Corps.
- 6) Meet all scheduled time frames provided by the Corps to ensure timely delivery of materials in order to comply with time frames set forth under WRRDA 2014 and E.O. 13807.
- 7) Review and provide written comments to the Corps on the Draft and Final NEPA assessment during the scheduled public review periods.

- 8) Understand that the Corps is the lead Federal agency and as such as the final decision on the contents of the NEPA assessment.



# United States Department of the Interior

BUREAU OF OCEAN ENERGY MANAGEMENT  
WASHINGTON, DC 20240-0001

FEB 13 2019

Ms. Alicia M. Logalbo, Chief  
Environmental Analysis Section  
Planning and Policy Branch  
U.S. Army Corps of Engineers- Norfolk District  
803 Front Street  
Norfolk, VA 23510-1011

Dear Ms. Logalbo:

Thank you for your letter, January 3, 2019, requesting that the Bureau of Ocean Energy Management (BOEM) become a cooperating agency for the Collier County Coastal Storm Risk Management and Feasibility Study. The U.S. Army Corps of Engineers (USACE), Norfolk District is currently evaluating alternatives to reduce existing and potential shoreline impacts due to coastal storms and to improve coastal resiliency in Collier County, Florida. This project is presently in the feasibility study phase and project alternatives have not been finalized. There is the potential to require use of federal sand resources located within the Outer Continental Shelf (OCS). Section 8(k) of the Outer Continental Shelf Lands Act (OCSLA) grants BOEM the authority to convey, on a noncompetitive basis, the rights to OCS sand, gravel, or shell resources for shore protection, beach or wetlands restoration, or for use in construction projects funded in whole or part or authorized by the federal government.

The BOEM welcomes the opportunity to participate in this National Environmental Policy Act (NEPA) effort and agrees to serve as a cooperating agency since BOEM has sole jurisdiction over mineral leasing on the OCS. As a cooperating agency, BOEM expects to: participate and provide input in the NEPA process at the earliest possible time; assume, on the request of the Corps, responsibility for developing information and preparing environmental analyses for which BOEM has special expertise; make available staff support, at the lead agency's request, to enhance the interdisciplinary capability of the Corps; provide comment on draft versions of documents when requested; and use our own funds to accomplish these responsibilities. NEPA documents, particularly the 2013 and 2017 BOEM Environmental Assessments (EAs) for Collier County beach renourishment, have been previously prepared considering the potential environmental effects of project activities. BOEM expects to collaborate with USACE to develop the necessary NEPA analyses to ensure the most efficient and effective treatment of potential effects, while also considering and incorporating new information and science when appropriate.

The BOEM recognizes the importance of initiating and agrees to participate in the required Endangered Species Act (ESA) Section 7 consultation; the Magnuson-Stevens Fishery and Conservation Management Act Essential Fish Habitat (EFH) consultation (Section 305); the National Historic Preservation Act (NHPA) Section 106 process; the Coastal Zone Management Act (CZMA) Section 307 consistency process; and any tribal consultations, as needed depending

on existing coverage. As the lead agency in ESA Section 7 and the EFH consultation, USACE is expected to notify the U.S. Fish and Wildlife Service (FWS) and NOAA Fisheries of its lead role and BOEM's cooperating role. Likewise, it is expected that any ESA Section 7 and EFH assessments will be submitted jointly and biological opinions from FWS and NMFS are applicable to BOEM's action. BOEM anticipates that USACE will be the lead federal agency for ensuring compliance to both Section 106 of the NHPA, including coordination with the State Historic Preservation Officer (SHPO), and Section 307 of the Coastal Zone Management Act (CZMA). BOEM welcomes the opportunity to review and provide comments on any draft correspondence in regards to these consultations.

The BOEM looks forward to working with USACE during this process. If you would like to discuss any of these items further, please contact Jennifer Bucatari at (703) 787-1742 or by e-mail at [jennifer.bucadari@boem.gov](mailto:jennifer.bucadari@boem.gov).

Sincerely,



Geoffrey Wikel  
Chief, Branch of Environmental Coordination  
Division of Environmental Assessment

cc: Jeffrey Reidenauer, Leasing Division  
Bureau of Ocean Energy Management

Mr. Richard Harr  
Water Resources Division  
Planning and Policy Branch  
Environmental Analysis Section  
U.S. Army Corps of Engineers, Norfolk District  
803 Front Street  
Norfolk, Virginia 23510

bc: Official File  
Chief, DEA  
Chief, Branch of Environmental Coordination  
Bucadari, DEA



DEPARTMENT OF THE ARMY  
US ARMY CORPS OF ENGINEERS  
NORFOLK DISTRICT  
FORT NORFOLK  
803 FRONT STREET  
NORFOLK VA 23510-1011

November 20, 2018

Mr. Jamie Higgins  
Environmental Protection Agency  
Program Office – Region 4  
61 Forsyth Street, SW  
Atlanta, GA 30303

**RE: Cooperating Agency Invitation for the Collier County Coastal Storm Risk Management Feasibility Study**

Dear Mr. Higgins:

In accordance with regulations pertaining to the National Environmental Policy Act (NEPA; Title 40 of the Code of Federal Regulations, part 1501.6), Executive Order 13807 (“One Federal Decision”) and Section 1005 of the Water Resources Reform and Development Act (WRRDA) of 2014, the U.S. Army Corps of Engineers (Corps), is formally inviting Environmental Protection Agency to become a cooperating agency for the Collier County Coastal Storm Risk Management Feasibility Study. Council on Environmental Quality regulations implementing NEPA provide that the lead agency (i.e. Corps) may designate other federal, state, local and tribal agencies that have legal jurisdiction or special expertise with respect to any environmental impact involved in a proposal to be cooperating agencies. If you choose not to become a cooperating agency, the Corps will continue to coordinate as we have done in the past.

The purpose of the project is to reduce potential damages caused by coastal storms and improve human safety and coastal resiliency in Collier County. Attachment 1 contains a map of the approximate study area. The project is currently in the feasibility study phase and draft project alternatives are anticipated to be available in approximately January 2019, selection of a Tentatively Selected Plan is planned for September 2019 and the release of the draft integrated report/NEPA document is planned for release to the public for commenting in October/November 2019.

The formulation of the project alternatives will be in accordance with Engineer Regulation ER 1105-2-100 and will fully consider a range of environmental, economic and social factors. Your participation as a cooperating agency will help the Corps fully consider the views, needs and benefits of competing interests. Roles and responsibilities of a cooperating agency are defined in Attachment 2. For additional information on becoming a cooperating agency, please see the “Rights and Responsibilities of Lead and Cooperating Agencies” (Forty Most Asked Questions Concerning CEQ’s National Environmental Policy Act Regulations, Council on Environmental Quality, 1981, 14a; <https://www.energy.gov/sites/prod/files/2018/06/f53/G-CEQ-40Questions.pdf>).

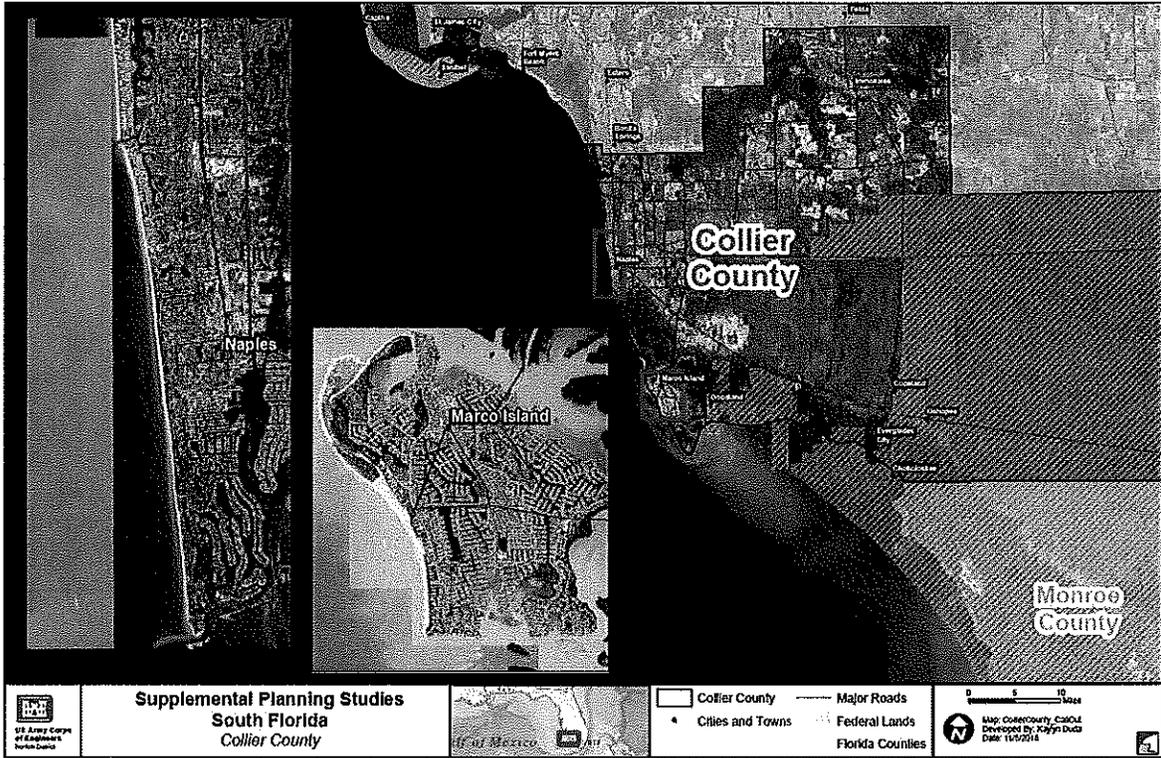
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Alicia M. Logalbo  
U.S. Army Corps of Engineers  
Norfolk District  
Chief, Environmental Analysis Section  
Planning and Policy Branch

Attachment 1: Map of Approximate Study Area



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DEPARTMENT OF THE ARMY  
US ARMY CORPS OF ENGINEERS  
NORFOLK DISTRICT  
FORT NORFOLK  
803 FRONT STREET  
NORFOLK VA 23510-1011

November 20, 2018

Mr. Gregory W. Garis  
Florida Department of Environmental Protection  
Division of Water Resources Management  
2600 Blair Stone Road, MS 3544  
Tallahassee, Florida 32399-2400

**RE: Cooperating Agency Invitation for the Collier County Coastal Storm Risk Management Feasibility Study**

Dear Mr. Garis:

In accordance with regulations pertaining to the National Environmental Policy Act (NEPA; Title 40 of the Code of Federal Regulations, part 1501.6), Executive Order 13807 ("One Federal Decision") and Section 1005 of the Water Resources Reform and Development Act (WRRDA) of 2014, the U.S. Army Corps of Engineers (Corps), is formally inviting Florida Department of Environmental Protection to become a cooperating agency for the Collier County Coastal Storm Risk Management Feasibility Study. Council on Environmental Quality regulations implementing NEPA provide that the lead agency (i.e. Corps) may designate other federal, state, local and tribal agencies that have legal jurisdiction or special expertise with respect to any environmental impact involved in a proposal to be cooperating agencies. If you choose not to become a cooperating agency, the Corps will continue to coordinate as we have done in the past.

The purpose of the project is to reduce potential damages caused by coastal storms and improve human safety and coastal resiliency in Collier County. Attachment 1 contains a map of the approximate study area. The project is currently in the feasibility study phase and draft project alternatives are anticipated to be available in approximately January 2019, selection of a Tentatively Selected Plan is planned for September 2019 and the release of the draft integrated report/NEPA document is planned for release to the public for commenting in October/November 2019.

The formulation of the project alternatives will be in accordance with Engineer Regulation ER 1105-2-100 and will fully consider a range of environmental, economic and social factors. Your participation as a cooperating agency will help the Corps fully consider the views, needs and benefits of competing interests. Roles and responsibilities of a cooperating agency are defined in Attachment 2. For additional information on becoming a cooperating agency, please see the "Rights and Responsibilities of Lead and Cooperating Agencies" (Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations, Council on Environmental Quality, 1981, 14a; <https://www.energy.gov/sites/prod/files/2018/06/f53/G-CEQ-40Questions.pdf>).

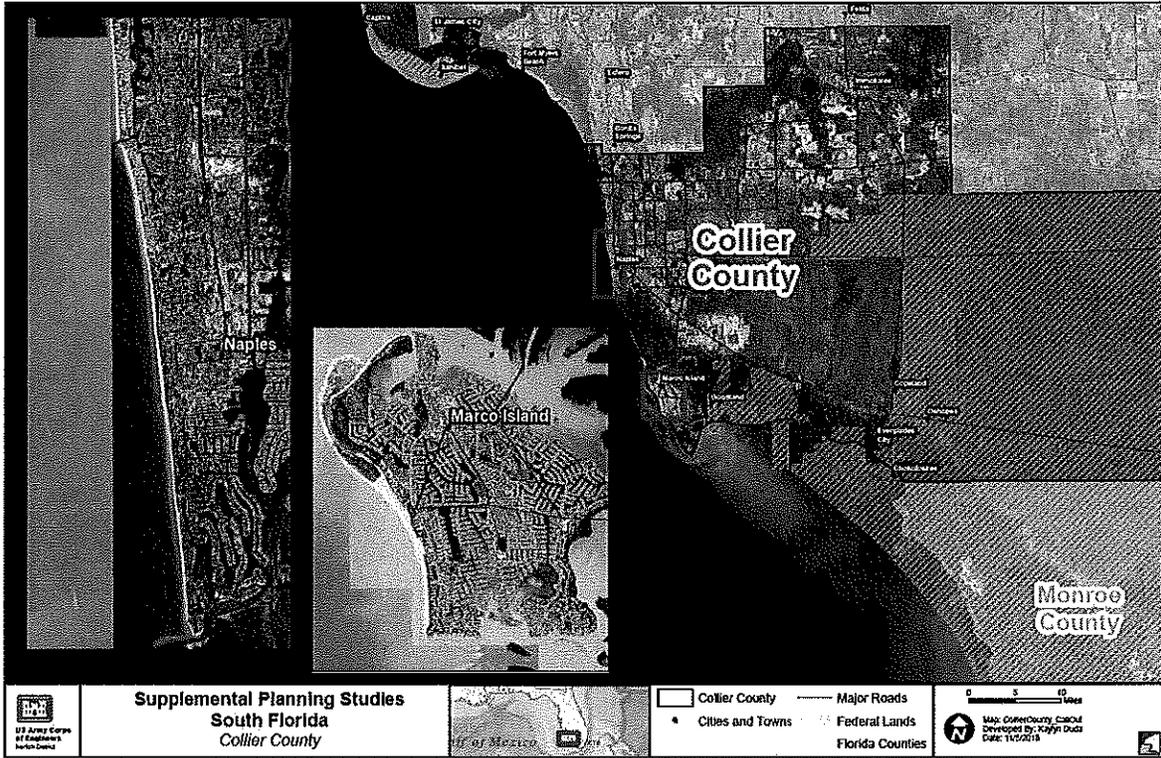
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Alicia M. Logalbo  
U.S. Army Corps of Engineers  
Norfolk District  
Chief, Environmental Analysis Section  
Planning and Policy Branch

Attachment 1: Map of Approximate Study Area



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DEPARTMENT OF THE ARMY  
US ARMY CORPS OF ENGINEERS  
NORFOLK DISTRICT  
FORT NORFOLK  
803 FRONT STREET  
NORFOLK VA 23510-1011

January 8, 2019

Mr. L.K. Nandam  
Florida Department of Transportation  
District 1, Southwest Florida  
801 N. Broadway Avenue  
Bartow, Florida 33830-3809

**RE: Cooperating Agency Invitation for the Collier County Coastal Storm Risk Management Feasibility Study**

Dear Mr. Nandam:

In accordance with regulations pertaining to the National Environmental Policy Act (NEPA; Title 40 of the Code of Federal Regulations, part 1501.6), Executive Order 13807 ("One Federal Decision") and Section 1005 of the Water Resources Reform and Development Act (WRRDA) of 2014, the U.S. Army Corps of Engineers (Corps), is formally inviting Florida Department of Transportation to become a cooperating agency for the Collier County Coastal Storm Risk Management Feasibility Study. Council on Environmental Quality regulations implementing NEPA provide that the lead agency (i.e. Corps) may designate other federal, state, local and tribal agencies that have legal jurisdiction or special expertise with respect to any environmental impact involved in a proposal to be cooperating agencies. If you choose not to become a cooperating agency, the Corps will continue to coordinate as we have done in the past.

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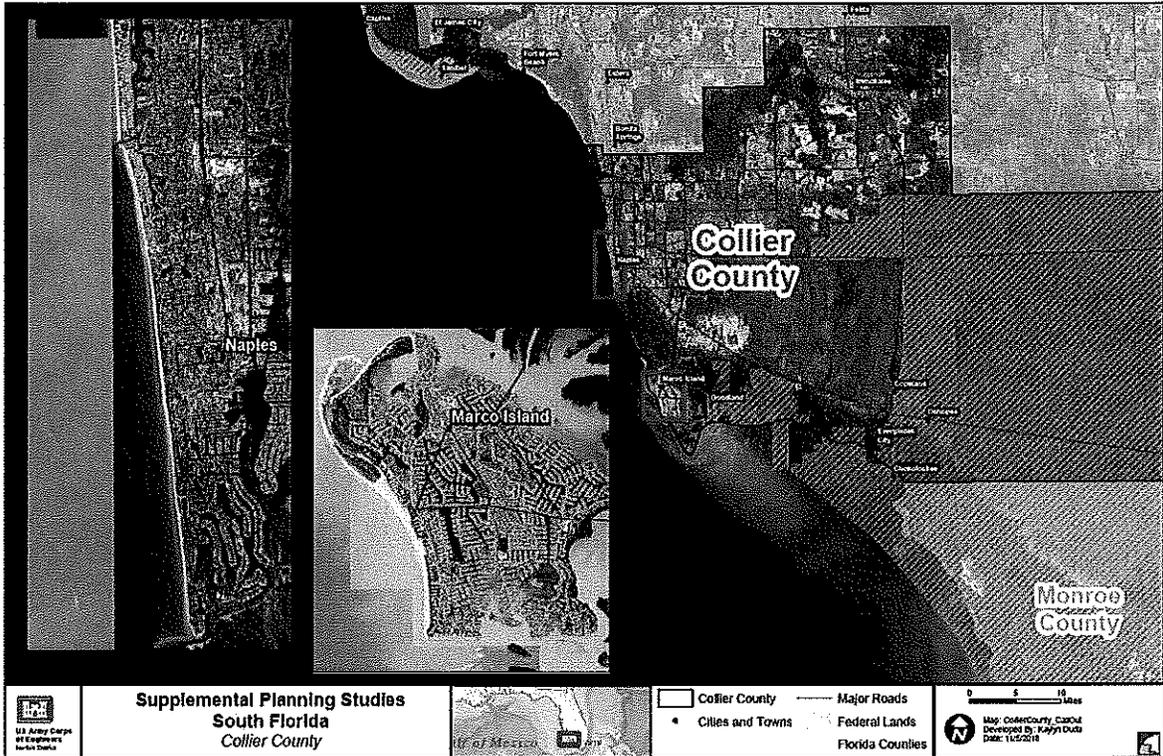
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Alicia M. Logalbo  
U.S. Army Corps of Engineers  
Norfolk District  
Chief, Environmental Analysis Section  
Planning and Policy Branch

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DEPARTMENT OF THE ARMY  
US ARMY CORPS OF ENGINEERS  
NORFOLK DISTRICT  
FORT NORFOLK  
803 FRONT STREET  
NORFOLK VA 23510-1011

November 20, 2018

Ms. Gracia Szczech  
Regional Administrator, Region IV  
Federal Emergency Management Administration  
3003 Chamblee Tucker Road  
Atlanta, GA 30341

**RE: Cooperating Agency Invitation for the Collier County Coastal Storm Risk Management Feasibility Study**

Dear Ms. Szczech:

In accordance with regulations pertaining to the National Environmental Policy Act (NEPA; Title 40 of the Code of Federal Regulations, part 1501.6), Executive Order 13807 ("One Federal Decision") and Section 1005 of the Water Resources Reform and Development Act (WRRDA) of 2014, the U.S. Army Corps of Engineers (Corps), is formally inviting Federal Emergency Management Administration to become a cooperating agency for the Collier County Coastal Storm Risk Management Feasibility Study. Council on Environmental Quality regulations implementing NEPA provide that the lead agency (i.e. Corps) may designate other federal, state, local and tribal agencies that have legal jurisdiction or special expertise with respect to any environmental impact involved in a proposal to be cooperating agencies. If you choose not to become a cooperating agency, the Corps will continue to coordinate as we have done in the past.

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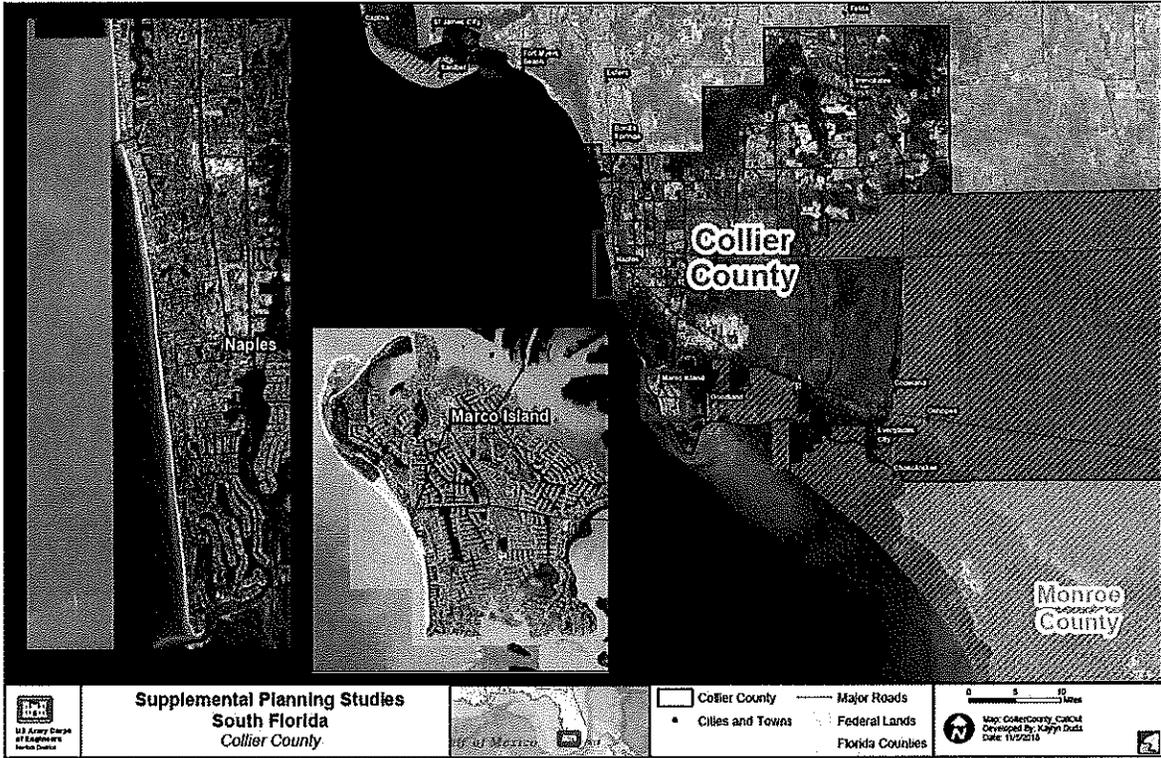
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Alicia M. Logalbo  
U.S. Army Corps of Engineers  
Norfolk District  
Chief, Environmental Analysis Section  
Planning and Policy Branch

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  - a) Determine significant issues to be analyzed in depth in the NEPA assessment.
  - b) In cooperation with the lead agency (U.S. Army Corps of Engineers, Jacksonville District; Corps) identify and eliminate from detailed study the issues which are not significant or which have been covered by prior environmental review, narrowing the discussion of these issues in the NEPA assessment to a brief presentation of why they will not have a significant effect on the human environment or providing a reference to their coverage elsewhere.
  - c) Assist in preparation of the sections of the NEPA assessment for which the cooperating agency has jurisdiction by law or special expertise.
  - d) Share knowledge of any public environmental assessments and other environmental impact statements which are being or will be prepared that are related to but are not part of the scope of the NEPA assessment under consultation.
  - e) Identify other environmental review and consultation requirements so the lead and cooperating agencies may prepare other required analyses and studies concurrently with, an integrated with, the NEPA assessment as provided in 40 CFR §1502.25.
- 3) Assume on the request of the Corps responsibility for developing information and preparing environmental analyses including portions of the NEPA assessment concerning which the cooperating agency had special expertise.
- 4) Make available staff support at the Corps' request to enhance the Corps' interdisciplinary capabilities.
- 5) Participate in scheduled project delivery team meetings, sub-team meetings, NEPA meetings and other scheduled public engagements as requested by the Corps.
- 6) Meet all scheduled time frames provided by the Corps to ensure timely delivery of materials in order to comply with time frames set forth under WRRDA 2014 and E.O. 13807.
- 7) Review and provide written comments to the Corps on the Draft and Final NEPA assessment during the scheduled public review periods.
- 8) Understand that the Corps is the lead Federal agency and as such as the final decision on the contents of the NEPA assessment.



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

REGION 4  
ATLANTA FEDERAL CENTER  
61 FORSYTH STREET  
ATLANTA, GEORGIA 30303-8960

**NOV 28 2018**

Alicia M. Logalbo  
Chief, Environmental Analysis Section  
Department of the Army  
Norfolk District, Corps of Engineers  
Fort Norfolk  
803 Front Street  
Norfolk, Virginia 23510-1011

Re: U.S. Army Corps of Engineers (USACE) Cooperating Agency Requests for  
the Miami Back Bay, Florida Keys and Collier County Coastal Storm Risk Management (CSRМ)  
Feasibility Studies and National Environmental Policy Act Documents

Dear Ms. Logalbo:

The U.S. Environmental Protection Agency has received your three letters dated November 20 and 21, 2018, offering the EPA an opportunity to become a "cooperating agency" to the USACE in the development of the CSRМ Feasibility Studies and associated National Environmental Policy Act (NEPA) documents for Miami-Dade County Back Bay, Florida Keys and Collier County (respectively) projects in accordance with NEPA (Title 40 of the Code of Federal Regulations, Part 1501.6), Executive Order 13807 ("One Federal Decision") and Section 1005 of the Water Resources Reform and Development Act (WRRDA) of 2014. The EPA understands that the USACE has not decided whether to prepare an Environmental Assessment or Environmental Impact Statement and will determine the level of NEPA later in the process. As stated in your letters, the purposes of the projects are to reduce potential damages caused by coastal storms and improve human safety and coastal resiliency in three separate projects that are in Miami-Dade County Back Bay, the Florida Keys and Collier County, Florida.

The EPA accepts your invitation to become a cooperating agency on all three projects. As resources allow, we plan to fully participate in interagency teleconferences and meetings at important milestones. It should be noted that our status as a cooperating agency has no effect on our authorities under Section 102(2)(C) of NEPA, Section 309 of the Clean Air Act and the Clean Water Act. Similarly, our role as a cooperating agency does not imply that EPA will necessarily concur with all aspects of the project or NEPA document.

We appreciate the opportunity of working with the USACE as a cooperating agency on these projects. Please contact Ms. Jamie Higgins of the NEPA Program Office as our primary agency representative for this project at (404) 562-9681, or by e-mail at [Higgins.jamie@epa.gov](mailto:Higgins.jamie@epa.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Chris A. Militscher".

Christopher A. Militscher  
Chief, NEPA Program Office  
Resource Conservation and Restoration Division

cc: J. Derby, EPA, Water Protection Division



DEPARTMENT OF THE ARMY  
US ARMY CORPS OF ENGINEERS  
NORFOLK DISTRICT  
FORT NORFOLK  
803 FRONT STREET  
NORFOLK VA 23510-1011

November 20, 2018

Mr. Jeff Howe  
U.S. Fish and Wildlife Service  
1339 20<sup>th</sup> Street  
Vero Beach, Florida

**RE: Cooperating Agency Invitation for the Collier County Coastal Storm Risk Management Feasibility Study**

Dear Mr. Howe:

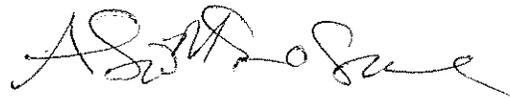
In accordance with regulations pertaining to the National Environmental Policy Act (NEPA; Title 40 of the Code of Federal Regulations, part 1501.6), Executive Order 13807 ("One Federal Decision") and Section 1005 of the Water Resources Reform and Development Act (WRRDA) of 2014, the U.S. Army Corps of Engineers (Corps), is formally inviting U.S. Fish and Wildlife Service to become a cooperating agency for the Collier County Coastal Storm Risk Management Feasibility Study. Council on Environmental Quality regulations implementing NEPA provide that the lead agency (i.e. Corps) may designate other federal, state, local and tribal agencies that have legal jurisdiction or special expertise with respect to any environmental impact involved in a proposal to be cooperating agencies. If you choose not to become a cooperating agency, the Corps will continue to coordinate as we have done in the past.

The purpose of the project is to reduce potential damages caused by coastal storms and improve human safety and coastal resiliency in Collier County. Attachment 1 contains a map of the approximate study area. The project is currently in the feasibility study phase and draft project alternatives are anticipated to be available in approximately January 2019, selection of a Tentatively Selected Plan is planned for September 2019 and the release of the draft integrated report/NEPA document is planned for release to the public for commenting in October/November 2019.

The formulation of the project alternatives will be in accordance with Engineer Regulation ER 1105-2-100 and will fully consider a range of environmental, economic and social factors. Your participation as a cooperating agency will help the Corps fully consider the views, needs and benefits of competing interests. Roles and responsibilities of a cooperating agency are defined in Attachment 2. For additional information on becoming a cooperating agency, please see the "Rights and Responsibilities of Lead and Cooperating Agencies" (Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations, Council on Environmental Quality, 1981, 14a; <https://www.energy.gov/sites/prod/files/2018/06/f53/G-CEQ-40Questions.pdf>).

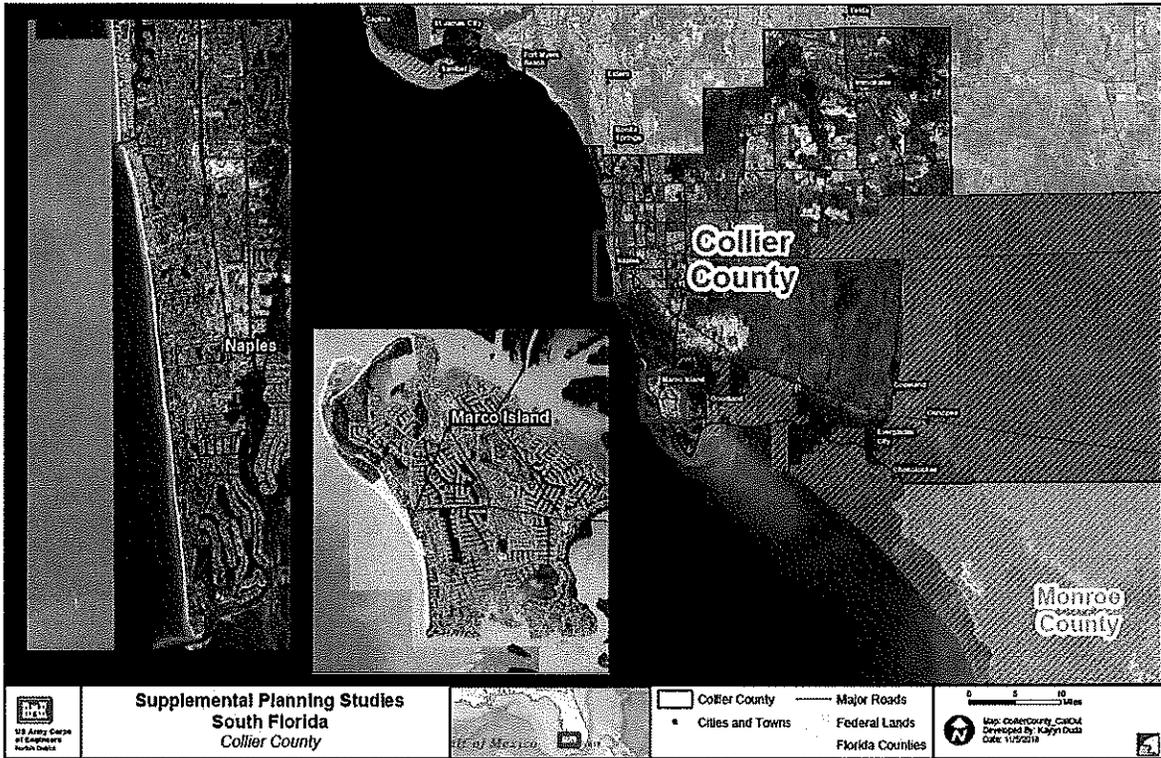
In accordance with WRRDA 2014, Section 1005, any federal agency that is invited by the federal lead agency to participate in the environmental review process for a project study shall be designated as a cooperating agency by the federal lead agency unless the invited agency informs the federal lead agency, in writing, by the deadline specified in the invitation that the invited agency— “(A)(i)(I) has no jurisdiction or authority with respect to the project; “(II) has no expertise or information relevant to the project; or “(III) does not have adequate funds to participate in the project; and “(ii) does not intend to submit comments on the project; or “(B) does not intend to submit comments on the project. The Corps appreciates a response to this invitation within 30 days of the date of this letter. If you have any questions, please contact Mr. Richard M. Harr at 757-201-7746 or via email at [richard.m.harr@usace.army.mil](mailto:richard.m.harr@usace.army.mil).

Sincerely,

A handwritten signature in black ink, appearing to read 'Alicia M. Logalbo', written in a cursive style.

Alicia M. Logalbo  
U.S. Army Corps of Engineers  
Norfolk District  
Chief, Environmental Analysis Section  
Planning and Policy Branch

Attachment 1: Map of Approximate Study Area



## Attachment 2: Role of Cooperating Agency

As outlined in E.O. 13807, Section 5 (b)(i): "All Federal cooperating and participating agencies shall identify points of contact for each project, cooperate with the lead Federal agency point of contact, and respond to all reasonable requests for information from the lead Federal agency in a timely manner."

The roles and responsibilities of cooperating agencies include, but are not limited to:

### 40 CFR §1501.6

- 1) Participate in the National Environmental Policy Act (NEPA) process at the earliest possible time.
- 2) Participate in the scoping process (described below and adapted from 40 CFR §1501.7)
  - a) Determine significant issues to be analyzed in depth in the NEPA assessment.
  - b) In cooperation with the lead agency (U.S. Army Corps of Engineers, Jacksonville District; Corps) identify and eliminate from detailed study the issues which are not significant or which have been covered by prior environmental review, narrowing the discussion of these issues in the NEPA assessment to a brief presentation of why they will not have a significant effect on the human environment or providing a reference to their coverage elsewhere.
  - c) Assist in preparation of the sections of the NEPA assessment for which the cooperating agency has jurisdiction by law or special expertise.
  - d) Share knowledge of any public environmental assessments and other environmental impact statements which are being or will be prepared that are related to but are not part of the scope of the NEPA assessment under consultation.
  - e) Identify other environmental review and consultation requirements so the lead and cooperating agencies may prepare other required analyses and studies concurrently with, an integrated with, the NEPA assessment as provided in 40 CFR §1502.25.
- 3) Assume on the request of the Corps responsibility for developing information and preparing environmental analyses including portions of the NEPA assessment concerning which the cooperating agency had special expertise.
- 4) Make available staff support at the Corps' request to enhance the Corps' interdisciplinary capabilities.
- 5) Participate in scheduled project delivery team meetings, sub-team meetings, NEPA meetings and other scheduled public engagements as requested by the Corps.
- 6) Meet all scheduled time frames provided by the Corps to ensure timely delivery of materials in order to comply with time frames set forth under WRRDA 2014 and E.O. 13807.
- 7) Review and provide written comments to the Corps on the Draft and Final NEPA assessment during the scheduled public review periods.
- 8) Understand that the Corps is the lead Federal agency and as such as the final decision on the contents of the NEPA assessment.

**From:** [Howe, Jeffrey](#)  
**To:** [Harr, Richard M CIV USARMY CENAO \(US\)](#)  
**Subject:** [Non-DoD Source] Collier County Coastal Storm Risk Management Feasibility Study  
**Date:** Thursday, December 6, 2018 3:02:35 PM

---

Mr. Harr:

The Service has chosen not to become a cooperating agency for the above referenced study, but will continue to coordinate as we have done in the past.

Thank you,

--

Jeff Howe

Coastal Fish & Wildlife Biologist  
U.S. Fish & Wildlife Service  
South Florida Ecological Services Office  
1339 20th Street  
Vero Beach, Florida 32960  
(772) 469-4283 (Office)  
(772) 562-4288 (FAX)  
< ' ))><{

NOTE: This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act (FOIA) and may be disclosed to third parties.



**UNITED STATES DEPARTMENT OF COMMERCE**

National Oceanic and Atmospheric Administration

**NATIONAL MARINE FISHERIES SERVICE**

Southeast Regional Office

263 13th Avenue South

St. Petersburg, Florida 33701-5505

<http://sero.nmfs.noaa.gov>

F:SER/NS

Alicia M. Logalbo  
Chief, Environmental Analysis Section  
Planning and Policy Branch  
Norfolk District, U.S. Army Corps of Engineers  
803 Front Street  
Norfolk, Virginia 23510-1011

Attention: Richard M. Harr

Dear Ms. Logalbo:

NOAA's National Marine Fisheries Service (NMFS) has received your letter dated November 20, 2018, requesting our participation as a cooperating agency on the Collier County Florida, Coastal Storm Risk Management Feasibility Study. NMFS agrees to serve as a cooperating agency for this U.S. Army Corps of Engineers Feasibility Study. Due to staffing and travel constraints, our participation may be limited to our review and comment on draft National Environmental Policy Act documents, teleconferences, and occasional travel to meetings.

We appreciate your invitation to serve as a cooperating agency for the Feasibility Study. Please direct Essential Fish Habitat related correspondence to Mr. Mark Sramek, by telephone at (727) 824-5311, or by e-mail at [Mark.Sramek@noaa.gov](mailto:Mark.Sramek@noaa.gov). Please direct Endangered Species Act related correspondence to Mr. Joseph Cavanaugh, by telephone at (727) 824-5321 or by e-mail at [Joseph.Cavanaugh@noaa.gov](mailto:Joseph.Cavanaugh@noaa.gov).

Sincerely,

Roy E. Crabtree, Ph.D.  
Regional Administrator

cc:

GCERC, Renshaw, Lipsy  
F, Leathery, Reid  
F/SER, Strelcheck, Blough, Silverman  
F/SER3, Bernhart, Cavanaugh  
F/SER4, Fay, Dale, Swafford, Sramek  
Files





DEPARTMENT OF THE ARMY  
US ARMY CORPS OF ENGINEERS  
NORFOLK DISTRICT  
FORT NORFOLK  
803 FRONT STREET  
NORFOLK VA 23510-1011

November 20, 2018

Rear Admiral Brown  
United States Coast Guard  
909 SE 1<sup>st</sup> Avenue  
Brickell Plaza Federal Bldg.  
Miami, FL 33131

**RE: Cooperating Agency Invitation for the Collier County Coastal Storm Risk Management Feasibility Study**

Dear Admiral Brown:

In accordance with regulations pertaining to the National Environmental Policy Act (NEPA; Title 40 of the Code of Federal Regulations, part 1501.6), Executive Order 13807 ("One Federal Decision") and Section 1005 of the Water Resources Reform and Development Act (WRRDA) of 2014, the U.S. Army Corps of Engineers (Corps), is formally inviting United States Coast Guard to become a cooperating agency for the Collier County Coastal Storm Risk Management Feasibility Study. Council on Environmental Quality regulations implementing NEPA provide that the lead agency (i.e. Corps) may designate other federal, state, local and tribal agencies that have legal jurisdiction or special expertise with respect to any environmental impact involved in a proposal to be cooperating agencies. If you choose not to become a cooperating agency, the Corps will continue to coordinate as we have done in the past.

The purpose of the project is to reduce potential damages caused by coastal storms and improve human safety and coastal resiliency in Collier County. Attachment 1 contains a map of the approximate study area. The project is currently in the feasibility study phase and draft project alternatives are anticipated to be available in approximately January 2019, selection of a Tentatively Selected Plan is planned for September 2019 and the release of the draft integrated report/NEPA document is planned for release to the public for commenting in October/November 2019.

The formulation of the project alternatives will be in accordance with Engineer Regulation ER 1105-2-100 and will fully consider a range of environmental, economic and social factors. Your participation as a cooperating agency will help the Corps fully consider the views, needs and benefits of competing interests. Roles and responsibilities of a cooperating agency are defined in Attachment 2. For additional information on becoming a cooperating agency, please see the "Rights and Responsibilities of Lead and Cooperating Agencies" (Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations, Council on Environmental Quality, 1981, 14a; <https://www.energy.gov/sites/prod/files/2018/06/f53/G-CEQ-40Questions.pdf>).

In accordance with WRRDA 2014, Section 1005, any federal agency that is invited by the federal lead agency to participate in the environmental review process for a project study shall be designated as a cooperating agency by the federal lead agency unless the invited agency informs the federal lead agency, in writing, by the deadline specified in the invitation that the invited agency— “(A)(i)(I) has no jurisdiction or authority with respect to the project; “(II) has no expertise or information relevant to the project; or “(III) does not have adequate funds to participate in the project; and “(ii) does not intend to submit comments on the project; or “(B) does not intend to submit comments on the project. The Corps appreciates a response to this invitation within 30 days of the date of this letter. If you have any questions, please contact Mr. Richard M. Harr at 757-201-7746 or via email at [richard.m.harr@usace.army.mil](mailto:richard.m.harr@usace.army.mil).

Sincerely,

A handwritten signature in black ink, appearing to read 'Alicia M. Logalbo', written in a cursive style.

Alicia M. Logalbo  
U.S. Army Corps of Engineers  
Norfolk District  
Chief, Environmental Analysis Section  
Planning and Policy Branch

Attachment 1: Map of Approximate Study Area



## Attachment 2: Role of Cooperating Agency

As outlined in E.O. 13807, Section 5 (b)(i): "All Federal cooperating and participating agencies shall identify points of contact for each project, cooperate with the lead Federal agency point of contact, and respond to all reasonable requests for information from the lead Federal agency in a timely manner."

The roles and responsibilities of cooperating agencies include, but are not limited to:

### 40 CFR §1501.6

- 1) Participate in the National Environmental Policy Act (NEPA) process at the earliest possible time.
- 2) Participate in the scoping process (described below and adapted from 40 CFR §1501.7)
  - a) Determine significant issues to be analyzed in depth in the NEPA assessment.
  - b) In cooperation with the lead agency (U.S. Army Corps of Engineers, Jacksonville District; Corps) identify and eliminate from detailed study the issues which are not significant or which have been covered by prior environmental review, narrowing the discussion of these issues in the NEPA assessment to a brief presentation of why they will not have a significant effect on the human environment or providing a reference to their coverage elsewhere.
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- 3) Assume on the request of the Corps responsibility for developing information and preparing environmental analyses including portions of the NEPA assessment concerning which the cooperating agency had special expertise.
- 4) Make available staff support at the Corps' request to enhance the Corps' interdisciplinary capabilities.
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- 6) Meet all scheduled time frames provided by the Corps to ensure timely delivery of materials in order to comply with time frames set forth under WRRDA 2014 and E.O. 13807.
- 7) Review and provide written comments to the Corps on the Draft and Final NEPA assessment during the scheduled public review periods.
- 8) Understand that the Corps is the lead Federal agency and as such as the final decision on the contents of the NEPA assessment.



DEPARTMENT OF THE ARMY  
US ARMY CORPS OF ENGINEERS  
NORFOLK DISTRICT  
FORT NORFOLK  
803 FRONT STREET  
NORFOLK VA 23510-1011

November 20, 2018

Planning and Policy Branch  
Environmental Analysis Section

**RE: Initiation of NEPA Scoping and NEPA Scoping Comment Period for the Collier County Coastal Storm Risk Management Feasibility Study**

To Whom It May Concern:

This scoping letter is being promulgated by the U.S. Army Corps of Engineers (Corps) in compliance with public coordination requirements of the National Environmental Policy Act of 1969 (NEPA). The purpose of this correspondence is to formally initiate the scoping process as defined by 40 CFR 1501.7 for the Collier County Coastal Storm Risk Management (CSRМ) Feasibility Study. The Corps is the lead federal agency for this study and Collier County is the nonfederal sponsor. The study authority is Public Law 84-71, June 15, 1955 which authorizes an examination and survey of the coastal and tidal areas of the eastern and southern United States, with particular reference to areas where severe damages have occurred from hurricane winds and tides. The purpose of the project is to reduce potential damages caused by coastal storms and improve human safety and coastal resiliency in Collier County. A map of the approximate study area is provided in Attachment 1. Potential measures being considered include but are not limited to the following: structural alternatives and non-structural alternatives (such as increase dune height, increase dune width, increase berm height, increase berm width, seawall behind beach, pump stations, breakwaters rip rap/ revetments, ring levee, elevate structures, hurricane evacuation, retreat based on elevation, revised building code for minimal elevations, buyouts, comprehensive evacuation plan, revised hurricane response plan, and revised emergency preparedness plan), and Natural and Nature-Based Features (such as mangrove plantings, reefs, vegetative dune plantings, and living shorelines).

The purpose of the scoping period is to commence the public process for the generation of a NEPA document to assess the effects of the alternatives associated with the Collier County CSRМ Feasibility Study. The NEPA document that will be prepared will be an Environmental Assessment for this study. Scoping will aid in determining the scope of the analysis and any potentially significant issues. This process is also to help identify alternatives and information needed to evaluate alternatives.

We welcome your views, questions, comments, concerns and suggestions. The Corps believes that this study will benefit significantly from your involvement. A public NEPA Scoping Meeting will be held on December 6, 2018 from 6:00 p.m. – 8:00 p.m. at the Collier County Administrative Building, 3299 Tamiami Trail, East Building F, 5th Floor Conference Room, Naples, Florida 34112. The format of the meeting will be an open-house that will include informational poster boards. The public can attend any time during the meeting hours. Written scoping comments for the Collier County CSRM Feasibility Study are to be provided no later than January 10, 2019. Written comments or inquiries regarding the Collier County CSRM should be addressed to Mr. Richard M. Harr email: richard.m.harr@usace.army.mil; Telephone: 757-201-7746. Thank you in advance for your participation.

Sincerely,

A handwritten signature in black ink, appearing to read "Alicia M. Logalbo". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

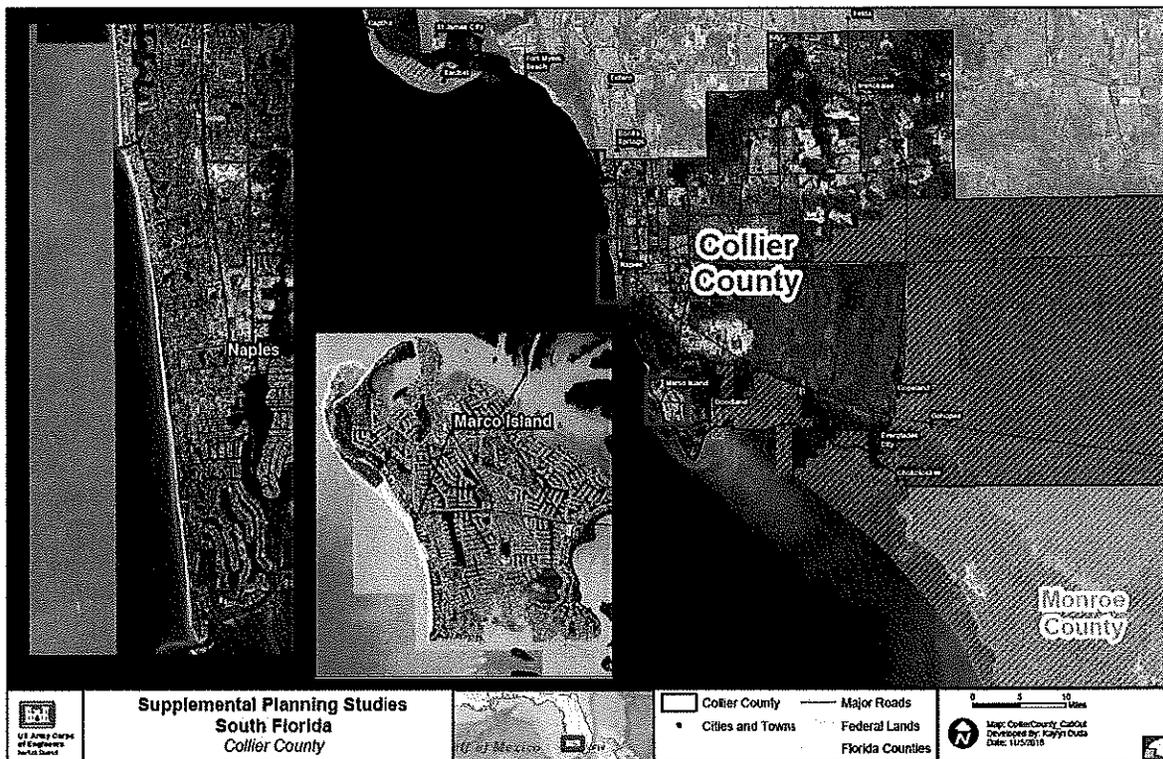
Alicia M. Logalbo  
U.S. Army Corps of Engineers  
Norfolk District  
Chief, Environmental Analysis Section  
Planning and Policy Branch



DEPARTMENT OF THE ARMY  
US ARMY CORPS OF ENGINEERS  
NORFOLK DISTRICT  
FORT NORFOLK  
803 FRONT STREET  
NORFOLK VA 23510-1011

November 20, 2018

Attachment 1: Map of Approximate Study Area





DEPARTMENT OF THE ARMY  
US ARMY CORPS OF ENGINEERS  
NORFOLK DISTRICT  
FORT NORFOLK  
803 FRONT STREET  
NORFOLK VA 23510-1011

February 4, 2019

Planning and Policy Branch  
Environmental Analysis Section

Mr. Jeff Howe  
U.S. Fish and Wildlife Services  
South Florida Ecological Services Field Office  
Coastal Construction, Beach Projects  
1339 20th Street  
Vero Beach, Florida 32960

**Re: Request for Official Species List under the jurisdiction of the U.S. Fish and Wildlife Service and the Coastal Barrier Resources System Map: Collier County Coastal Storm Risk Management Feasibility Study.**

Dear Mr. Howe:

The U.S. Army Corps of Engineers (USACE), Norfolk District, in sponsorship with Collier County, has initiated the Collier County, Florida Coastal Storm Risk Management Feasibility Study. The study authority is Section 4033 of the Water Resources Development Act of 2007 (Public Law 110-114). The study area includes land and water resources reasonably deemed to be within the vicinity of Vanderbilt, Park Shore, and Naples beaches and inland bay areas, as well as Marco Island, provided they are located within the jurisdictional boundary of Collier County, Florida. Collier County is located on the southwest coast of Florida, about 120 miles south of the entrance to Tampa Bay and about 100 miles north of Key West. Naples is the largest city located along the shoreline in the county. Enclosure 1 provides an overall map of the project study area.

Enclosure 2 shows the currently proposed project areas near the cities of Naples and Marco Island.

The primary purpose of the project is to reduce potential damages caused by coastal storms and improve human safety and coastal resiliency in Collier County.

Based on the plan formulation to date, potential measures being considered include nonstructural, structural, and natural and nature-based measures. Potential nonstructural measures include elevating structures, flood proofing, and buyouts. Potential structural measures include enhancing dune geometries and enhance berm geometries. And construction of a seawall, storm surge barriers, breakwaters, and groins. Potential natural and nature-based features include oyster reefs, vegetative dune plantings, and mangrove restoration.

The purpose of this letter is to request the official protected species list under the jurisdiction of the U.S. Fish and Wildlife Service pursuant to Section 7 of the Endangered Species Act and also to request the location of the designated Coastal Barrier Resources System in the study area.

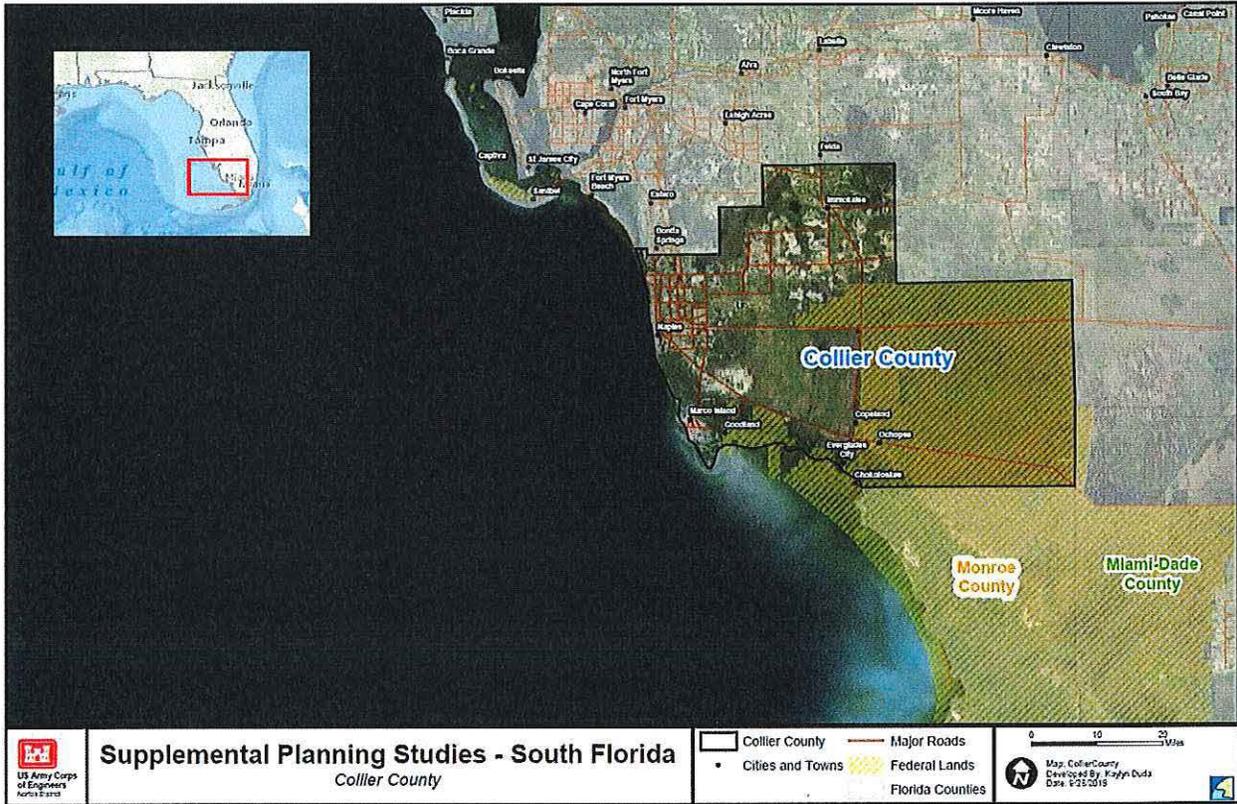
If you have any questions or need additional information, I can be reached via telephone at: (757) 201-7746 or email at [richard.m.harr@usace.army.mil](mailto:richard.m.harr@usace.army.mil). Thank you for your assistance.

Sincerely,

A handwritten signature in black ink, appearing to read 'R.M.H.', with a horizontal line extending to the right.

Richard M. Harr, PWS, CES  
Environmental Scientist  
Environmental Analysis Section

Enclosure 1. Study Area map showing Collier County



Enclosure 2. Project areas near cities of Naples and Marco Island



**From:** [Howe, Jeffrey](#)  
**To:** [Logalbo, Alicia M CIV USARMY CENAO \(USA\)](#)  
**Cc:** [Martin, Zachary CIV USARMY CENAO \(US\)](#); [Ledwin, Jane](#); [Green, Frankie A](#)  
**Subject:** [Non-DoD Source] Re: [EXTERNAL] Collier County Coastal Storm Risk Management (UNCLASSIFIED)  
**Date:** Wednesday, July 1, 2020 2:24:59 PM

---

Hello Alicia:

The species list at this time appears to be complete; however, once the draft BA becomes available and I complete my review, revisions to the list may be prudent.

Take care,

---

From: Logalbo, Alicia M CIV USARMY CENAO (USA) <Alicia.M.Logalbo@usace.army.mil>  
Sent: Tuesday, June 23, 2020 5:50 PM  
To: Howe, Jeffrey <jeffrey\_howe@fws.gov>  
Cc: Martin, Zachary CIV USARMY CENAO (US) <Zachary.Martin@usace.army.mil>  
Subject: [EXTERNAL] Collier County Coastal Storm Risk Management (UNCLASSIFIED)

CLASSIFICATION: UNCLASSIFIED

Jeff,

Below is the table with the federally listed threatened and endangered species under the jurisdiction of the U.S. Fish and Wildlife Service for the Collier County Coastal Storm Risk Management Project. Just wanted to request and ensure we have your concurrence on the Official Species List provided below (open in HTML). Also, FYI – we have prepared a Draft Biological Assessment and it is undergoing our internal review right now and will be ready to submit to you soon. Thank you!

Alicia

Taxonomic Category/Common Name

Scientific Name

Status

Critical )Habitat in Action Area

BIRDS

Piping plover

Charadrius melodus

T

Y

Red knot

*Calidris canutus rufa*

T

N

Wood stork

*Mycteria americana*

T

N

## MAMMALS

West Indian Manatee

*Trichechus manatus*

T

Y

## REPTILES

American alligator

*Alligator mississippiensis*

T

N

American crocodile

*Crocodylus acutus*

E

N

Green sea turtle (North and South Atlantic DPS)

*Chelonia mydas*

T

N

Hawksbill sea turtle

*Eretmochelys imbricata*

E

N

Kemp's ridley sea turtle

*Lepidochelys kempii*

E

N

Leatherback sea turtle

*Dermochelys coriacea*

E

N

Loggerhead sea turtle (Northwest Atlantic Ocean DPS)

*Caretta caretta*

T

Y

CLASSIFICATION: UNCLASSIFIED



DEPARTMENT OF THE ARMY  
US ARMY CORPS OF ENGINEERS  
NORFOLK DISTRICT  
FORT NORFOLK  
803 FRONT STREET  
NORFOLK VA 23510-1011

CENAO-WR-PE (ER 200-2-2)

MEMORANDUM FOR THE RECORD

SUBJECT: Coordination Act Report for the Collier County Coastal Storm Risk Management Feasibility Study, Collier County, Florida

PURPOSE: To document an informal understanding between the U.S. Army Corps of Engineers, Norfolk District (Corps), and the US Fish and Wildlife Service (USFWS), South Florida Ecological Services Office.

**Project Description.** The US Army Corps of Engineers (Corps), Norfolk District, in sponsorship with Collier County, Florida has initiated the Collier County Coastal Storm Risk Management Feasibility Study under the study authority, Section 4033 of the Water Resources Development Act of 2007 (Public Law 110 -114). The Corps proposes to investigate solutions that will reduce damages and risks from impacts of sea level rise and coastal storms. The study area includes the coastal lands of Collier County, Florida, including, but not limited to, shorelines and embankments in the Naples and Marco Island areas.

**Proposed Work.** Based on the plan formulation to date, the potential measures being evaluated include nonstructural, structural, and natural and nature-based features. The potential nonstructural measures include buyouts and acquisitions, elevation of structures and roads, dry/wet floodproofing, warning systems, emergency planning, and land use planning. The potential structural measures include beach berms and dunes, floodwalls with gates, breakwaters, groins, seawalls and storm surge barriers. The potential natural and nature-based features include the restoration of mangroves, Submerged Aquatic Vegetation, and oyster and/or coral reefs. In addition, living shorelines and water storage features/drainage improvements are being considered.

A Draft Feasibility Report/Environmental Impact Statement is being prepared with a Tentatively Selected Plan that results from the evaluation of alternatives that includes recommendations which will be distributed for comment to the public.

**Coordination.** The Fish and Wildlife Coordination (FWCA; 16 U.S.C. 661 et seq., March 10, 1934, as amended 1946, 1958, 1978, and 1995) requires Federal agencies to consult with USFWS regarding the impacts to fish and wildlife resources and the proposed measures to mitigate these impacts. Additional coordination authorities exist through the review process of the National Environmental Policy Act (NEPA; 42 U.S.C.

CENAO-WR-PE (ER 200-2-2)

SUBJECT: Coordination Act Report for the Collier County Coastal Storm Risk Management Feasibility Study, Collier County, Florida

4321-4347, January 1, 1970, as amended 1975 and 1982) and the consultations required under the Endangered Species Act of 1973 (ESA; 7 U.S.C. 136, 16 U.S.C. 1531 et seq. December 28, 1973).

The Corps through NEPA and the ESA will address impacts to fish and wildlife resources. The USFWS, if applicable, will include comments relevant to FWCA in the USFWS response to the Corps ESA coordination letter.

**Agreement.** The undersigned, the Corps and USFWS, agree to utilize the project's NEPA review and ESA consultation processes to complete coordination responsibilities under the FWCA. If no response is received from the USFWS during the NEPA review, the Corps will assume that there are either no relevant comments that pertain to the FWCA or that all comments will be provided during the ESA consultation process. This agreement will avoid duplicate analysis and documentation as authorized under 40 CFR section 1500.4 (k), 1502.25, 1506.4, and is consistent with Presidential Executive Order for Improving Regulation and Regulatory Review, released January 18, 2011.



Roxanna Hinzman  
Field Supervisor  
US Fish and Wildlife Service  
South Florida Ecological Services Office

Alicia Logalbo

Digitally signed by Alicia Logalbo  
Date: 2020.02.24 15:45:46 -05'00'

Alicia Logalbo  
Chief, Environmental Analysis Section  
US Army Corps of Engineers,  
Norfolk District



DEPARTMENT OF THE ARMY  
US ARMY CORPS OF ENGINEERS  
NORFOLK DISTRICT  
FORT NORFOLK  
803 FRONT STREET  
NORFOLK VA 23510-1011

February 4, 2019

Planning and Policy Branch  
Environmental Analysis Section

Mr. Joseph Cavanaugh  
National Oceanic and Atmospheric Administration  
National Marine Fisheries Service  
Habitat Conservation Division  
263 13th Avenue South  
St. Petersburg, Florida 33701-5505

**Re: Request for the Official Protected Species under the jurisdiction of the National Marine Fisheries Service: Collier County Coastal Storm Risk Management Feasibility Study.**

Dear Mr. Cavanaugh:

The U.S. Army Corps of Engineers (USACE), Norfolk District, in sponsorship with Collier County, has initiated the Collier County, Florida Coastal Storm Risk Management Feasibility Study. The study authority is Section 4033 of the Water Resources Development Act of 2007 (Public Law 110-114). The study area includes land and water resources reasonably deemed to be within the vicinity of Vanderbilt, Park Shore, and Naples beaches and inland bay areas, as well as Marco Island, provided they are located within the jurisdictional boundary of Collier County, Florida. Collier County is located on the southwest coast of Florida, about 120 miles south of the entrance to Tampa Bay and about 100 miles north of Key West. Naples is the largest city located along the shoreline in the county. Enclosure 1 provides an overall map of the project study area.

Enclosure 2 shows the currently proposed project areas near the cities of Naples and Marco Island.

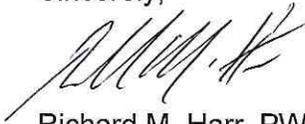
The primary purpose of the project is to reduce potential damages caused by coastal storms and improve human safety and coastal resiliency in Collier County.

Based on the plan formulation to date, potential measures being considered include nonstructural, structural, and natural and nature-based measures. Potential nonstructural measures include elevating structures, flood proofing, and buyouts. Potential structural measures include enhancing dune geometries and enhance berm geometries. And construction of a seawall, storm surge barriers, breakwaters, and groins. Potential natural and nature-based features include oyster reefs, vegetative dune plantings, and mangrove restoration.

The purpose of this letter is to request the "Official Protected Species List" under the jurisdiction of the National Oceanic and Atmospheric Administration, Protected Resources Division, pursuant to Section 7 of the Endangered Species Act. Attachment 2 is the draft list of Protected Species we have compiled to date. We will conduct further coordination with you upon receipt of your official list, and after potential project alternatives are further refined. In addition, we plan to continue Interagency Coordination Meetings as needed to address any consultation issues.

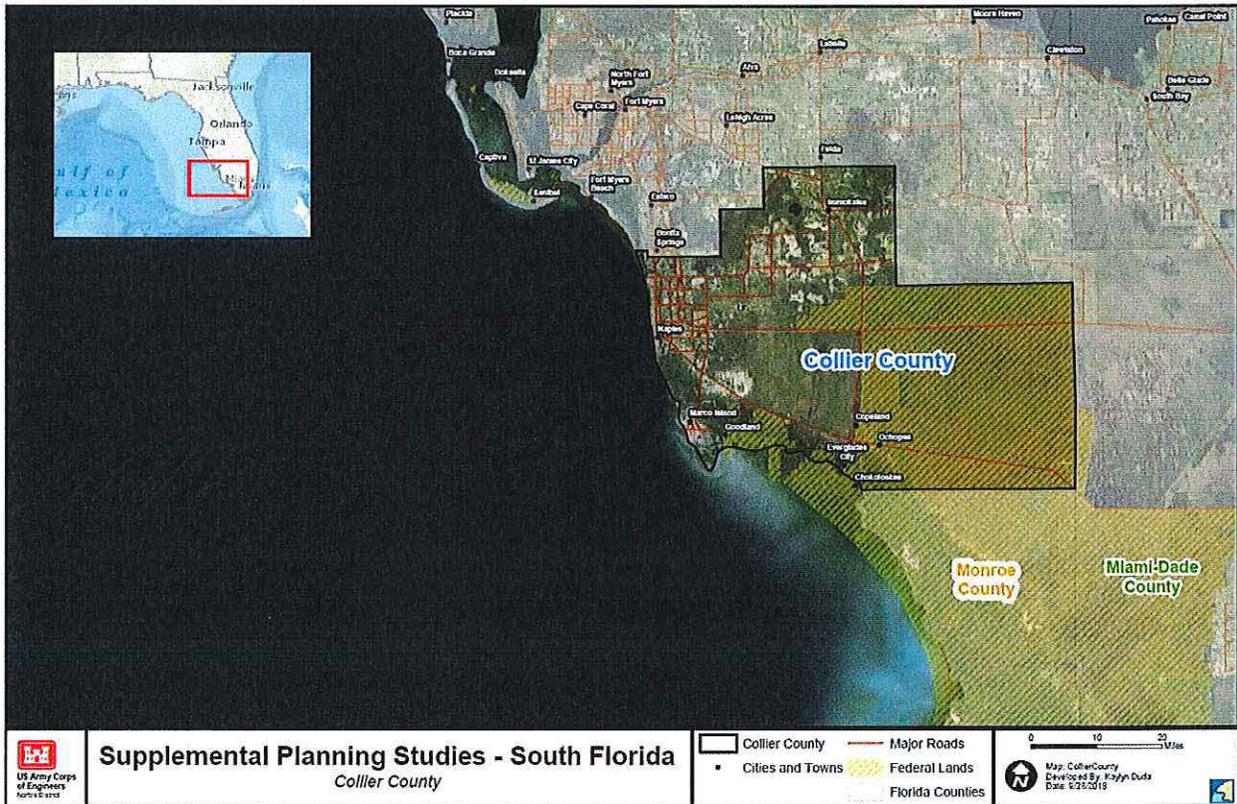
If you have any questions or need additional information, I can be reached via telephone at: (757) 201-7746 or email at [richard.m.harr@usace.army.mil](mailto:richard.m.harr@usace.army.mil). Thank you for your assistance.

Sincerely,

A handwritten signature in black ink, appearing to read "R.M.H.", written in a cursive style.

Richard M. Harr, PWS, CES  
Environmental Scientist  
Environmental Analysis Section

Enclosure 1. Study Area map showing Collier County



Enclosure 2. Project areas near cities of Naples and Marco Island



**From:** [Joseph Cavanaugh - NOAA Federal](#)  
**To:** [Harr, Richard M CIV USARMY CENAO \(US\)](#)  
**Subject:** [Non-DoD Source] Re: Collier County CSRM Feasibility Study Environmental Interagency Meeting #2  
**Date:** Wednesday, February 20, 2019 1:39:18 PM  
**Attachments:** [Collier ESA-listed Species Critical Habitat.docx](#)

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Hi Richard,

I'll call in to this meeting, thanks. I'm attaching a table for you with our ESA-listed species and critical habitat that overlap with Collier County. We can discuss in light of the project activities. We may drop sturgeon off this list and the italicized ones at the back end would not be expected to intersect with your coastal projects but those species are offshore from Collier County.

Let me know if you have any questions or would like to discuss prior to Friday's meeting.

Best regards,

Joe

On Wed, Feb 20, 2019 at 11:51 AM Harr, Richard M CIV USARMY CENAO (US) <[Richard.M.Harr@usace.army.mil](mailto:Richard.M.Harr@usace.army.mil) <<mailto:Richard.M.Harr@usace.army.mil>> > wrote:

\*\*\*Attached are the minutes from meeting #1 and the agenda along with the presentation for meeting #2. Due to the partial Government shutdown we will repeat the study overview from meeting #1 to insure all participants are up to date on the study.\*\*\*

All,

You are invited to attend the second Environmental Interagency Coordination Meeting for the Collier County Coastal Storm Risk Management Feasibility Study on February 22, 2019 from 10 am to 12 pm. This meeting will be conducted by teleconference/webinar unless you are located in the Hampton Roads, Virginia area. The Meeting Agenda and teleconference/webinar information is attached for your convenience.

Please feel free to forward to any other agency members as appropriate, but note this meeting is not open to the public. Should you have any questions, you are welcome to contact me by email or phone. Thank you and we look forward to your participation.

\*\*\*\*Please note this Interagency Meeting is intended for State , Federal, and Local Agencies only. The information provided today is all preliminary and we are looking at feedback for measures/alternatives.

**TELECONFERENCE INFORMATION:**

USA Toll-Free: (877) 336-1829  
Access Code: 9556794  
Security Code: 1234

**WEBEX INFORMATION:**

Blocked<https://usace.webex.com>  
Meeting ID: 965120895

Very Respectfully,

Richard M. Harr, PWS, CES  
Environmental Scientist  
Water Resources Division  
Planning and Policy Branch  
Environmental Analysis Section  
Norfolk District, U.S. Army Corps of Engineers  
803 Front Street  
Norfolk, Virginia 23510  
757-201-7746

--

Joseph Cavanaugh  
Endangered Species Specialist  
NOAA Fisheries <Blocked<https://www.fisheries.noaa.gov/welcome>> Southeast Regional Office  
<Blocked<http://sero.nmfs.noaa.gov/>>  
263 13th Ave. S, St. Petersburg, FL 33701

Species	ESA Listing Status
Green (North Atlantic [NA] distinct population segment [DPS])	T
Green (South Atlantic [SA] DPS)	T
Kemp's ridley	E
Leatherback	E
Loggerhead (Northwest Atlantic [NWA] DPS)	T
Hawksbill	E
Smalltooth sawfish (U.S. DPS)	E
Gulf sturgeon	T
Shortnose sturgeon	E
<i>Giant manta ray</i>	T
<i>Oceanic whitetip shark</i>	T
<i>Sperm whale</i>	E

**Critical Habitat Collier County**

Some areas of Collier County are within NWA Loggerhead Sea Turtle Critical Habitat (nearshore reproductive habitat), Smalltooth Sawfish Critical Habitat (Ten Thousand Islands/Everglades Unit),

**From:** [Joseph Cavanaugh - NOAA Federal](#)  
**To:** [Logalbo, Alicia M CIV USARMY CENAO \(USA\)](#)  
**Subject:** [Non-DoD Source] Marine Mammals Inclusive in Collier County CSRM  
**Date:** Monday, June 1, 2020 4:51:04 PM

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Hi Alicia,

Hope you are doing well. I heard back today from our marine mammal folks on the marine mammals they would likely assess for the CC CSRM. I have some papers and can forward you the email they sent. But based on what they sent me, I think I would go with the following:

NA Right whales: Extremely rare in the action area but can't rule out from 2 recent sightings near shore where they would have likely transited near to if not through the AA. I would say NLAA and discountable on both the actions and unlikely occurrence.

Byrdes whales: I think based on what I have read and what marine mammal folks sent me, I would say NE for this species or not present - NE all the same.

Sperm whales: Remote possibility that they would be in the offshore borrow area and if they were, extremely unlikely to be anywhere near the dredge(s) based on all the dredging data in the GOM. I would state possible presence but NLAA for them.

So you've got 2 NLAAs and 1 NE for whales for Collier County.

Hope every little bit makes it easier for you. I will send you a few of the papers they sent me and their response and you can use some of this in your BA without quoting directly of course.

Let me know if you have any questions.

Cheers,

-Joe

--

Joseph Cavanaugh  
Endangered Species Specialist  
NOAA Fisheries <[Blockedhttps://www.fisheries.noaa.gov/welcome](https://www.fisheries.noaa.gov/welcome)> Southeast Regional Office  
<[Blockedhttp://sero.nmfs.noaa.gov/](http://sero.nmfs.noaa.gov/)>  
263 13th Ave. S, St. Petersburg, FL 33701  
<[Blockedhttps://lh6.googleusercontent.com/rYVjVAeL-vS2OUClyfwiY1mGTSwgLObzOUNcm9fzMLpKLHpKAGnZSJallKX3dZRCyw-XChiPO7hdL7KEJu1coBvfd5r2j22EJEjQId2OI-ICkJ0kk3Djfgq9FYu8ySFFFoknPwM](https://lh6.googleusercontent.com/rYVjVAeL-vS2OUClyfwiY1mGTSwgLObzOUNcm9fzMLpKLHpKAGnZSJallKX3dZRCyw-XChiPO7hdL7KEJu1coBvfd5r2j22EJEjQId2OI-ICkJ0kk3Djfgq9FYu8ySFFFoknPwM)>



DEPARTMENT OF THE ARMY  
US ARMY CORPS OF ENGINEERS  
NORFOLK DISTRICT  
FORT NORFOLK  
803 FRONT STREET  
NORFOLK VA 23510-1011

February 4, 2019

Planning and Policy Branch  
Environmental Analysis Section

Mr. Mark Sramek  
National Oceanic and Atmospheric Administration  
National Marine Fisheries Service  
Habitat Conservation Division  
263 13th Avenue South  
St. Petersburg, Florida 33701-5505

**Re: Request Official Listing of Essential Fish Habitat: Collier County Coastal Storm Risk Management Feasibility Study.**

Dear Mr. Sramek:

The U.S. Army Corps of Engineers (USACE), Norfolk District, in sponsorship with Collier County, has initiated the Collier County, Florida Coastal Storm Risk Management Feasibility Study. The study authority is Section 4033 of the Water Resources Development Act of 2007 (Public Law 110-114). The study area includes land and water resources reasonably deemed to be within the vicinity of Vanderbilt, Park Shore, and Naples beaches and inland bay areas, as well as Marco Island, provided they are located within the jurisdictional boundary of Collier County, Florida. Collier County is located on the southwest coast of Florida, about 120 miles south of the entrance to Tampa Bay and about 100 miles north of Key West. Naples is the largest city located along the shoreline in the county. Enclosure 1 provides an overall map of the project study area.

Enclosure 2 shows the currently proposed project areas near the cities of Naples and Marco Island.

The primary purpose of the project is to reduce potential damages caused by coastal storms and improve human safety and coastal resiliency in Collier County.

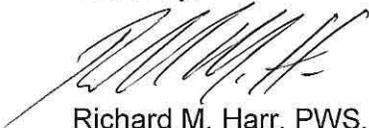
Based on the plan formulation to date, potential measures being considered include nonstructural, structural, and natural and nature-based measures. Potential nonstructural measures include elevating structures, flood proofing, and buyouts. Potential structural measures include enhancing dune geometries and enhance berm geometries. And construction of a seawall, storm surge barriers, breakwaters, and groins. Potential natural and nature-based features include oyster reefs, vegetative dune plantings, and mangrove restoration.

At this time, the U.S. Army Corps of Engineers is requesting the official listing of Essential Fish Habitat that occurs within the potential area of impact of the project. We will conduct

further coordination with you upon receipt of your official list, and after potential project alternatives are further refined. In addition, we plan to continue Interagency Coordination Meetings as needed to address any coordination issues.

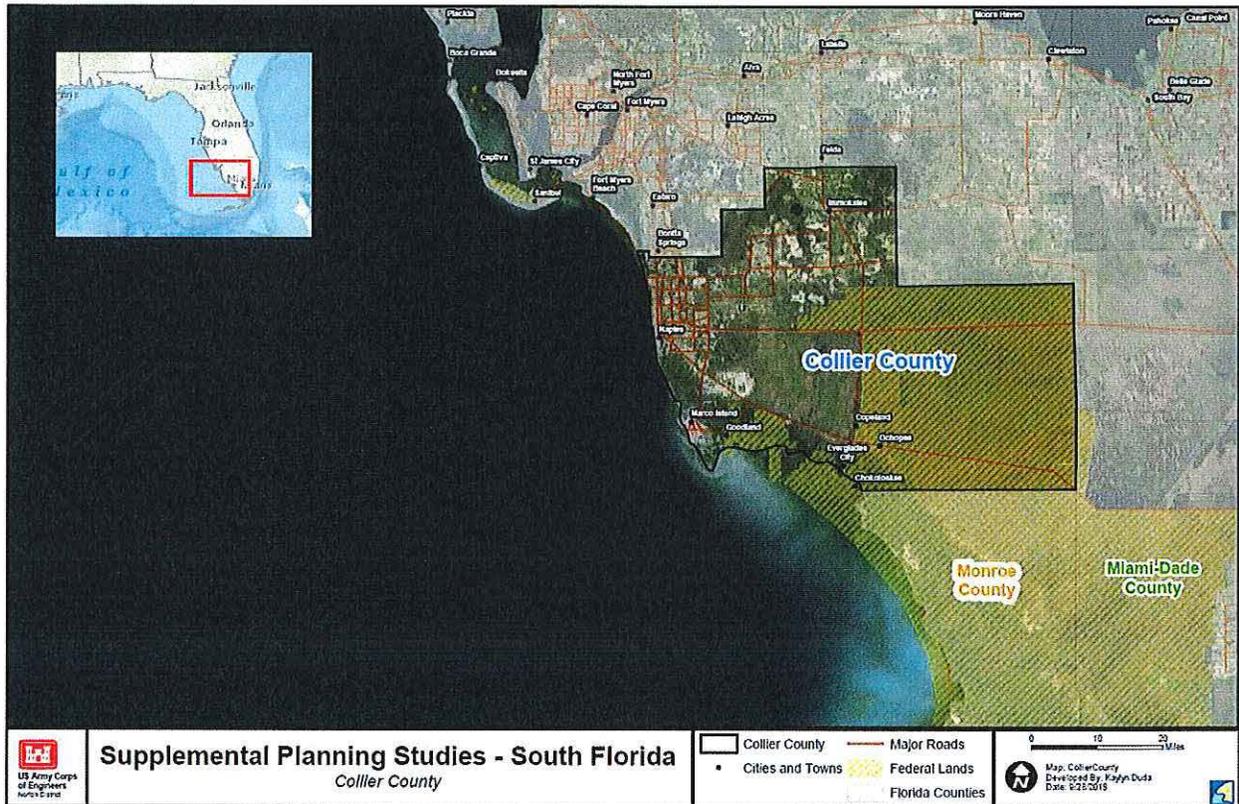
If you have any questions or need additional information, I can be reached via telephone at: (757) 201-7746 or email at [richard.m.harr@usace.army.mil](mailto:richard.m.harr@usace.army.mil). Thank you for your assistance.

Sincerely,

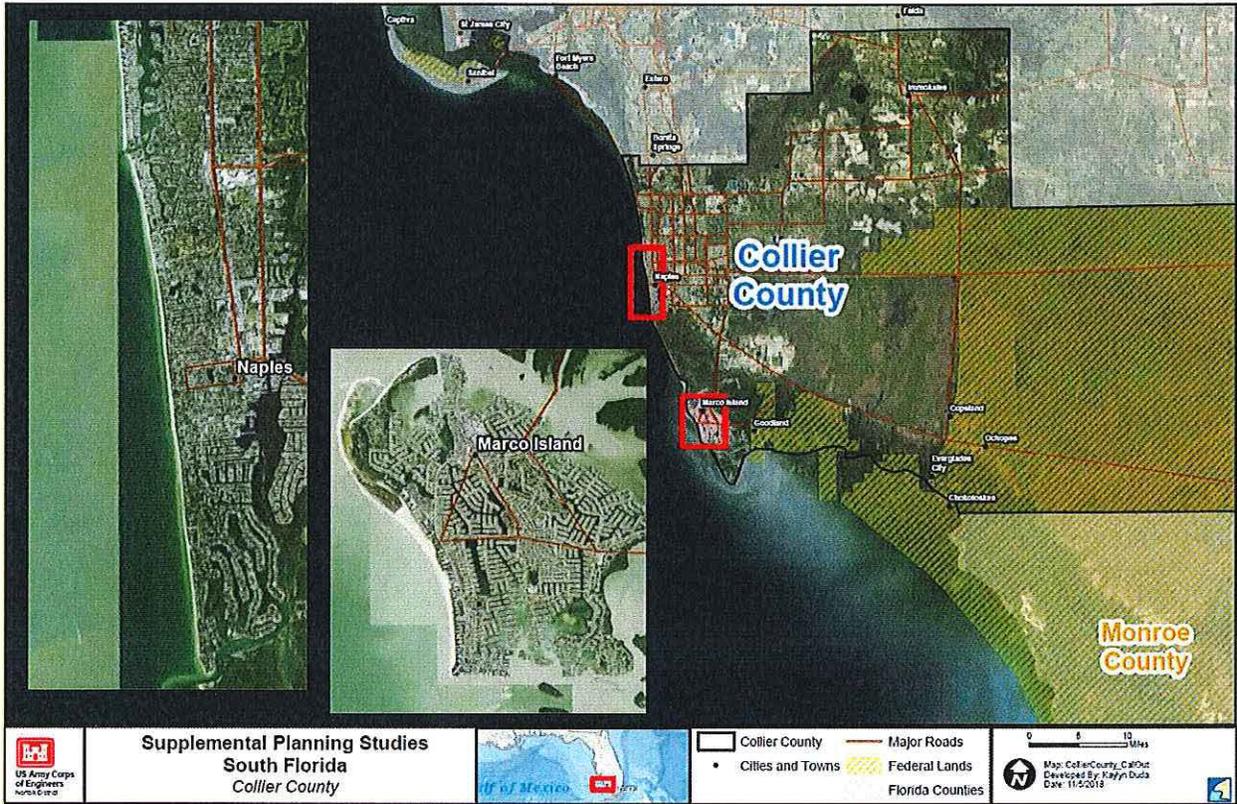
A handwritten signature in black ink, appearing to read 'R. M. Harr', written in a cursive style.

Richard M. Harr, PWS, CES  
Environmental Scientist  
Environmental Analysis Section

Enclosure 1. Study Area map showing Collier County



Enclosure 2. Project areas near cities of Naples and Marco Island



# COLLIER COUNTY COASTAL STORM RISK MANAGEMENT FEASIBILITY STUDY

NEPA Public Scoping Meeting - December 6, 2018 (6 p.m. - 8 p.m.)  
 All attendees please sign in here and provide your contact information

Name and Organization (if applicable)	Address	Phone Number	Email	Would you like to be added to the mailing list for this project (Yes/No)?
Wanda Kopt 28/Water Groups	1231 <del>1231</del> Rosewood Lane	239 777 9633	NaplesShips Store Napleswanda@gmail.com	YES
Dennis P. Vasey Water Symposium of Florida	701 Retreat DR 215 Naples FL 34110	239 777 9740	dennisvasey@gmail.com	Yes
STARJ CHRZANOWSKI RETIRED PERSON	2504 SAILORS WAY NAPLES FL 34109	239-598-0922	SCHRZANOWSKI2 @COMCAST.NET	YES
James Madison	504 E. 1st St 4570 GULF SHORE DR	239 641 0022	seechase naples@ gmail.com	yes
Alyson McAlpin	Collier County	239-252-5366	GaryMcAlpin@collier.gov	Yes
Stephanie Molloy	City of Naples	239-213-1031	smolloy@naplesgov.com	Yes
Jesse Pardon	NABOR	734-516-1688	Jesse@nabor.com	Yes
Michael Savaresi	FGCU	239-289-1163	msavares@fgcu.edu	yes
John Gray	4001 Gulf Shore Blvd N Unit 807	339 225 5812	jetpilot1000@gmail.com	Yes
Brian D Wood	4001 No. Gulf Shore Naples			No



# COLLIER COUNTY COASTAL STORM RISK MANAGEMENT FEASIBILITY STUDY

NEPA Public Scoping Meeting - December 6, 2018 (6 p.m. - 8 p.m.)  
 All attendees please sign in here and provide your contact information

Name and Organization (if applicable)	Address	Phone Number	Email	Would you like to be added to the mailing list for this project (Yes/No)?
Lauren Floyd, APTIM				
Ian Barnwell	ian.barnwell@colliercountyfl.gov	252-2354		Y
Corey McCloskey	Corey@palmwooden	289-4538		Y

# COLLIER COUNTY COASTAL STORM RISK MANAGEMENT FEASIBILITY STUDY

Please note this is not a questionnaire. The intent of this form is to allow the public and other interested parties to provide written comments to the project.

Name	Organization (if applicable)	Phone Number	Email
John E. Gray Jr.	Home Owner.	339 225 5812	jibgray2014@gmail.com

Please provide your written comment(s) below. If providing comments on multiple sheets, please be sure to number each sheet and provide your name on each sheet.

As a resident of Park Shores community in Naples, Fla. I am severely impacted by the red tide and fish kill problem. This situation has become literally at Biblical plague proportions. The quality of our coastal environment has become completely intolerable!! I tried to live here through the summer this year since we a full time residence right on the beach in Surfside condominiums and found it impossible to live in my own home. The air instantly choked me and my wife so that we couldn't breathe! The fish rotting on our beautiful beach was a stench that we couldn't be around. We had to flee our own home! For the summer. Something has gone so wrong! I'm not buying the hurricane being responsible any longer. It's been over a year. I WANT answers! Now. The red tide is still unbearable even now when the H<sub>2</sub>O temps are low! What is the plan! This is a disaster! Please respond.

# COLLIER COUNTY COASTAL STORM RISK MANAGEMENT FEASIBILITY STUDY

Please note this is not a questionnaire. The intent of this form is to allow the public and other interested parties to provide written comments to the project.

Name	Organization (if applicable)	Phone Number	Email
Vasey, Dennis P.		239 777 9740	dennisvasey@gmail.com

Please provide your written comment(s) below. If providing comments on multiple sheets, please be sure to number each sheet and provide your name on each sheet.

Why only "protected" species?  
No mention of wetlands or marsh!  
Ecological Services benefits.  
Habitat.

**From:** [CollierMindy](#)  
**To:** [Harr, Richard M CIV USARMY CENAO \(US\)](#); [Swisher, Ian T CIV USARMY CENAO \(US\)](#); [Trinkala, Walter CIV USARMY CENAO \(US\)](#); [Daniel Dourte](#); [Conner, Susan L CIV \(USA\)](#)  
**Cc:** [McAlpinGary](#)  
**Subject:** [Non-DoD Source] FW: Public Meeting regarding the Beaches  
**Date:** Thursday, December 6, 2018 10:39:05 AM  
**Attachments:** [image001.jpg](#)  
[Beach 3-29\\_002.JPG](#)  
[Beach 3-29\\_003.JPG](#)

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Your first public input!! See you this evening!

Mindy Lee Collier

Project Manager - Stormwater

Growth Management Department

239-252-6139

From: Michael Field <msfield@optonline.net>  
Sent: Thursday, December 6, 2018 10:09 AM  
To: CollierMindy <Mindy.Collier@colliercountyfl.gov>  
Cc: Marilyn Duarte <maduardt@gmail.com>  
Subject: RE: Public Meeting regarding the Beaches

Hi Mindy

I am, and have been, very interested in the challenge of maintaining our beaches ever since I moved to Florida in 2004. So I am particularly sorry to miss the meeting this evening.

Here are my brief thoughts on the subject in case they are useful.

From 2004 until 2015 I lived at the Gulf View Beach Club, two buildings south of Doctors Pass.

That stretch of beach was an ongoing erosion problem largely because of the blocking effect of the Doctors Pass rock breakwaters.

Sand would accumulate on the north side and deplete on the south side – particularly when the prevailing winds were from the north. Also the absence of any breakwaters further to the south meant the sand moved south unimpeded.

In addition to working with Gary McAlpin and then Mayor John Sorey to facilitate the regular and emergency beach replenishments, we explored and proposed off shore breakwaters and a curve to the Doctors Pass south groin to break up the wave action and reduce erosion.

(See attached photos of early unaddressed erosion)

Since then, the changes to the Doctors Pass groin and the experimental addition of offshore breakwaters have created a dramatic improvement to beach retention south of Doctors Pass.

(The use of offshore breakwaters – parallel to the beach – I believe have been used successfully in parts of the Mediterranean for many years)

My suggestion would be to try similar offshore breakwaters at other selected problem areas such as the public beach at Seagate – which is visible to me from where I now live.

I see the same effect – on a smaller scale – being caused by the Seagate groin, as I saw at Doctors Pass.

Such off shore breakwaters not only reduce or reverse beach erosion – they also provide a habitat for fish and other marine life.

I think such breakwaters are worth serious consideration.

Michael Field

From: CollierMindy [<mailto:Mindy.Collier@colliercountyfl.gov>]

Sent: Tuesday, November 27, 2018 1:26 PM

To: msfield@optonline.net <<mailto:msfield@optonline.net>> (see attached photos of the prior erosion.)

Subject: Public Meeting regarding the Beaches

The U.S. Army Corps of Engineers (USACE) and Collier County, Florida invite the public to attend a National Environmental Policy Act (NEPA) Public Scoping Meeting in Naples, Florida regarding the Collier County Hurricane and Storm Damage Reduction Project. The format of the meeting will be an informal open-house, where the public can attend any time during the meeting hours (6 PM to 8 PM) and staff from the USACE and Collier County will be available to answer questions and receive comments from the public.

Please see and distribute the attached notice to your membership.

Mindy Lee Collier

Project Manager - Stormwater

Growth Management Department

239-252-6139

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Under Florida Law, e-mail addresses are public records. If you do not want your e-mail address released in response to a public records request, do not send electronic mail to this entity. Instead, contact this office by telephone or in writing.

# Naples Daily News

PART OF THE USA TODAY NETWORK

Published Daily  
Naples, FL 34110

U.S. ARMY CORPS OF ENGINEERS, NORFOLK  
803 FRONT STREET

NORFOLK, VA 23510

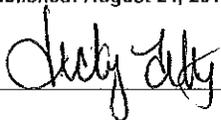
## Affidavit of Publication

STATE OF WISCONSIN  
COUNTY OF BROWN

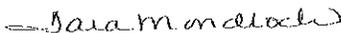
Before the undersigned they serve as the authority, personally appeared said legal clerk who on oath says that he/she serves as Legal Clerk of the Naples Daily News, a daily newspaper published at Naples, in Collier County, Florida; distributed in Collier and Lee counties of Florida; that the attached copy of the advertising was published in said newspaper on dates listed. Affiant further says that the said Naples Daily News is a newspaper published at Naples, in said Collier County, Florida, and that the said newspaper has heretofore been continuously published in said

Collier County, Florida; distributed in Collier and Lee counties of Florida, each day and has been entered as second class mail matter at the post office in Naples, in said Collier County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that he has neither paid nor promised any person, or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

Published: August 24, 2019, August 25, 2019, August 26,  
2019



Subscribed and sworn to before on August 26, 2019:



Notary, \_\_\_\_\_

TARA MONDLOCH  
Notary Public  
State of Wisconsin

My commission expires August 6, 2021

## Collier County, Florida Coastal Storm Risk Management Feasibility Study Public Informational Meeting

The U.S. Army Corps of Engineers (USACE) and the non-Federal Sponsor, Collier County, Florida, invite the public to attend an informational public meeting on the Collier County Coastal Storm Risk Management Feasibility Study. The meeting will be held on September 9th, from 5:00 p.m. - 7:00 p.m. at the Collier County Administrative Building, 3299 Tamiami Trail East, Bldg. F, 3rd Floor, Naples, FL 34112. A presentation on the study will start at 5:00 p.m. followed by time to review study poster boards and ask questions about the study.

The purpose of the meeting is to provide the public an opportunity to learn more about the project alternatives and to make comments on the alternatives or the feasibility study. The USACE plans to prepare an Environmental Impact Statement to evaluate environmental impacts from reasonable project alternatives and to determine the potential for significant impacts.

The public is invited to submit comments at the meeting and/or submit comments by October 12, 2019 to David Schulte, USACE, via email/mail/telephone at David.M.Schulte@usace.army.mil; by mail to ATTN: David Schulte, Department of the Army, U.S. Army Corps of Engineers, Norfolk District, Fort Norfolk, 803 Front St., Norfolk, VA 23510; or by phone to (757)201-7746.

Feasibility Study Website:  
<https://www.saj.usace.army.mil/CollierCountyCSRMFfeasibilityStudy/>  
Pub Dates: 8/24, 8/25, 8/26,  
2019 #3747909

Publication Cost: \$619.50  
Ad No: 0003747909  
Customer No: 7572017837USAR  
PO #:



US Army Corps  
of Engineers®

USACE

News Release

# Collier County Coastal Storm Risk Management Feasibility Study public informational meeting set

Published Aug. 29, 2019

The U.S. Army Corps of Engineers and the non-Federal Sponsor, Collier County, Florida, invite the public to attend an informational public meeting on the Collier County Coastal Storm Risk Management Feasibility Study.

The Corps and county will host the meeting Sept. 9, from 5-7 p.m., at the Collier County Administrative Building, 3299 Tamiami Trail East, Bldg. F, 3<sup>rd</sup> Floor, Naples, FL 34112. A presentation on the study will start at 5 p.m. followed by time to review study poster boards and ask questions about the study.

The purpose of the meeting is to provide the public an opportunity to learn more about the project alternatives and to make comments on the alternatives or the feasibility study. The USACE plans to prepare an Environmental Impact Statement to evaluate environmental impacts from reasonable project alternatives and to determine the potential for significant impacts.

The public is invited to submit comments at the meeting and/or submit comments by Oct. 12, 2019 to David Schulte via email/mail/telephone at [David.M.Schulte@usace.army.mil](mailto:David.M.Schulte@usace.army.mil); by mail to ATTN: David Schulte, Department of the Army, U.S. Army Corps of Engineers, Norfolk District, Fort Norfolk, 803 Front St., Norfolk, VA 23510; or by phone to (757)201-7746.

The feasibility study website is located at <https://www.saj.usace.army.mil/CollierCountyCSRMFfeasibilityStudy/>.

## Contact

Patrick Bloodgood  
757-201-7606  
[Patrick.j.bloodgood@usace.army.mil](mailto:Patrick.j.bloodgood@usace.army.mil)

Release no. 19-058

# Collier County Coastal Storm Risk Management Feasibility Study – Public Meeting

3299 Tamiami Trail East, BOCC Room, Building F, Naples, FL 34112

September 9, 2019 5-7pm

All attendees please sign in here and provide your contact information

Name and Organization (if applicable)	Address	Phone number	Email	Would you like to be added to the mailing list for this project? (Yes/No)?
DON HAMILTON CCSO VOL		3129611229	DONOHAMEAOL.COM	YES
JOEL T. JONNSEN				
Debbie Roddy		2393944832	droddy46@gmail.com	yes
MARTIN Roddy		239-394-4832	mroddy57@gmail.com	yes
JOHN GODDARD		646 270 0131	rtgoddard@gmail.com	yes
ROS BURKA		Council	Naples	

Name and Organization (if applicable)	Address	Phone number	Email	Would you like to be added to the mailing list for this project? (Yes/No)?
ROBERTA HAYES				
Dennis P. Vasey	701 Retreat Dr UNIT 215 Naples FL 34110	239 777 9740	dennisvasey@gmail.com	Yes
STAN CARZONOWSKI	2504 Sarcolor Way	631-8161	schrzaronowski2@comcast.net	
NORMAN TREBILCOCK	2800 DAVIS BLVD, STE 200 NAPLES, FL 34104	239-248 3883	NTREBILCOCK@ TREBILCOCK.BIZ	YES
MRS MARY E FINSTAD	561 PORTSMOUTH Ct Naples,	239-250 2795		Yes.
Rick LoCastro	1560 BUCCANEER CT Marco Island FL 34145	239- 777-2452	RickLoCastro@ HOTMARCO.COM	YES
Howard Reed	1045 Bald Eagle Dr Marco Island, 34145	574-527- 7425	Howard@ HowardReed.com	YES
Joanna Forspania	6001 Pelican Bay Blvd. Naples	(239) 963-7170	joannakaczerska@ yahoo.co.uk	Yes
RICH & PAUL CARLWELL	615 98TH AVE. N NAPLES 34108	203-233-1722	RICH@PAUL@ CARLWELL.COM	L

Name and Organization (if applicable)	Address	Phone number	Email	Would you like to be added to the mailing list for this project? (Yes/No)?
Tom Morr			thomas.morr@outlook.com	yes
Kathy Worley			kathyw@conservancy.org	yes
CHRIS BYRNE			CBYRNE@CITYOFMARCOISLANDS.COM	yes
Kael Schaeider			kschaeider@gannett.com	NO
Stephanie Eby	4041 GSBW #508	239-261-4001	stephanieeb@yaho.com	yes
TIM PINTER	50 BULL WALK MARCO ISLANDS	239-389-5000	tpinter@cityofmarcoislands.com	YES
Michael McCabe	1200 Gulf Shore Blvd N.		michaelmccabe@westmail.com	yes
Tonia Scheski		239-389-3949	tscheski@cityofmarcoislands.com	yes
Beverly Feagin				

Name and Organization (if applicable)	Address	Phone number	Email	Would you like to be added to the mailing list for this project? (Yes/No)?
Ded Miller	1582 Northgate	239.649.477	dedmiller@me.com	Yes
BRUCE EBY SAVOY CONDO	4041 GIBSON #502 MAPLES PK 34103	239-261-4801	beoeebye@comcast.net	YES
Keith Laakkonen	Rookery Bay 300 Towers Rd		Keith.Laakkonen@dep.state.fl.us	
ACD, A2	1259 Maitland Ave Marco Island	239 438-5752		
PETER HILL	1150, DIMOCK LANE COLLIER RESERVE NAPLES, FL 34110	713.264.3371		
Dad Raymond	6932 Brentanna	239-269-6707		—
KATHY ROBBINS VBRA	10525 GULF SHORE DR #231 34108	239-273-7099	KATHYROBBINS@YAHOO.COM	YES
Peter Fleming	1925 Wading Oaks	811-7450	PFLFLEMING@AOL.COM	yes
Marta Meda	364 Seagull Ave	239-514-7484	marta meda@hotmail.com	Yes



Name and Organization (if applicable)	Address	Phone number	Email	Would you like to be added to the mailing list for this project? (Yes/No)?
Judith Hushon	81 Seagate Dr #1501 34103	239-643 6222	judyhushon@aol.com	Yes
Neil Ma	555 8th St. N. 34102	409-290 2369	Neil@MaoreStudios.com	Yes
<del>Greg</del> STRAKALUSE City of Naples		213 5000	gstrokaluse@naples.gov.com	YES
Don Mann	15743 Villapresi Way		expendable19@aol.com	YES
Stephanic molloy City of Naples		213 1031	smolloy@naplesgov.com	Yes
GREGORY WUP	7604 GARIBALDI CT NAPLES	732-672 4881	pcwppw1p@gmail.com	Yes
ANDERSON HARWELL	7605 GARIBALDI CT NAPLES	941 468 6187	ANDYHARWELL@ICLOUD.COM	YES
Joye Fletcher	2148 Paget Circle Naples	239-417- 0240	jb.fletcher@embargmail.com	Yes
Steve Keehn	1111 George Bush Blvd #4, Delray Beach FL 33483	561-391- 8102	Stephen.Keehn@Aptim.com	yes.

Name and Organization (if applicable)	Address	Phone number	Email	Would you like to be added to the mailing list for this project? (Yes/No)?
Charlette Roman			croman@stwm.d.gov	yes
Patricia Forkan	Naples		pforkan@comcast.net	YES
PAUL PERRY	1730 3RD ST S NAPLES FL 34102	614-203-7800	PAUL.PERRY5@3CLOUD.COM	YES
JAROSLAWA SZCZERBANIUK	181 CARIBBEAN RD Naples		stepes2slava@msa.com	YES
CHRIS WASHBURN NAPLES B.C.	4820 BATHURST DRIVE NAPLES, FL 34112		CHRISW@NAPLES&GARDEN.ORG	YES
M Chappel	Pelican Bay Naples		Chappel@me.com	NO
Cathy Dowd	6548 Birchwood Ct Naples		Kelly@comcast.net	NO
Robert Rossby	6532 Blackstone Ct.		robert.rossby@gmail.com	yes
Mel & Lou Ellis	8462 Karimct 34114			

Name and Organization (if applicable)	Address	Phone number	Email	Would you like to be added to the mailing list for this project? (Yes/No)?
Clark Hill Hilton Naples	5111 Tamiami Tr. N. Naples, FL 34103	239/430-4900	chill@cooperhotels.com	Yes
Lauren Floyd APTIM	1589 Fulmar Dr. Delray Beach FL 33444	—	laurens.floyd@gmail.com	Yes
Ray Christman Naples City Council	267 6 <sup>th</sup> St N Naples, FL 34102	404-909-2235	ChristmanR@BellSouth.NET	Yes
TAMI SCOTT	Bayshore CRA	239-252-8445	TAMI.Scott@CollierGov.net	Yes
Denise McLaughlin Arthur Kirsch	6001 Pelican Bay Blvd Naples	917 863 0690	denise.mcl@Aur.ca	Yes
Russell Zucconi	Hutton Naples	—	hrstrand@Cooperhotels.com	Yes
Brett Moore	5679 STRAND CT. NAPLES 34110	239-825-6516	bdm@humistonandmohr.com	Yes
AURIN RITCHIE	4801 BONITA BLVD SW BONITA SPRINGS	239-777-3730	RITCHIE2000@aol.com	Yes
Frank Perucci,	1848 Harbor Place Naples 34104	239-370-5986	Empire@jmi.com	Yes

Name and Organization (if applicable)	Address	Phone number	Email	Would you like to be added to the mailing list for this project? (Yes/No)?
Terry Hutchinson Naples City Council	1075 7 <sup>th</sup> Ave N Naples, FL 34102	239-771-1642	T Hutchinson@naplesgov.com	Yes
Darrel Smith Marco Island City	50 Bald Eagle Marco Island	239 389 5021	Dsmith@cityofmarco Island.com	Yes
Ellen Seigel Naples City Council	4053 Crayton Rd Naples 34103	239 - 207 - 0806	eseigel@ naplesgov.com	Yes
Jack West County Tourist	3860 Horseshoe Dr. Naples FL	239-252- 240	Jack.West@collier CountyFL.gov	Yes
Angela Goodner	193 Edgemore Way S	239-252- 8602	angela@angelagoodner.com	Yes



US Army Corps of Engineers

# Comment Card

Information on this card will be used to notify you of additional project information.



## Name and Mailing Address:

(Information used to create mailing list)

Name Patti Forkan

Address \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_ Zip \_\_\_\_\_

Email pforKan@comcast.net

Phone \_\_\_\_\_

Please place your comments on the back of this card

## Who are you representing?

Self  
 Organization – Please provide the name of the organization

Federal/State/Local Government Agency – Please provide the name of the Agency:

## Send written comments/questions to:

Planning and Policy Branch  
Attn: David Schulte  
U.S. Army Corps of Engineers  
803 Front Street  
Norfolk, VA 23510

Email: [David.M.Schulte@usace.army.mil](mailto:David.M.Schulte@usace.army.mil)

Phone: (757) 201-7007

Goodland +  
East Naples

enormous development  
occurring + no study  
efforts in this area

Concerned only wealthy  
areas - are being considered  
not lower income areas

East 41 -

No NIMF here but  
devlpt continues

Goodland previously

damaged by IRMA



US Army Corps  
of Engineers

# Comment Card

Information on this card will be used to notify you of additional project information.



## Name and Mailing Address:

(Information used to create mailing list)

Name John Goddard

Address 8290 Josefa Way

City Naples

State FL Zip 34114

Email rtgoddard

Phone 646 270 0131

*Please place your comments on the back of this card*

## Who are you representing?

Self

Organization – Please provide the name of the organization

Federal/State/Local Government Agency – Please provide the name of the Agency:

## Send written comments/questions to:

Planning and Policy Branch

Attn: David Schulte

U.S. Army Corps of Engineers

803 Front Street

Norfolk, VA 23510

Email: [David.M.Schulte@usace.army.mil](mailto:David.M.Schulte@usace.army.mil)

Phone: (757) 201-7007

Has this project  
considered the defense  
of Collier County  
from Coastal Storm  
surge arising along  
Collier's southern  
coast from Everglades  
City to the Rookery?  
If not why not.

**US Environmental Protection Agency (EPA) Scoping Comments  
for  
Norfolk District, U.S. Army Corps of Engineers (USACE)  
Collier County Coastal Storm Risk Management Study (CSRМ) National Environmental  
Policy Act (NEPA) Document  
December 10, 2018**

**Background:** On November 20, 2018, the U.S. Environmental Protection Agency (EPA) received a letter from the Norfolk District, USACE as the lead Federal agency announcing that the scoping process had been initiated for the Collier County Coastal Storm Risk Management (CSRМ) Feasibility Study and National Environmental Policy Act (NEPA) document. The EPA understands that the USACE has not decided whether to prepare an Environmental Assessment or Environmental Impact Statement and will determine the level of NEPA later in the process. As stated in your letter, the purpose of the project is to reduce potential damages caused by coastal storms and improve human safety and coastal resiliency in Collier County, Florida. The EPA recently accepted USACE's invitation to become a cooperating agency on November 28, 2018. The below scoping comments are based on the very limited information that has been provided by USACE.

**Technical Comments and Recommendations:**

**Wetlands:** The EPA recommends the USACE avoid and minimize impacts to wetlands and mitigate wetland impacts according to Clean Water Act Section 404(b)(1) Guidelines and related regulations. Dredging activities could cause salinity levels to increase, which could convert freshwater/brackish wetlands into saltwater marshes. The EPA also recommends the USACE evaluate potential impacts 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 impacts as appropriate. Additionally, the EPA recommends that the USACE avoid, minimize and mitigate any impacts to Submerged Aquatic Vegetation (SAVs).

**Water Quality:** The EPA recommends the USACE evaluate potential impacts 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 impacts during the risk management study process.

**Groundwater and Drinking Water:** The EPA notes that saltwater intrusion is presently an issue with the Floridan aquifer, which is a drinking water source for most of Collier County. The EPA recommends the USACE fully and rigorously evaluate the proposed projects impacts on the Floridan Aquifer especially regarding impacts related to saltwater intrusion.

**State and Federal Protected Lands:** The EPA notes that the project study area is near highly valued national and state protected lands such as Everglades National Park, Ten Thousand Islands National Wildlife Refuge, Rookery Bay National Estuarine Research Reserve, and Collier-Seminole State Park. The EPA recommends that the USACE avoid, minimize and mitigate any project impacts to these protected lands and disclose any impacts in the NEPA document. The EPA also recommends the USACE include the federal and state trustees of these lands (National Park Service, US Fish and Wildlife Service and Florida Department of Environmental Protection) as cooperating agencies and/or members of the Project Delivery Team.

**Transportation Infrastructure:** The EPA notes that the USACE indicates that surface transportation infrastructure might be improved to better accommodate evacuation from impending hurricanes and storms. For NEPA disclosure, the EPA recommends the USACE discuss any potential transportation improvements especially improvements that might involve expanding transportation infrastructure capacity or construction of any potential new transportation infrastructure. If possible, the EPA also recommends the USACE discuss the number of vehicles these surface transportation projects might increase especially on a daily basis. Also related to transportation improvements, the EPA recommends the USACE disclose any noise or air quality impacts to businesses and neighborhoods. If possible, the EPA recommends that any new transportation projects avoid neighborhoods especially vulnerable communities such as environmental justice communities, elderly facilities and facilities associated with children (i.e., daycares, schools, etc.). The EPA also recommends the USACE include the Florida Department of Transportation (FDOT) in any discussions regarding transportation improvements.

**Noise:** As previously discussed, the EPA recommends the USACE discuss noise related impacts associated with any transportation improvements especially features that would expand capacity within the draft NEPA document. The EPA also recommends that the new transportation routes and expanded transportation infrastructure avoid residential neighborhoods and sensitive communities such as environmental justice, children and elderly communities. When appropriate, the EPA recommends the implementation of noise minimization measures (such as noise walls, barriers, vegetative buffers, etc.) as described in FDOT and Federal Highway Administration (FHWA) regulations.

**Air Quality:** As previously discussed, the EPA recommends the USACE discuss air quality (i.e., mobile source air toxics-MSATs) related impacts associated with any transportation improvements especially features that would expand capacity within the draft NEPA document. The EPA also recommend that the new transportation routes and expanded transportation infrastructure avoid residential neighborhoods and sensitive communities such as environmental justice, children and elderly communities.

**Environmental Justice (EJ):** Also related to the previous comments, the EPA recommends the USACE disclose any impacts to EJ communities especially related to increases in traffic through low income, minority communities. An increase in traffic through EJ communities could

increase health impacts associated with air quality (i.e., MSATs) and noise. When possible, the EPA recommends the USACE avoid and minimize impacts to EJ communities.

**Recreation:** The EPA recommends the USACE document any impacts to tourism and recreation (even temporary) such as beach closures, commercial and recreational fishing impacts, park and boat ramp closures, impacts to diving and snorkeling, etc. Additionally, the EPA recommends the USACE document and disclose any impacts to the local community and economy due to potential impacts to the recreation and tourism industry.

**Socioeconomic:** The EPA acknowledges the USACE's economic analysis and the benefits to cost ratio that is produced for USACE feasibility studies. For NEPA disclosure, the EPA encourages the USACE to also consider any economic losses due to temporary impacts to the tourism and recreation industry.

**Green Infrastructure:** When possible, the EPA encourages the USACE to use green and sustainable infrastructure as project measures or features. The EPA also encourages the USACE to consider the concepts of living shorelines and other natural features to reduce damages from storms.

Please feel free to contact Jamie Higgins at [higgins.jamie@epa.gov](mailto:higgins.jamie@epa.gov) or 404-562-9681.

## Logalbo, Alicia M CIV USARMY CENAO (USA)

---

**From:** Logalbo, Alicia M CIV USARMY CENAO (USA)  
**Sent:** Friday, January 31, 2020 3:48 PM  
**To:** Heather\_Hitt@fws.gov; Jeffrey\_Howe@fws.gov; Jeffery\_Howe@fws.gov; kipp.frohlich@myFWC.com; douglas.piatkowski@boem.gov; Jennifer.Bucatari@boem.gov; robert\_johnson@nps.gov; barton.rogers@boem.gov; christopher\_kavanagh@nps.gov; Andrew.jungman@dot.state.fl.us; steven.james@dot.state.fl.us; Justin.lashley@FloridaDEP.gov; higgins.jamie@epa.gov; keith.laakkonen@FloridaDEP.gov; roxane.dow@FloridaDEP.gov; Kenny.carmola@FloridaDEP.gov; Joanna.walczak@FloridaDep.gov; melissa.alvarez@noaa.gov; Vicki.Garcia@MyFWC.com; pace.wilber@noaa.gov; Higgins.Jamie@epa.gov; andy.strelchek@noaa.gov; noah.silverman@noaa.gov; sramek.mark@noaa.gov; Cavanaugh.joseph@noaa.gov; gregory.garis@dep.fl.state.us; lainie.edwards@dep.state.fl.us; kelly.egan@dep.state.fl.us; eric.buck@dep.state.fl.us; Robert.brantley@dep.state.fl.us; fritz.wettstein@dep.state.fl.us; Jennifer.K.Steele@dep.state.fl.us; Sean.O.Green@dep.state.fl.us; Jason.Aldridge@DOS.MyFlorida.Com  
**Cc:** Schulte, David M CIV CENAO CENAD (US); Layton, Susan E CIV (USA); Haynes, John H Jr CIV USARMY CENAO (USA); Burgin, Ashton D CIV USARMY CENAO (USA); Weichenberg, Rena CIV USARMY CENAD (USA)  
**Subject:** Collier County Coastal Storm Risk Management Draft Consultation/Permitting Timetable (UNCLASSIFIED)  
**Classification:** UNCLASSIFIED

CLASSIFICATION: UNCLASSIFIED

As we have previously discussed in Interagency meetings, draft consultation documents as provided in the Draft Consultation/Permitting Timetable below are planned to be available for review in the Draft Collier County Coastal Storm Risk Management Project Integrated Report/EIS. Please note the release of the Draft Integrated Report/EIS has been delayed by approximately two months and is now planned for release on 16 May 2020. Below for your review and commenting is the Draft Consultation/Permitting Timetable for the Collier County Coastal Storm Risk Management Feasibility Study. As described in the Memorandum of Understanding Implementing One Federal Decision Under Executive Order 13807, we are requesting cooperating and participating agencies please review and provide comments to the draft permitting timetable (if needed). Cooperating agencies are required to provide any objections to the schedule in writing within 10 business days. Therefore, we would respectfully request all comments by agencies be provided to me in writing (email or written letter) by 17 February 2020. If comments are not received by 17 February 2020 we are assuming you are in concurrence with the Draft Consultation/Permitting Timetable. Thank you in advance for your review and please contact me if you have any questions or concerns.

DRAFT Consultation/Permitting Timetable

Consultation Action

Responsible Agency

Date

Endangered Species Act, Section 7 Consultation

Request for ESA Consultation Received

U.S. Fish and Wildlife Service

5/16/2020

Consultation Package Deemed Complete – Formal

U.S. Fish and Wildlife Service

6/29/2020

Conclusion of ESA Consultation

U.S. Fish and Wildlife Service

12/28/2020

Request for ESA Consultation Received

National Oceanographic and Atmospheric Administration

5/16/2020

Consultation Package Deemed Complete – Formal

National Oceanographic and Atmospheric Administration

6/29/2020

Conclusion of ESA Consultation

National Oceanographic and Atmospheric Administration

12/28/2020

Magnuson-Stevens Fishery Conservation and Management Act, Section 305 Essential Fish Habitat (EFH) Consultation

NOAA Initially Contacted Regarding EFH Consultation

National Oceanographic and Atmospheric Administration

05/16/2020

NOAA Receives the Complete EFH Assessment to Initiate EFH Consultation

National Oceanographic and Atmospheric Administration

6/16/2020

NOAA Issues a Response to the EFH Consultation Request

National Oceanographic and Atmospheric Administration

8/15/2020

National Historic Preservation Act, Section 106 Review

Consultation initiated with SHPO/THPO

State Historic Preservation Officer

10/24/2019

Section 106 consultation concluded

State Historic Preservation Officer

4/1/2021

Fish and Wildlife Coordination Act Review

Initial application received

U.S. Fish and Wildlife Service

5/16/2020

Issuance of decision for permit/approval

U.S. Fish and Wildlife Service

08/31/2020

Alicia Logalbo

Norfolk District, U.S. Army Corps of Engineers

Planning and Policy Branch

Chief, Environmental Analysis Section

803 Front Street

Norfolk, VA 23510

(757) 201-7210 office

(757) 335-8075 cell

Alicia.Logalbo@usace.army.mil

CLASSIFICATION: UNCLASSIFIED

Consultation Action

Responsible Agency

Date

Endangered Species Act, Section 7 Consultation

Request for ESA Consultation Received

U.S. Fish and Wildlife Service

5/16/2020

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12/28/2020

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10/24/2019

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4/1/2021

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U.S. Fish and Wildlife Service

5/16/2020

Issuance of decision for permit/approval

U.S. Fish and Wildlife Service

08/31/2020

Alicia Logalbo

Norfolk District, U.S. Army Corps of Engineers

Planning and Policy Branch

Chief, Environmental Analysis Section

803 Front Street

Norfolk, VA 23510

(757) 201-7210 office

(757) 335-8075 cell

Alicia.Logalbo@usace.army.mil <mailto:Alicia.Logalbo@usace.army.mil>

CLASSIFICATION: UNCLASSIFIED

--

Noah Silverman  
On Temporary Assignment  
Acting Southeast Branch Chief  
Highly Migratory Species Management Division

NEPA Coordinator, Southeast Region

National Marine Fisheries Service

263 13th Avenue South

St. Petersburg, FL 33701-5505

Phone: (727) 824-5353

Cell: (727) 612-0258

Fax: (727) 824-5309

Email: [noah.silverman@noaa.gov](mailto:noah.silverman@noaa.gov) <<mailto:noah.silverman@noaa.gov>>

Web: Blocked<http://sero.nmfs.noaa.gov>

<Blocked[https://lh6.googleusercontent.com/1QOV9K2BsJI1mnIPVqjB9hfZpe5yGoAL8jBXMuS4UhtjJLcIEUi1mS8\\_c7IOYc75pN8GNXoYE5kUjxvE7SNdxrwHLSgVCFqii3RFGQXEte0dsi0A0](https://lh6.googleusercontent.com/1QOV9K2BsJI1mnIPVqjB9hfZpe5yGoAL8jBXMuS4UhtjJLcIEUi1mS8_c7IOYc75pN8GNXoYE5kUjxvE7SNdxrwHLSgVCFqii3RFGQXEte0dsi0A0)>

## **Logalbo, Alicia M CIV USARMY CENAO (USA)**

---

**From:** Noah Silverman - NOAA Federal <noah.silverman@noaa.gov>  
**Sent:** Tuesday, February 18, 2020 4:04 PM  
**To:** Logalbo, Alicia M CIV USARMY CENAO (USA)  
**Cc:** Helen Chabot - NOAA Federal; Dale Youngkin - NOAA Federal; Katherine Renshaw - NOAA Federal; Andy Strelcheck; Heather Blough - NOAA Federal; Virginia Fay; Mark Sramek - NOAA Federal; Swafford, Rusty; Mark Lamb - NOAA Federal; Kelly Shotts; Joseph Cavanaugh; Mark Murray-Brown - NOAA Federal; Jennifer Anderson; Deirdre Casey - NOAA Federal; Pace Wilber; Brian Rosegger - NOAA Affiliate  
**Subject:** [Non-DoD Source] Re: Collier County Coastal Storm Risk Management Draft Consultation/Permitting Timetable (UNCLASSIFIED)  
**Attachments:** Milestone Concurrence Ltr\_CollierCoCSRM\_SERO021420signed.pdf

Hello Ms. Logalbo,

Please find attached, NOAA's concurrence letter for the subject project milestones. Please let us know if you have any questions or concerns.

Thank you,  
-Noah

On Fri, Jan 31, 2020 at 3:47 PM Logalbo, Alicia M CIV USARMY CENAO (USA) <Alicia.M.Logalbo@usace.army.mil <mailto:Alicia.M.Logalbo@usace.army.mil> > wrote:

CLASSIFICATION: UNCLASSIFIED

As we have previously discussed in Interagency meetings, draft consultation documents as provided in the Draft Consultation/Permitting Timetable below are planned to be available for review in the Draft Collier County Coastal Storm Risk Management Project Integrated Report/EIS. Please note the release of the Draft Integrated Report/EIS has been delayed by approximately two months and is now planned for release on 16 May 2020. Below for your review and commenting is the Draft Consultation/Permitting Timetable for the Collier County Coastal Storm Risk Management Feasibility Study. As described in the Memorandum of Understanding Implementing One Federal Decision Under Executive Order 13807, we are requesting cooperating and participating agencies please review and provide comments to the draft permitting timetable (if needed). Cooperating agencies are required to provide any objections to the schedule in writing within 10 business days. Therefore, we would respectfully request all comments by agencies be provided to me in writing (email or written letter) by 17 February 2020. If comments are not received by 17 February 2020 we are assuming you are in concurrence with the Draft Consultation/Permitting Timetable. Thank you in advance for your review and please contact me if you have any questions or concerns.

DRAFT Consultation/Permitting Timetable



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
**NATIONAL MARINE FISHERIES SERVICE**  
 Southeast Regional Office  
 263 13<sup>th</sup> Avenue South  
 St. Petersburg, Florida 33701-5505  
<https://www.fisheries.noaa.gov/region/southeast>

F/SER:NS

Colonel Patrick V. Kinsman, District Commander  
 Norfolk District, U.S. Army Corps of Engineers  
 803 Front Street  
 Norfolk, Virginia 23510-1011

Re: Collier County, Florida, Coastal Storm Risk Management Study Permitting Timetable

Dear Colonel Patrick V. Kinsman:

Thank you for your staff's February 3, 2020, electronic mail message from Ms. Alicia Logalbo requesting NOAA Fisheries' concurrence on the proposed milestone schedule for the Collier County Coastal Storm Risk Management Study and forthcoming Draft Environmental Impact Statement. We have reviewed the draft timetable in accordance with the Memorandum of Understanding Implementing One Federal Decision (OFD) under Executive Order 13807. We look forward to continuing to work with your agency on this project as a cooperating agency, and offer our concurrence on the proposed timeline, pending incorporation of the edits to our Endangered Species Act (ESA) and Magnuson-Stevens Fishery Conservation and Management Act (MSA) milestones reflected in the table below.

Statutory Authority	Milestones	Milestone Details	Date
Endangered Species Act, Section 7 Consultation	Request for ESA Consultation Received	This reflects the anticipated date of receipt of initial request for ESA consultation from the USACE.	05/16/2020
	Consultation Package Deemed Complete – Formal	Initiation of ESA consultation is contingent upon NMFS receiving sufficient information to fully evaluate project effects. Meeting this milestone target date is contingent upon NMFS receiving a complete Biological Assessment from the action agency by the milestone date (09/13/2020).	09/13/2020
	Conclusion of ESA Consultation	Conclusion of ESA consultation is contingent upon NMFS receiving sufficient information to evaluate project effects, including a complete Biological Assessment.	02/20/2021
Magnuson-Stevens Fishery Conservation and Management Act, Section 305 Essential Fish Habitat (EFH) Consultation	NOAA Initially Contacted Regarding EFH Consultation	This reflects the anticipated date of receipt of initial EFH Assessment from the USACE.	05/16/2020
	NOAA Receives the Complete EFH Assessment to	Initiating EFH consultation is contingent upon NMFS receiving sufficient information to fully evaluate project effects. Meeting this	09/13/2020



	Initiate EFH Consultation	milestone target date is contingent upon NMFS receiving a complete EFH Assessment from the action agency by the milestone date (9/13/2020).	
	NOAA Issues a Response to the EFH Consultation Request	Issuance of EFH Conservation Recommendations is contingent upon NMFS receiving sufficient information to initiate consultation, including a complete EFH Assessment.	02/20/2021

With this concurrence, we offer the following precautionary guidance about our ESA and EFH consultation milestones. NOAA Fisheries initiates consultation under the MSA and ESA when we receive adequate information from the action agency to comprise a complete EFH assessment in the case of the MSA, and a complete biological assessment in the case of the ESA. Our EFH regulations at 50 CFR § 600.920 describe the mandatory contents of an EFH assessment needed to initiate consultation with us under the MSA, and regulations at 50 CFR § 402.14 detail the information required to initiate formal consultation under the ESA (enclosed).

During a productive webinar on February 11, 2020, Ms. Alicia Logalbo and Mr. David Schulte of the Norfolk District (District) provided us with an updated high-level overview of the potential features of this project, and we shared with them some information on the potential effects of the project to EFH and ESA resources. We identified additional resources we will share to assist the District during the project planning phase, and we agreed to communicate regularly as your staff determines which features will be incorporated into the final project design, and develop the EFH and ESA consultation requests.

We believe this early coordination with your staff provides a valuable opportunity to integrate conservation of NOAA’s trust resources into coastal storm risk management. However, we are concerned that it may be difficult for your agency to provide information sufficient to meet these ESA and EFH consultation milestones until you begin the design and engineering stages of the project. Any delays in providing the information we need to complete our consultations during the feasibility study phase of this project could result in these milestones being marked as “missed” or “delayed” on the OFD Permitting Dashboard, which is a consequence we believe both our agencies would like to avoid. Moreover, if we consult prior to the construction and design phase of the project, we are concerned your agency may have to reinitiate consultation prior to construction because more detailed information related to potential project impacts is likely to develop during the time lag between completing the Chief’s Report and the construction and design phase of the project. Such an outcome would require both our agencies to expend additional time and resources and would be highly inefficient.

Therefore, we encourage you to consider delaying your request to initiate ESA and EFH consultation until a later point in the development of the project; preferably during the design and engineering phase, at which time more detailed information about project design and potential impacts to NOAA trust resources will be available. We emphasize if consultation is deferred to later in the USACE’s SMART planning process for conducting civil works feasibility studies for water resources development projects, we will continue to provide robust technical assistance throughout the feasibility study phase to assist your agency in identifying NOAA trust

resources at risk. Deferring these dates would also help both agencies to better understand the important questions to ask regarding those resources and risks, to determine the information or studies needed to answer those questions, and ultimately, to reduce risk to our trust resources. This robust technical assistance phase will assist the USACE in preparing your consultation support documents to provide our agency with specific information about project design and impacts so the respective consultations may be completed more efficiently.

We look forward to continuing to work with you on the Collier County Coastal Storm Risk Management Study. We recognize this project is important to the protection and safety of Florida coastal communities, properties, and infrastructure, and has the potential to affect NOAA trust resources during construction and operation phases. We are committed to providing early, robust technical assistance and reviewing the best available scientific information in our role as a cooperating agency under the National Environmental Policy Act (NEPA) and will work with your staff to identify substantial negative consequences to NOAA trust resources as well as recommend measures to avoid, minimize, and mitigate potential effects. We are happy to provide technical assistance to your staff in order to identify when sufficient consultation information has been provided in order to initiate consultations under the ESA and EFH and recommend new OFD milestones.

If you have any questions regarding the concerns we have identified here, and would like to explore alternative approaches to ensure ESA and MSA compliance on a schedule that may better align with your overall project timeline, we remain available to discuss further. If you have any additional questions regarding EFH and ESA consultations for this project, please contact Mr. Mark Sramek by email at [Mark.Sramek@noaa.gov](mailto:Mark.Sramek@noaa.gov) or by calling 727-824-5311 or Mr. Joseph Cavanaugh at [Joseph.Cavanaugh@noaa.gov](mailto:Joseph.Cavanaugh@noaa.gov) or by calling 727-824-5312, respectively.

Sincerely,

Roy E. Crabtree, Ph.D.  
Regional Administrator

w/enclosures

cc:

SER HCD - Fay, Swafford, Sramek  
SER PRD - Lamb, Shotts, Reece, Cavanaugh  
GCSE – McLemore, Smit-Brunello  
OPR - D. Youngkin  
NOAA - H. Chabot, K. Renshaw

## **Enclosures**

### **Project Timeline and USACE Communications to Date:**

- November 20, 2018: USACE Norfolk District transmits Cooperating Agency request letter to NMFS requesting our participation as a cooperating agency on the Collier County Coastal Storm Risk Management Feasibility Study.
- December 19, 2018: NMFS Southeast Region (SER) responds to the District's Nov. 20th letter agreeing to serve as a cooperating agency for this Study indicating due to staffing and travel constraints, our participation may be limited to our review and comment on draft NEPA documents, teleconferences, and occasional travel to meetings. NMFS SER points of contact identified are Mark Sramek (SER Habitat Conservation Division (HCD) for EFH consultation) and Joseph Cavanaugh (SER Protected Resources Division (PRD) for ESA consultation).
- January 4, 2019: Collier County CSRSM Feasibility Study Environmental Interagency Kickoff Meeting #1 hosted by District staff (Richard Harr). Webinar meeting included: Welcome and Introductions, Meeting Purpose, Study Location, Study Overview & Planning Efforts to Date, Problems (Opportunities, Objectives, Constraints and Considerations), Management Measures (Structural, Non-Structural, Natural and Nature-Based Features) NEPA Pathway, Project Schedule, and General Discussion. NMFS SER HCD and PRD actively participated in this webinar.
- February 22, 2019: Collier County CSRSM Feasibility Study Environmental Interagency Meeting #2 hosted by District staff (Richard Harr). Webinar meeting included: Welcome and Introductions, Follow-Up and Meeting Minutes from Meeting #1, Meeting Purpose, Study Location, Study Overview & Planning Efforts to Date, Problems (Opportunities, Objectives, Constraints and Considerations), Management Measures (Structural, Non-Structural, Natural and Nature-Based Features) NEPA Pathway, Project Schedule, and General Discussion. NMFS SER HCD and PRD also actively participated in this webinar.
- January 31, 2020: District staff (Ms. Alicia Logalbo) provides Cooperating Agencies (EPA, NMFS, BOEM, FWS, DOT, NPS, FFWCC, FDEP) an electronic mail message indicating the release of the Draft Integrated Report/EIS has been delayed by approximately two months and is now planned for release on 16 May 2020, and requested review and comment on the Draft Consultation/Permitting Timetable for the Collier County Coastal Storm Risk Management Feasibility Study.
- February 3, 2020: NMFS (Mark Sramek, SER HCD) responds to Ms. Logalbo's January 31st electronic mail message acknowledging the proposed project timelines and reminds the District in order for NMFS to complete our ESA and EFH consultations in accordance with the consultation timetable, we request the District provide us with consultation information in a timely manner so we may assist the District in meeting the timeline.
- February 11, 2020: NMFS SER HCD and PRD staffs participated in a District-led webinar (Ms. Alicia Logalbo and Mr. Dave Schulte) which provided us with an updated high-level overview of the potential project features. During the webinar NMFS SER staff provided the District with information on potential effects to EFH and ESA resources as well as identified additional resources to assist the District during the project planning phase. The District and SER staff agree to communicate regularly as project features are identified and the District develops the EFH and ESA consultation requests.

## **Information Required to Initiate Consultation**

### **Essential Fish Habitat Consultations**

EFH regulations at 50 CFR 8 600.920 describe the mandatory contents of an EFH assessment needed to initiate consultation with us under the MSA. These include the following:

1. A description of the action.
2. An analysis of the potential adverse effects of the action on EFH and the managed species.
3. The federal agency's conclusions regarding the effects of the action on EFH.
4. Proposed mitigation, if applicable.

In addition the EFH assessment should also include:

1. The results of an on-site inspection to evaluate the habitat and the site-specific effects of the project.
2. The views of recognized experts on the habitat or species that may be affected.
3. A review of pertinent literature and related information.
4. An analysis of alternatives to the action. Such analysis should include alternatives that could avoid or minimize adverse effects on EFH.
5. Other relevant information.

### **Endangered Species Act Consultations**

In accordance with 50 CFR 402.14 the required information to initiate formal consultation under the ESA includes:

(i) A description of the proposed action, including any measures intended to avoid, minimize, or offset effects of the action. Consistent with the nature and scope of the proposed action, the description shall provide sufficient detail to assess the effects of the action on listed species and critical habitat, including:

- (A) The purpose of the action;
- (B) The duration and timing of the action;
- (C) The location of the action;
- (D) The specific components of the action and how they will be carried out;
- (E) Maps, drawings, blueprints, or similar schematics of the action; and
- (F) Any other available information related to the nature and scope of the proposed action relevant to its effects on listed species or designated critical habitat.

(ii) A map or description of all areas to be affected directly or indirectly by the Federal action, and not merely the immediate area involved in the action (i.e., the action area as defined at § 402.02).

(iii) Information obtained by or in the possession of the Federal agency and any applicant on the listed species and designated critical habitat in the action area (as required by paragraph (c)(1)(ii) of this section), including available information such as the presence, abundance, density, or periodic occurrence of listed species and the condition and location of the species' habitat, including any critical habitat.

(iv) A description of the effects of the action and an analysis of any cumulative effects.

(v) A summary of any relevant information provided by the applicant, if available. (vi) Any other relevant available information on the effects of the proposed action on listed species or designated critical habitat, including any relevant reports such as environmental impact statements and environmental assessments.



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL MARINE FISHERIES SERVICE  
Southeast Regional Office  
263 13<sup>th</sup> Avenue South  
St. Petersburg, Florida 33701-5505  
<https://www.fisheries.noaa.gov/region/southeast>

F:SER/BR

Colonel Patrick V. Kinsman, District Commander  
Norfolk District, U.S. Army Corps of Engineers  
803 Front Street  
Norfolk, Virginia 23510-1011

Attention: Alicia Logalbo

**Re: Collier County, Florida Coastal Storm Risk Management Study Permitting Timetable**

Dear Colonel Patrick V. Kinsman:

NOAA's National Marine Fisheries Service (NMFS) provided written concurrence to the consultation schedule for Magnuson-Stevens Fishery Conservation and Management Act (MSA) and Endangered Species Act (ESA) milestones for the Collier County Coastal Storm Risk Management (CSRSM) study in a letter dated February 18, 2020, which established May 16, 2020 as the first milestone for the MSA and ESA consultations. The first milestone dates were based on the availability of the USACE's Draft Environmental Impact Statement (DEIS) for the project. The USACE indicated that publication of the DEIS has been postponed to July 10, 2020, and an adjustment to the consultation milestone timetables is necessary to reflect DEIS availability. Inaction in this regard could result in milestones being marked as "missed" on the One Federal Decision (OFD) Permitting Dashboard, which is a consequence we believe that both of our agencies would prefer to avoid. Therefore, NMFS is requesting that the milestone dates be adjusted to reflect the new DEIS publication date (July 10, 2020), and offers the attached proposed milestone schedules for our MSA and ESA consultations for your consideration.

We are looking forward to continuing to work with you on the Collier County CSRSM study. If you have any additional questions regarding EFH and ESA consultations for this project, please contact Mr. Mark Sramek by email at [mark.sramek@noaa.gov](mailto:mark.sramek@noaa.gov) or by calling 727-824-5311 or Mr. Joseph Cavanaugh at [joseph.cavanaugh@noaa.gov](mailto:joseph.cavanaugh@noaa.gov) or by calling 727-825-5312, respectively.

Sincerely,

Roy E. Crabtree, Ph.D.  
Regional Administrator

NOAA: NOAA NEPA  
F: NMFS HQ NEPA  
F/SER: Strelcheck, Blough, Silverman  
F/SER3: Bernhart, Lamb, Shotts, Reece, Cavanaugh  
F/SER4: Fay, Dale, Swafford, Sramek

enclosure: Attachments



**From:** [Brian Rosegger - NOAA Affiliate](#)  
**To:** [Logalbo, Alicia M CIV USARMY CENAO \(USA\)](#)  
**Cc:** [NOAA NEPA - NOAA Service Account](#); [NMFS HQ NEPA](#); [Andy Strelcheck - NOAA Federal](#); [Heather Blough - NOAA Federal](#); [Noah Silverman - NOAA Federal](#); [Bernhart, David](#); [Mark Lamb - NOAA Federal](#); [Kelly Shotts - NOAA Federal](#); [Karla Reece - NOAA Federal](#); [Joseph Cavanaugh - NOAA Federal](#); [Virginia Fay - NOAA Federal](#); [David Dale - NOAA Federal](#); [Swafford, Rusty](#); [Mark Sramek - NOAA Federal](#); [Dale Youngkin - NOAA Federal](#); [Helen Chabot - NOAA Federal](#)  
**Subject:** [Non-DoD Source] URGENT: Collier County CSRМ Study Milestones  
**Date:** Thursday, May 21, 2020 9:58:56 AM  
**Attachments:** [SERO Collier Co CSRМ Milestone Change Letter SERO.pdf](#)

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Ms. Logalbo,

NOAA's National Marine Fisheries Service (NMFS) has prepared the attached letter discussing the consultation milestones for the Collier County CSRМ project. The proposed changes to the permitting timelines discussed in this letter will need to be posted to the Permitting Dashboard by close of business today to avoid an elevation procedure which would notify the highest levels of our agencies of a missed milestone, a consequence both of our agencies would prefer to avoid. It is for this reason that we request your diligent attention to this matter. We look forward to our continued cooperation with your agency on this One Federal Decision (OFD) project. Please feel free to contact us should you have any questions.

Brian Rosegger  
Contractor, Jamison Professional Services, Inc.  
Scientist I, NOAA Fisheries, SERO  
263 13th Avenue South  
Saint Petersburg, FL 33701  
Direct: 727-551-5735  
Cell: 863-397-2786

**PROPOSED Consultation/Permitting Timetable  
(NOAA/NMFS consultations and associated dependencies)**

	<b>Consultation Action</b>	<b>Milestone Details</b>	<b>Date</b>
<b>Endangered Species Act, Section 7 Consultation</b>	Request for ESA Consultation Received	Consultation request expected concurrent with lead agency's issuance of the draft EIS. Completion of this milestone is contingent upon NMFS receiving a request for an ESA consultation	07/10/2020
	Consultation Package Deemed Complete – Formal	Completion of this milestone is contingent upon NMFS receiving sufficient information to deem the consultation package complete.	11/07/2020
	Conclusion of ESA Consultation	The final completion date is contingent upon NMFS receiving sufficient information to deem the consultation package complete.	04/19/2021
<b>Magnuson-Stevens Fishery Conservation and Management Act, Section 305 Essential Fish Habitat (EFH) Consultation</b>	NOAA Initially Contacted Regarding EFH Consultation	EFH consultation request is expected to be concurrent with the lead agency's issuance of the DEIS. Completion of this milestone is contingent upon NMFS receiving an EFH Assessment.	07/10/2020
	NOAA Receives the Complete EFH Assessment to Initiate EFH Consultation	EFH consultation initiation is contingent upon NMFS receiving sufficient information to initiate EFH consultation, including a complete EFH Assessment.	11/07/2020
	NOAA Issues a Response to the EFH Consultation Request	Issuance of a response to the EFH consultation request is contingent upon NMFS receiving sufficient information, including an EFH assessment, to initiate EFH consultation.	04/19/2021

## **Information Required to Initiate Consultation**

### **Essential Fish Habitat Consultations**

EFH regulations at 50 CFR 8 600.920 describe the mandatory contents of an EFH assessment needed to initiate consultation with us under the MSA. These include the following:

1. A description of the action.
2. An analysis of the potential adverse effects of the action on EFH and the managed species.
3. The federal agency's conclusions regarding the effects of the action on EFH.
4. Proposed mitigation, if applicable.

If appropriate, the assessment should also include:

1. The results of an on-site inspection to evaluate the habitat and site-specific effects of the project.
2. The views of recognized experts on the habitat or species that may be affected.
3. A review of pertinent literature and related information.
4. An analysis of alternatives to the action. Such analysis should include alternatives that could avoid or minimize adverse effects on EFH.
5. Other relevant information.

### **Endangered Species Act Consultations**

In accordance with 50 CFR 402.14 the required information to initiate formal consultation under the ESA includes:

- (i) A description of the proposed action, including any measures intended to avoid, minimize, or offset effects of the action. Consistent with the nature and scope of the proposed action, the description shall provide sufficient detail to assess the effects of the action on listed species and critical habitat, including:
  - A. The purpose of the action;
  - B. The duration and timing of the action;
  - C. The location of the action;
  - D. The specific components of the action and how they will be carried out;
  - E. Maps, drawings, blueprints, or similar schematics of the action; and
  - F. Any other available information related to the nature and scope of the proposed action relevant to its effects on listed species or designated critical habitat.
- (ii) A map or description of all areas to be affected directly or indirectly by the Federal action, and not merely the immediate area involved in the action (i.e., the action area as defined at § 402.02).

- (iii) Information obtained by or in the possession of the Federal agency and any applicant on the listed species and designated critical habitat in the action area (as required by paragraph (c)(1)(ii) of this section), including available information such as the presence, abundance, density, or periodic occurrence of listed species and the condition and location of the species' habitat, including any critical habitat.
- (iv) A description of the effects of the action and an analysis of any cumulative effects.
- (v) A summary of any relevant information provided by the applicant, if available.
- (vi) Any other relevant available information on the effects of the proposed action on listed species or designated critical habitat, including any relevant reports such as environmental impact statements and environmental assessments.

## Logalbo, Alicia M CIV USARMY CENAO (USA)

---

**From:** Logalbo, Alicia M CIV USARMY CENAO (USA)  
**Sent:** Friday, May 22, 2020 5:48 PM  
**To:** 'Joseph Cavanaugh - NOAA Federal'  
**Subject:** FW: Collier County Coastal Storm Risk Management Draft Consultation/Permitting Timetable (UNCLASSIFIED)  
**Attachments:** Collier\_OFD\_Schedule\_20200521.xlsx  
**Classification:** UNCLASSIFIED

CLASSIFICATION: UNCLASSIFIED

Joe,  
Sorry - I think I got your email wrong on the email below. Hope you have a nice weekend.  
Alicia

Alicia Logalbo  
Norfolk District, U.S. Army Corps of Engineers Planning and Policy Branch Chief, Environmental Analysis Section  
803 Front Street  
Norfolk, VA 23510

(757) 201-7210 office  
(757) 335-8075 cell

Alicia.Logalbo@usace.army.mil

-----Original Message-----

**From:** Logalbo, Alicia M CIV USARMY CENAO (USA)  
**Sent:** Thursday, May 21, 2020 10:20 PM  
**To:** Heather\_Hitt@fws.gov; Jeffrey\_Howe@fws.gov; Jeffery\_Howe@fws.gov; kipp.frohlich@myFWC.com; douglas.piatkowski@boem.gov; Jennifer.Bucatari@boem.gov; robert\_johnson@nps.gov; barton.rogers@boem.gov; christopher\_kavanagh@nps.gov; Andrew.jungman@dot.state.fl.us; steven.james@dot.state.fl.us; Justin.lashley@FloridaDEP.gov; higgins.jamie@epa.gov; keith.laakkonen@FloridaDEP.gov; roxane.dow@FloridaDEP.gov; Kenny.carmola@FloridaDEP.gov; Joanna.walczak@FloridaDep.gov; Brian Rosegger - NOAA Affiliate <brian.rosegger@noaa.gov>; melissa.alvarez@noaa.gov; Vicki.Garcia@MyFWC.com; pace.wilber@noaa.gov; Higgins.Jamie@epa.gov; andy.strelchek@noaa.gov; noah.silverman@noaa.gov; sramek.mark@noaa.gov; Cavanaugh.joseph@noaa.gov; gregory.garis@dep.fl.state.us; lainie.edwards@dep.state.fl.us; kelly.egan@dep.state.fl.us; eric.buck@dep.state.fl.us; Robert.brantley@dep.state.fl.us; fritz.wettstein@dep.state.fl.us; Jennifer.K.Steele@dep.state.fl.us; Sean.O.Green@dep.state.fl.us; Jason.Aldridge@DOS.MyFlorida.Com; Brian Rosegger - NOAA Affiliate <brian.rosegger@noaa.gov>  
**Cc:** Schulte, David M CIV CENAO CENAD (US) <David.M.Schulte@usace.army.mil>; Layton, Susan E CIV (USA) <Susan.E.Layton@usace.army.mil>; Haynes, John H Jr CIV USARMY CENAO (USA) <John.H.Haynes@usace.army.mil>; Burgin, Ashton D CIV USARMY CENAO (USA) <Ashton.D.Burgin2@usace.army.mil>; Weichenberg, Rena CIV USARMY CENAD (USA) <Rena.Weichenberg@usace.army.mil>; Martin, Zachary CIV USARMY CENAO (US) <Zachary.Martin@usace.army.mil>  
**Subject:** RE: Collier County Coastal Storm Risk Management Draft Consultation/Permitting Timetable (UNCLASSIFIED)

CLASSIFICATION: UNCLASSIFIED

Hi All,

Attached for your review and commenting is the updated Consultation/Permitting Timetable for the Collier County Coastal Storm Risk Management Feasibility Study. Please note the release of the Draft Integrated Report/Environmental Impact Statement has been delayed and is planned for release on 10 July 2020. In addition to the report release date, please note we have also updated the dates planned for the Endangered Species Act, Section 7 consultation with National Marine Fisheries Service and also updated the planned start date of the Fish and Wildlife Coordination Act Consultation initiation with the U.S. Fish and Wildlife Service. Please let me know if you have any questions or comments by June 2. Thank you.

Alicia

Alicia Logalbo

Norfolk District, U.S. Army Corps of Engineers Planning and Policy Branch Chief, Environmental Analysis Section  
803 Front Street  
Norfolk, VA 23510

(757) 201-7210 office

(757) 335-8075 cell

Alicia.Logalbo@usace.army.mil

CLASSIFICATION: UNCLASSIFIED

CLASSIFICATION: UNCLASSIFIED

## One Federal Decision Permitting/Consultation Timetable

### Collier County Coastal Storm Risk Management Feasibility Study

#### Project

Date Updated

5/21/2020

#### Environmental Impact Statement

Milestone	Original Target Date	Previous Target Date	Current Target Date	Milestone Complete
Issuance of Notice of Intent to prepare an Environmental Impact Statement (EIS)	7/18/2019	7/18/2019	7/18/2019	Yes
Scoping	8/23/2019	8/23/2019	8/23/2019	Yes
Official Notice of Availability of a Draft EIS published in the Federal Register (FR) beginning both the public comment period and concurrent CAA Section 309 Review	3/16/2020	5/29/2020	7/10/2020	
Official Notice of Availability of a Final EIS published in the FR beginning both the public review period and concurrent CAA Section 309 Review	4/17/2021	4/17/2021	4/17/2021	
Issuance of Lead Agency Record of Decision	1/20/2022	1/20/2022	1/20/2022	

#### USFWS, ESA Consultation

Milestone	Original Target Date	Previous Target Date	Current Target Date	Milestone Complete
Request for ESA Consultation Received	---	6/30/2020	6/30/2020	
Consultation Package Deemed Complete – Formal	---	7/30/2020	7/30/2020	
Conclusion of ESA Consultation	---	11/12/2020	11/12/2020	

#### NMFS, ESA Consultation

Milestone	Original Target Date	Previous Target Date	Current Target Date	Milestone Complete
Request for ESA Consultation Received	---	5/16/2020	7/10/2020	
Consultation Package Deemed Complete – Formal	---	9/13/2020	11/7/2020	
Conclusion of ESA Consultation	---	2/20/2021	4/19/2021	

**NMFS, Magnuson-Stevens Consultation**

Milestone	Original Target Date	Previous Target Date	Current Target Date	Milestone Complete
Lead Agency Requests EFH Consultation by submitting an EFH Assessment	---	5/16/2020	7/10/2020	
NOAA Determines the EFH Assessment is complete and Initiates consultation	---	9/13/2020	11/7/2020	
NOAA Issues any EFH conservation recommendations	---	2/20/2021	4/19/2021	

**USFWS, FWCA**

Milestone	Original Target Date	Previous Target Date	Current Target Date	Milestone Complete
Action Agency requests consultation regarding conservation of fish and wildlife resources	---	6/30/2020	7/10/2020	
Fish and Wildlife Coordination Act review concluded	---	8/31/2020	9/10/2020	
Milestone	Original Target Date	Previous Target Date	Current Target Date	Milestone Complete
Consultation initiated with SHPO/THPO	10/24/2019	10/24/2019	10/24/2019	Yes
Section 106 consultation concluded	4/1/2021	4/1/2021	4/1/2021	

**From:** [Logalbo, Alicia M CIV USARMY CENAO \(USA\)](mailto:Logalbo,Alicia.M.CIV.USARMY.CENAO@usace.army.mil)  
**To:** [Heather Hitt@fws.gov](mailto:Heather.Hitt@fws.gov); [Jeffrey Howe@fws.gov](mailto:Jeffrey.Howe@fws.gov); [Jeffery Howe@fws.gov](mailto:Jeffery.Howe@fws.gov); [kipp.frohlich@myFWC.com](mailto:kipp.frohlich@myFWC.com); [douglas.piatkowski@boem.gov](mailto:douglas.piatkowski@boem.gov); [Jennifer.Bucatari@boem.gov](mailto:Jennifer.Bucatari@boem.gov); [robert\\_johnson@nps.gov](mailto:robert_johnson@nps.gov); [barton.rogers@boem.gov](mailto:barton.rogers@boem.gov); [christopher\\_kavanagh@nps.gov](mailto:christopher_kavanagh@nps.gov); [Andrew.jungman@dot.state.fl.us](mailto:Andrew.jungman@dot.state.fl.us); [steven.james@dot.state.fl.us](mailto:steven.james@dot.state.fl.us); [Justin.lashley@FloridaDEP.gov](mailto:Justin.lashley@FloridaDEP.gov); [higgins.jamie@epa.gov](mailto:higgins.jamie@epa.gov); [keith.laakkonen@FloridaDEP.gov](mailto:keith.laakkonen@FloridaDEP.gov); [roxane.dow@FloridaDEP.gov](mailto:roxane.dow@FloridaDEP.gov); [Kenny.carmola@FloridaDEP.gov](mailto:Kenny.carmola@FloridaDEP.gov); [Joanna.walczak@FloridaDep.gov](mailto:Joanna.walczak@FloridaDep.gov); [Brian Rosegger - NOAA Affiliate](mailto:Brian.Rosegger-NOAA.Affiliate); [melissa.alvarez@noaa.gov](mailto:melissa.alvarez@noaa.gov); [Joseph Cavanaugh - NOAA Federal](mailto:Joseph.Cavanaugh-NOAA.Federal); [Vicki.Garcia@MyFWC.com](mailto:Vicki.Garcia@MyFWC.com); [pace.wilber@noaa.gov](mailto:pace.wilber@noaa.gov); [Higgins.Jamie@epa.gov](mailto:Higgins.Jamie@epa.gov); [andy.strelchek@noaa.gov](mailto:andy.strelchek@noaa.gov); [noah.silverman@noaa.gov](mailto:noah.silverman@noaa.gov); [sramek.mark@noaa.gov](mailto:sramek.mark@noaa.gov); [Cavanaugh.joseph@noaa.gov](mailto:Cavanaugh.joseph@noaa.gov); [gregory.garis@dep.fl.state.us](mailto:gregory.garis@dep.fl.state.us); [lainie.edwards@dep.state.fl.us](mailto:lainie.edwards@dep.state.fl.us); [kelly.egan@dep.state.fl.us](mailto:kelly.egan@dep.state.fl.us); [eric.buck@dep.state.fl.us](mailto:eric.buck@dep.state.fl.us); [Robert.brantley@dep.state.fl.us](mailto:Robert.brantley@dep.state.fl.us); [fritz.wettstein@dep.state.fl.us](mailto:fritz.wettstein@dep.state.fl.us); [Jennifer.K.Steele@dep.state.fl.us](mailto:Jennifer.K.Steele@dep.state.fl.us); [Sean.O.Green@dep.state.fl.us](mailto:Sean.O.Green@dep.state.fl.us); [Jason.Aldridge@DOS.MyFlorida.Com](mailto:Jason.Aldridge@DOS.MyFlorida.Com); [Brian Rosegger - NOAA Affiliate](mailto:Brian.Rosegger-NOAA.Affiliate)  
**Cc:** [Schulte, David M CIV CENAO CENAD \(US\)](mailto:Schulte,David.M.CIV.CENAO.CENAD@usace.army.mil); [Layton, Susan E CIV \(USA\)](mailto:Layton,Susan.E.CIV@usace.army.mil); [Haynes, John H Jr CIV USARMY CENAO \(USA\)](mailto:Haynes,John.H.Jr.CIV.USARMY.CENAO@usace.army.mil); [Burgin, Ashton D CIV USARMY CENAO \(USA\)](mailto:Burgin,Ashton.D.CIV.USARMY.CENAO@usace.army.mil); [Weichenberg, Rena CIV USARMY CENAD \(USA\)](mailto>Weichenberg,Rena.CIV.USARMY.CENAD@usace.army.mil); [Martin, Zachary CIV USARMY CENAO \(US\)](mailto:Martin,Zachary.CIV.USARMY.CENAO@usace.army.mil)  
**Subject:** RE: Collier County Coastal Storm Risk Management Draft Consultation/Permitting Timetable (UNCLASSIFIED)  
**Date:** Wednesday, June 24, 2020 2:08:00 PM  
**Attachments:** [Collier\\_OFD\\_Schedule\\_20200624.xlsx](#)

---

CLASSIFICATION: UNCLASSIFIED

Hi All,

I wanted to let you know that the Draft Integrated/EIS Report release has been delayed until July 17, 2020. Therefore you will notice I have pushed back the start of the consultations a week to reflect this change. Please let me know if you have any comments to this. Attached is a summary table of the changes to the Permitting/Consultation Timetable for your reference. Thank you!

Alicia

Alicia Logalbo  
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-----Original Message-----

From: Logalbo, Alicia M CIV USARMY CENAO (USA)  
Sent: Thursday, May 21, 2020 10:20 PM  
To: [Heather\\_Hitt@fws.gov](mailto:Heather.Hitt@fws.gov); [Jeffrey\\_Howe@fws.gov](mailto:Jeffrey.Howe@fws.gov); [Jeffery\\_Howe@fws.gov](mailto:Jeffery.Howe@fws.gov); [kipp.frohlich@myFWC.com](mailto:kipp.frohlich@myFWC.com); [douglas.piatkowski@boem.gov](mailto:douglas.piatkowski@boem.gov); [Jennifer.Bucatari@boem.gov](mailto:Jennifer.Bucatari@boem.gov); [robert\\_johnson@nps.gov](mailto:robert_johnson@nps.gov); [barton.rogers@boem.gov](mailto:barton.rogers@boem.gov); [christopher\\_kavanagh@nps.gov](mailto:christopher_kavanagh@nps.gov); [Andrew.jungman@dot.state.fl.us](mailto:Andrew.jungman@dot.state.fl.us); [steven.james@dot.state.fl.us](mailto:steven.james@dot.state.fl.us); [Justin.lashley@FloridaDEP.gov](mailto:Justin.lashley@FloridaDEP.gov); [higgins.jamie@epa.gov](mailto:higgins.jamie@epa.gov); [keith.laakkonen@FloridaDEP.gov](mailto:keith.laakkonen@FloridaDEP.gov); [roxane.dow@FloridaDEP.gov](mailto:roxane.dow@FloridaDEP.gov); [Kenny.carmola@FloridaDEP.gov](mailto:Kenny.carmola@FloridaDEP.gov); [Joanna.walczak@FloridaDep.gov](mailto:Joanna.walczak@FloridaDep.gov); [Brian Rosegger - NOAA Affiliate](mailto:Brian.Rosegger-NOAA.Affiliate) <[brian.rosegger@noaa.gov](mailto:brian.rosegger@noaa.gov)>; [melissa.alvarez@noaa.gov](mailto:melissa.alvarez@noaa.gov); [Vicki.Garcia@MyFWC.com](mailto:Vicki.Garcia@MyFWC.com); [pace.wilber@noaa.gov](mailto:pace.wilber@noaa.gov); [Higgins.Jamie@epa.gov](mailto:Higgins.Jamie@epa.gov); [andy.strelchek@noaa.gov](mailto:andy.strelchek@noaa.gov); [noah.silverman@noaa.gov](mailto:noah.silverman@noaa.gov); [sramek.mark@noaa.gov](mailto:sramek.mark@noaa.gov); [Cavanaugh.joseph@noaa.gov](mailto:Cavanaugh.joseph@noaa.gov); [gregory.garis@dep.fl.state.us](mailto:gregory.garis@dep.fl.state.us); [lainie.edwards@dep.state.fl.us](mailto:lainie.edwards@dep.state.fl.us); [kelly.egan@dep.state.fl.us](mailto:kelly.egan@dep.state.fl.us); [eric.buck@dep.state.fl.us](mailto:eric.buck@dep.state.fl.us); [Robert.brantley@dep.state.fl.us](mailto:Robert.brantley@dep.state.fl.us); [fritz.wettstein@dep.state.fl.us](mailto:fritz.wettstein@dep.state.fl.us); [Jennifer.K.Steele@dep.state.fl.us](mailto:Jennifer.K.Steele@dep.state.fl.us); [Sean.O.Green@dep.state.fl.us](mailto:Sean.O.Green@dep.state.fl.us); [Jason.Aldridge@DOS.MyFlorida.Com](mailto:Jason.Aldridge@DOS.MyFlorida.Com); [Brian Rosegger - NOAA Affiliate](mailto:Brian.Rosegger-NOAA.Affiliate) <[brian.rosegger@noaa.gov](mailto:brian.rosegger@noaa.gov)>  
Cc: [Schulte, David M CIV CENAO CENAD \(US\)](mailto:Schulte,David.M.CIV.CENAO.CENAD@usace.army.mil) <[David.M.Schulte@usace.army.mil](mailto:David.M.Schulte@usace.army.mil)>; [Layton, Susan E CIV \(USA\)](mailto:Layton,Susan.E.CIV@usace.army.mil) <[Susan.E.Layton@usace.army.mil](mailto:Susan.E.Layton@usace.army.mil)>; [Haynes, John H Jr CIV USARMY CENAO \(USA\)](mailto:Haynes,John.H.Jr.CIV.USARMY.CENAO@usace.army.mil)

<John.H.Haynes@usace.army.mil>; Burgin, Ashton D CIV USARMY CENAO (USA)  
<Ashton.D.Burgin2@usace.army.mil>; Weichenberg, Rena CIV USARMY CENAD (USA)  
<Rena.Weichenberg@usace.army.mil>; Martin, Zachary CIV USARMY CENAO (US)  
<Zachary.Martin@usace.army.mil>  
Subject: RE: Collier County Coastal Storm Risk Management Draft Consultation/Permitting Timetable  
(UNCLASSIFIED)

CLASSIFICATION: UNCLASSIFIED

Hi All,

Attached for your review and commenting is the updated Consultation/Permitting Timetable for the Collier County Coastal Storm Risk Management Feasibility Study. Please note the release of the Draft Integrated Report/Environmental Impact Statement has been delayed and is planned for release on 10 July 2020. In addition to the report release date, please note we have also updated the dates planned for the Endangered Species Act, Section 7 consultation with National Marine Fisheries Service and also updated the planned start date of the Fish and Wildlife Coordination Act Consultation initiation with the U.S. Fish and Wildlife Service. Please let me know if you have any questions or comments by June 2. Thank you.

Alicia

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CLASSIFICATION: UNCLASSIFIED  
CLASSIFICATION: UNCLASSIFIED

**One Federal Decision Permitting/Consultation Timetable**

**Collier County  
Coastal Storm Risk  
Management  
Feasibility Study  
5/21/2020**

**Project**

Date Updated

**Environmental Impact Statement**

Milestone	Original Target Date	Previous Target Date
Issuance of Notice of Intent to prepare an Environmental Impact Statement (EIS)	7/18/2019	7/18/2019
Scoping	8/23/2019	8/23/2019
Official Notice of Availability of a Draft EIS published in the Federal Register (FR) beginning both the public comment period and concurrent CAA Section 309 Review	3/16/2020	5/29/2020
Official Notice of Availability of a Final EIS published in the FR beginning both the public review period and concurrent CAA Section 309 Review	4/17/2021	4/17/2021
Issuance of Lead Agency Record of Decision	1/20/2022	1/20/2022

**USFWS, ESA Consultation**

Milestone	Original Target Date	Previous Target Date
Request for ESA Consultation Received	---	6/30/2020
Consultation Package Deemed Complete – Formal	---	7/30/2020
Conclusion of ESA Consultation	---	11/12/2020

**NMFS, ESA Consultation**

Milestone	Original Target Date	Previous Target Date
Request for ESA Consultation Received	---	5/16/2020
Consultation Package Deemed Complete – Formal	---	9/13/2020
Conclusion of ESA Consultation	---	2/20/2021

**NMFS, Magnuson-Stevens Consultation**

Milestone	Original Target Date	Previous Target Date
Lead Agency Requests EFH Consultation by submitting an EFH Assessment	---	5/16/2020
NOAA Determines the EFH Assessment is complete and Initiates consultation	---	9/13/2020
NOAA Issues any EFH conservation recommendations	---	2/20/2021

**USFWS, FWCA**

Milestone	Original Target Date	Previous Target Date
Action Agency requests consultation regarding conservation of fish and wildlife resources	---	6/30/2020
Fish and Wildlife Coordination Act review concluded	---	8/31/2020
Milestone	Original Target Date	Previous Target Date
Consultation initiated with SHPO/THPO	10/24/2019	10/24/2019
Section 106 consultation concluded	4/1/2021	4/1/2021

Current Target Date      Milestone  
Complete

7/18/2019

Yes

8/23/2019

Yes

7/17/2020

4/17/2021

1/20/2022

---

Current Target Date      Milestone  
Complete

6/30/2020

7/30/2020

11/12/2020

Current Target Date      Milestone  
Complete

7/17/2020

11/7/2020

4/19/2021

Current Target Date      Milestone  
Complete

7/17/2020

11/7/2020

4/19/2021

Current Target Date      Milestone  
Complete

7/17/2020

9/10/2020

Current Target Date      Milestone  
Complete  
10/24/2019              Yes  
4/1/2021

**From:** Logalbo, Alicia M CIV USARMY CENAO (USA)  
**To:** Alton, Julie A CIV USARMY CENAO (USA)  
**Cc:** Layton, Susan E CIV (USA); Martin, Zachary CIV USARMY CENAO (US)  
**Subject:** FW: [Non-DoD Source] Re: Collier County Coastal Storm Risk Management Draft Consultation/Permitting Timetable (UNCLASSIFIED)  
**Date:** Tuesday, July 14, 2020 10:43:06 AM

CLASSIFICATION: UNCLASSIFIED

Julie,  
Below is concurrence from NMFS for the Collier updates in the OFD Dashboard. Thank you.  
Alicia

Alicia Logalbo  
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Alicia.Logalbo@usace.army.mil

-----Original Message-----

From: Brian Rosegger - NOAA Affiliate [<mailto:brian.rosegger@noaa.gov>]  
Sent: Tuesday, July 14, 2020 10:40 AM  
To: Logalbo, Alicia M CIV USARMY CENAO (USA) <[Alicia.M.Logalbo@usace.army.mil](mailto:Alicia.M.Logalbo@usace.army.mil)>  
Cc: Noah Silverman - NOAA Federal <[noah.silverman@noaa.gov](mailto:noah.silverman@noaa.gov)>; Helen Chabot - NOAA Federal <[Helen.Chabot@noaa.gov](mailto:Helen.Chabot@noaa.gov)>; Dale Youngkin - NOAA Federal <[dale.youngkin@noaa.gov](mailto:dale.youngkin@noaa.gov)>; Mark Sramek - NOAA Federal <[mark.sramek@noaa.gov](mailto:mark.sramek@noaa.gov)>; Joseph Cavanaugh - NOAA Federal <[joseph.cavanaugh@noaa.gov](mailto:joseph.cavanaugh@noaa.gov)>  
Subject: [Non-DoD Source] Re: Collier County Coastal Storm Risk Management Draft Consultation/Permitting Timetable (UNCLASSIFIED)

Alicia,

We have no comments and concur with the revised schedule for the EIS release and our subsequent consultations. Also, I'd like to send you a friendly reminder to remember to publish the new dates by the end of this week in order to meet the requirements of the Data Management Guide. The Dashboard still shows the 7/10 date for the first EFH milestone, meaning that it would have to be updated within 5 business days (so before this Friday). Your attention to this matter is greatly appreciated. Thanks!

Brian Rosegger

Environmental Compliance Marine Habitat Resource Specialist

Jamison Professional Services, Inc. in support of

NOAA Fisheries Directorate Office | U.S. Department of Commerce

Office: (727) 551-5735

Mobile: (863) 397-2786

Blockedwww.fisheries.noaa.gov <Blockedhttp://www.fisheries.noaa.gov>

<Blockedhttps://lh5.googleusercontent.com/\_HhHwN9xri9t9dagJcyyt871x2m7epSNc4K8M17egQbY1Zja6ok0sIsNDLyHnTGzZQsBk1HbRUMh9uRahVVSpTd5pGdcdsS2u3QmHuL8fR8RChzL3L0sSF\_VVzGOnkvsFL6NgU>

On Fri, Jul 10, 2020 at 2:25 PM Logalbo, Alicia M CIV USARMY CENAO (USA) <[Alicia.M.Logalbo@usace.army.mil](mailto:Alicia.M.Logalbo@usace.army.mil)> <<mailto:Alicia.M.Logalbo@usace.army.mil>> > wrote:

CLASSIFICATION: UNCLASSIFIED

Hi All,

I wanted to let you know that the Draft Integrated/EIS Report release has been delayed further until approximately July 31, 2020. Therefore you will notice I have pushed back the Draft and Final EIS release dates as well as the consultation schedules to reflect this change (edits are highlighted in yellow). Please let me know if you have any comments to this. Attached is a summary table of the changes to the Permitting/Consultation Timetable for your reference. Thank you!

Alicia

Alicia Logalbo  
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-----Original Message-----

From: Logalbo, Alicia M CIV USARMY CENAO (USA)  
Sent: Wednesday, June 24, 2020 2:09 PM  
To: Heather\_Hitt@fws.gov <[mailto:Heather\\_Hitt@fws.gov](mailto:Heather_Hitt@fws.gov)>; Jeffrey\_Howe@fws.gov <[mailto:Jeffrey\\_Howe@fws.gov](mailto:Jeffrey_Howe@fws.gov)>; Jeffrey\_Howe@fws.gov <[mailto:Jeffrey\\_Howe@fws.gov](mailto:Jeffrey_Howe@fws.gov)>; kipp.frohlich@myFWC.com; douglas.piatkowski@boem.gov <<mailto:douglas.piatkowski@boem.gov>>; Jennifer.Bucatari@boem.gov <<mailto:Jennifer.Bucatari@boem.gov>>; robert\_johnson@nps.gov <[mailto:robert\\_johnson@nps.gov](mailto:robert_johnson@nps.gov)>; barton.rogers@boem.gov <<mailto:barton.rogers@boem.gov>>; christopher\_kavanagh@nps.gov <[mailto:christopher\\_kavanagh@nps.gov](mailto:christopher_kavanagh@nps.gov)>; Andrew.jungman@dot.state.fl.us <<mailto:Andrew.jungman@dot.state.fl.us>>; steven.james@dot.state.fl.us <<mailto:steven.james@dot.state.fl.us>>; Justin.lashley@FloridaDEP.gov; higgins.jamie@epa.gov <<mailto:higgins.jamie@epa.gov>>; keith.laakkonen@FloridaDEP.gov; roxane.dow@FloridaDEP.gov; Kenny.carmola@FloridaDEP.gov; Joanna.walczak@FloridaDEP.gov; Brian.Rosegger - NOAA Affiliate <[brian.rosegger@noaa.gov](mailto:brian.rosegger@noaa.gov)>; andy.strelchek@noaa.gov <<mailto:andy.strelchek@noaa.gov>>; Vicki.Garcia@myFWC.com; melissa.alvarez@noaa.gov <<mailto:melissa.alvarez@noaa.gov>>; Joseph.Cavanaugh - NOAA Federal <[joseph.cavanaugh@noaa.gov](mailto:joseph.cavanaugh@noaa.gov)>; pace.wilber@noaa.gov <<mailto:pace.wilber@noaa.gov>>; Higgins.Jamie@epa.gov <<mailto:Higgins.Jamie@epa.gov>>; andy.strelchek@noaa.gov <<mailto:andy.strelchek@noaa.gov>>; gregory.garis@dep.state.us <<mailto:gregory.garis@dep.state.us>>; sramek.mark@noaa.gov <<mailto:sramek.mark@noaa.gov>>; Cavanaugh.joseph@noaa.gov <<mailto:Cavanaugh.joseph@noaa.gov>>; eric.buck@dep.state.fl.us <<mailto:eric.buck@dep.state.fl.us>>; Kelly.Egan@dep.state.fl.us <<mailto:Kelly.Egan@dep.state.fl.us>>; fritz.wetstein@dep.state.fl.us <<mailto:fritz.wetstein@dep.state.fl.us>>; Jennifer.K.Steele@dep.state.fl.us <<mailto:Jennifer.K.Steele@dep.state.fl.us>>; Sean.O.Green@dep.state.fl.us <<mailto:Sean.O.Green@dep.state.fl.us>>; Jason.Aldridge@DOS.MyFlorida.Com <<mailto:Jason.Aldridge@DOS.MyFlorida.Com>>; Brian.Rosegger - NOAA Affiliate <[brian.rosegger@noaa.gov](mailto:brian.rosegger@noaa.gov)>

Cc: Schulte, David M CIV CENAO CENAD (US) <[David.M.Schulte@usace.army.mil](mailto:David.M.Schulte@usace.army.mil)>; Layton, Susan E CIV (USA) <[Susan.E.Layton@usace.army.mil](mailto:Susan.E.Layton@usace.army.mil)>; Layton, Susan E CIV (USA) <<mailto:Susan.E.Layton@usace.army.mil>>; Haynes, John H Jr CIV USARMY CENAO (USA) <[John.H.Haynes@usace.army.mil](mailto:John.H.Haynes@usace.army.mil)>; Burgin, Ashton D CIV USARMY CENAO (USA) <[Ashton.D.Burgin2@usace.army.mil](mailto:Ashton.D.Burgin2@usace.army.mil)>; Weichenberg, Rena CIV USARMY CENAD (USA) <[Rena.Weichenberg@usace.army.mil](mailto:Rena.Weichenberg@usace.army.mil)>; Martin, Zachary CIV USARMY CENAO (US) <[Zachary.Martin@usace.army.mil](mailto:Zachary.Martin@usace.army.mil)>

Subject: RE: Collier County Coastal Storm Risk Management Draft Consultation/Permitting Timetable (UNCLASSIFIED)

CLASSIFICATION: UNCLASSIFIED

Hi All,

I wanted to let you know that the Draft Integrated/EIS Report release has been delayed until July 17, 2020. Therefore you will notice I have pushed back the start of the consultations a week to reflect this change. Please let me know if you have any comments to this. Attached is a summary table of the changes to the Permitting/Consultation Timetable for your reference. Thank you!

Alicia

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-----Original Message-----

From: Logalbo, Alicia M CIV USARMY CENAO (USA)  
Sent: Thursday, May 21, 2020 10:20 PM

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Subject: RE: Collier County Coastal Storm Risk Management Draft Consultation/Permitting Timetable (UNCLASSIFIED)

CLASSIFICATION: UNCLASSIFIED

Hi All,

Attached for your review and commenting is the updated Consultation/Permitting Timetable for the Collier County Coastal Storm Risk Management Feasibility Study. Please note the release of the Draft Integrated Report/Environmental Impact Statement has been delayed and is planned for release on 10 July 2020. In addition to the report release date, please note we have also updated the dates planned for the Endangered Species Act, Section 7 consultation with National Marine Fisheries Service and also updated the planned start date of the Fish and Wildlife Coordination Act Consultation initiation with the U.S. Fish and Wildlife Service. Please let me know if you have any questions or comments by June 2. Thank you.

Alicia

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**One Federal Decision Permitting/Consultation Timetable**

**Collier County  
Coastal Storm Risk  
Management  
Feasibility Study**

**Project**  
Date Updated

5/21/2020

**Environmental Impact Statement**

Milestone	Original Target Date	Previous Target Date	Current Target Date	Milestone Complete
Issuance of Notice of Intent to prepare an Environmental Impact Statement (EIS)	7/18/2019	7/18/2019	7/18/2019	Yes
Scoping	8/23/2019	8/23/2019	8/23/2019	Yes
Official Notice of Availability of a Draft EIS published in the Federal Register (FR) beginning both the public comment period and concurrent CAA Section 309 Review	3/16/2020	7/17/2020	7/31/2020	
Official Notice of Availability of a Final EIS published in the FR beginning both the public review period and concurrent CAA Section 309 Review	4/17/2021	4/30/2021	5/21/2021	
Issuance of Lead Agency Record of Decision	1/20/2022	1/20/2022	1/21/2022	

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**USFWS, ESA Consultation**

Milestone	Original Target Date	Previous Target Date	Current Target Date	Milestone Complete
Request for ESA Consultation Received	---	6/30/2020	6/30/2020	
Consultation Package Deemed Complete – Formal	---	7/30/2020	7/30/2020	
Conclusion of ESA Consultation	---	11/12/2020	11/12/2020	

**NMFS, ESA Consultation**

Milestone	Original Target Date	Previous Target Date	Current Target Date	Milestone Complete
Request for ESA Consultation Received	---	7/17/2020	7/31/2020	
Consultation Package Deemed Complete – Formal	---	11/7/2020	11/23/2020	
Conclusion of ESA Consultation	---	4/19/2021	5/3/2021	

**NMFS, Magnuson-Stevens Consultation**

Milestone	Original Target Date	Previous Target Date	Current Target Date	Milestone Complete
Lead Agency Requests EFH Consultation by submitting an EFH Assessment	---	7/17/2020	7/31/2020	
NOAA Determines the EFH Assessment is complete and Initiates consultation	---	11/7/2020	11/23/2020	
NOAA Issues any EFH conservation recommendations	---	4/19/2021	5/3/2021	

**USFWS, FWCA**

Milestone	Original Target Date	Previous Target Date	Current Target Date	Milestone Complete
Action Agency requests consultation regarding conservation of fish and wildlife resources	---	7/17/2020	7/31/2020	
Fish and Wildlife Coordination Act review concluded	---	9/10/2020	9/24/2020	
Milestone	Original Target Date	Previous Target Date	Current Target Date	Milestone Complete
Consultation initiated with SHPO/THPO	10/24/2019	10/24/2019	10/24/2019	Yes
Section 106 consultation concluded	4/1/2021	4/1/2021	4/1/2021	

## PUBLIC COMMENTS AND RESPONSES

Public comments from the scoping phase of the study (left) and USACE responses (right). Comments were received in-person at two public scoping meetings (December 6, 2018, and September 9, 2019) held in Collier County, as well as electronically. Commenters included private citizens, Florida Bureau of Historic Preservation, and the U.S. Environmental Protection Agency.

Comment	Response
<p><b>Name:</b> Michael Field  <b>Affiliation:</b> Private citizen  <b>Date Received:</b> 6-Dec-2018</p> <p><i>"I am, and have been, very interested in the challenge of maintaining our beaches ever since I moved to Florida in 2004. So I am particularly sorry to miss the meeting this evening.</i></p> <p><i>Here are my brief thoughts on the subject in case they are useful.</i></p> <p><i>From 2004 until 2015 I lived at the Gulf View Beach Club, two buildings south of Doctors Pass.</i></p> <p><i>That stretch of beach was an ongoing erosion problem largely because of the blocking effect of the Doctors Pass rock breakwaters.</i></p> <p><i>Sand would accumulate on the north side and deplete on the south side – particularly when the prevailing winds were from the north. Also the absence of any breakwaters further to the south meant the sand moved south unimpeded.</i></p> <p><i>In addition to working with Gary McAlpin and then Mayor John Sorey to facilitate the regular and emergency beach replenishments, we explored and proposed off shore breakwaters and a curve to the Doctors Pass south groin to break up the wave action and reduce erosion.</i></p> <p><i>(See attached photos of early unaddressed erosion)</i></p> <p><i>Since then, the changes to the Doctors Pass groin and the experimental addition of offshore breakwaters have created a dramatic improvement to beach retention south of Doctors Pass.</i></p>	<p>Thank you for providing insight on local erosion dynamics. At this point in our evaluation, we determined that breakwaters would be difficult to apply cost-effectively due to (1) the large spatial scale of our planning areas, and (2) the need to protect nearshore hard bottoms. Ultimately, the purpose of this study was finding a holistic approach to managing and protecting large areas for which nourishment is successful. Moreover, the preference for the area was definitely to pursue soft engineering solutions which work with natural processes such as beach nourishment, especially because Collier County sees success with their own nourishment.</p>

*(The use of offshore breakwaters – parallel to the beach – I believe have been used successfully in parts of the Mediterranean for many years)*

*My suggestion would be to try similar offshore breakwaters at other selected problem areas such as the public beach at Seagate – which is visible to me from where I now live.*

*I see the same effect – on a smaller scale – being caused by the Seagate groin, as I saw at Doctors Pass.*

*Such off shore breakwaters not only reduce or reverse beach erosion – they also provide a habitat for fish and other marine life.*

*I think such breakwaters are worth serious consideration.”*

<p><b>Name:</b> John E Gray Jr  <b>Affiliation:</b> Private citizen  <b>Date Received:</b> 6-Dec-2018</p> <p><i>“As a resident of Park Shores Community in Naples FLA. I am severely impacted by the red tide and fish kill problem. This situation has become literally [at] Biblical plague proportions. The quality of our coastal environment has become completely intolerable!! I tried to live here through the summer this year since we a full time residence right on the beach in surfsedge condominiums and found it impossible to live in my own home. The air instantly choked me and my wife so that we couldn’t breath! The fish rotting on our beautiful beach was a stench that we couldn’t be around. We had to flee our own home! For the summer. Something has gone so wrong! I am not buying the hurricane being the responsible any longer. It’s been over a year. I want answers! Now. The red tide is still unbearable even now when the water temps are bw! What is the plan! This is a disaster! Please respond.”</i></p>	<p>The purpose of the Collier County CSRSM Study is to evaluate coastal storm risk and recommend a project that would reduce that risk throughout the study area. This project is not an all-encompassing solution that would address all of coastal storm risks in Collier County, but it is one important component of the larger effort by the non-federal sponsor (Collier County, FL), as well as municipalities, local organizations, and state and federal government agencies who are all working to reduce risk and improve resiliency within the County. This study seeks to not only reduce coastal storm risk, but improve resilience by implementing strategic approaches currently employed by the county. Red tides are large algal bloom events resulting from a combination of climatic and water quality conditions, with perhaps the most prominent human-induced factor being high nutrient loads from non-point sources. In order to ensure that this project does not exacerbate red tides, we are conducting water quality modeling to model for nitrogen (N), phosphorus (P), and total suspended solids (TSS). While managing red tides is outside of the Collier County CSRSM study scope, the USACE will ensure the project is compliant with all state and federal regulatory requirements and will implement stormwater best management practices to mitigate any potential stormwater impacts.</p>
<p><b>Name:</b> Dennis P Vasey  <b>Affiliation:</b> Private citizen  <b>Date Received:</b> 6-Dec-2018</p> <p><i>“Why only “Protected Species”? No mention of wetlands or marsh! Ecological Services benefits. Habitat.”</i></p>	<p>The report evaluates effects on all environmental resources, including wetlands, marsh, and many other resources and habitats. The affected environment and existing conditions for these and other environmental resources is discussed in <i>Chapter 2, Affected Environment</i>; and the anticipated impacts on these resources are evaluated in <i>Chapter 8, Environmental Consequences</i>. Compliance with all environmental laws and regulations is discussed in Chapter 9, <i>Environmental Compliance</i>.</p> <p>Wetlands are regulated under Sections 401 and 404 of the Clean Water Act. The USACE anticipates direct permanent impacts on an estimated 6.4 acres of mangrove wetlands; indirect permanent impacts on an estimated 5.2</p>

	<p>acres of mangrove wetland, and indirect adverse effects on an estimated 1.1 acres of submerged aquatic vegetation (SAV). All of these impacts would be mitigated in accordance with the Environmental Mitigation Plan in the Environmental Appendix, Appendix D. Impact and mitigation acreages would be refined after a wetland delineation and design are completed, in the Preconstruction, Engineering, and Design (PED) phase of the project.</p> <p>The USACE is required to address impact to federally protected species under the authority of cornerstone legislation such as the Endangered Species Act (ESA) of 1973 (as amended), the Marine Mammal Protection Act of 1972 (as amended), the Anadromous Fish Conservation Act of 1965, the American Bald and Golden Eagle Protection Act of 1962, and the Migratory Bird Conservation Act of 1928. The USACE will initiate formal consultation with the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) to address adverse effects and avoidance and minimization of adverse effects on these resources.</p> <p>With the authority used for this study it does not allow us to formulate project alternatives based on ecosystem services. Therefore, we have not included an evaluation on ecosystem services for this project.</p>
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<p><b>Name:</b> Jamie Higgins  <b>Affiliation:</b> USEPA  <b>Date Received:</b> 10-Dec-2018</p> <p>USEPA submitted technical comments and recommendations during the scoping of the Collier County CSRSM study regarding wetlands, water quality, state and federal lands, transportation infrastructure, noise, air quality, environmental justice, recreation, socioeconomics, and green infrastructure.</p>	<p>Please see the USACE response letter to USEPA in the Environmental Correspondence section of the Environmental Appendix, Appendix D.</p>
<p><b>Name:</b> Jason Aldridge  <b>Affiliation:</b> Florida Bureau of Historic Preservation  <b>Date Received:</b> 7-Jan-2019</p> <p><i>Our office has few specific comments at this time since there is limited information about possible recommended measures. However, we do look forward to working with the Corps to address how recommended measures may affect historic properties. While some recommended measures may cause adverse effects to historic properties, these measures may also help to mitigate coastal storm damage risk to historic properties. In particular, the Corps letter mentions the possibility of revising several local documents, including the building code, buyouts, comprehensive evaluation plan, revised hurricaneresponse plan and revised emergency preparedness plan. Early discussion and planning for the different needs of historic properties may help to avoid or minimize potential adverse effects without compromising the overall goal of improving human safety and coastal resiliency.</i></p> <p><i>Since there are numerous historic properties within Collier County, including the study area, it is important the Corps address a current inventory of historic properties for the area of potential effect. Our office can assist in this effort by sharing information available in the Florida Master Site File. Some recommended measures may require cultural resources</i></p>	<p>The USACE has initiated early discussion and planning for the different needs of historic properties to help avoid or minimize potential adverse effects without compromising the overall goal of improving human safety and coastal resiliency. An inventory of the recorded cultural resources in the Area of Potential Effect within Collier County is presented in the Draft Integrated Feasibility Report/Environmental Impact Statement (IFR/EIS ) (see Chapter 2 Affected Environment, Section 13 Cultural Resources), including historic properties and archaeological sites that were listed in the National Register of Historic Places. Chapter 8 Environmental Consequences, Section 13 Cultural Resources discusses effects on cultural resources). A Draft Programmatic Agreement (PA) has been prepared and is in the Cultural Resources Appendix, Appendix H, of this report, along with all correspondence to-date.</p> <p>This Draft IFR/EIS is being circulated for public comment. Concurrently, we are coordinating further with your office as well as tribes and other consulting parties. As the PA states, the USACE would need to conduct additional survey work and any required mitigation in the Preconstruction, Engineering, and Design (PED) Phase of the project.</p>

<p><i>assessment surveys to ensure historic properties are adequately identified and evaluated in those areas. Addressing changes in hydrology and water levels resulting from recommended measures will also be important in evaluating possible adverse effects to historic properties, especially for any archaeological sites which may be unnaturally inundated by those measures.</i></p>	
<p><b>Name:</b> Patti Forkan  <b>Affiliation:</b> Private citizen  <b>Date Received:</b> 9-Sep-2019</p> <p><i>“Goodland &amp; East Naples enormous development occurring and no study effects in this area. Concerned only wealthy areas are being considered not lower income areas. East [or “Past”] 41 - No NNBF here [development] continues. Goodland previously damaged by Irma.”</i></p>	<p>For each study, the USACE first evaluates problems, opportunities, objectives, and constraints. Economic and engineering evaluations and modeling are then conducted in order to determine which measures would provide the best and most economical solution. For this study, each area of coastal Collier County was evaluated for coastal storm risk and then various risk reduction measures were considered. Within each focused study area, structural and nonstructural measures were considered for both the beach and inland bay areas.</p> <p>This project is not an all-encompassing solution that would address all of coastal storm risks in Collier County, but it is one important component of the larger effort by the non-federal sponsor (Collier County, FL), as well as municipalities, local organizations, and state and federal government agencies who are all working to reduce risk and improve resiliency within the County.</p> <p>Please see <i>Chapter 3 Planning Considerations</i>), alternative formulation (see <i>Chapter 6 Formulation of Management Measures and Alternatives</i>), and optimization of the Tentatively Selected Plan (see <i>Chapter 7 Tentatively Selected Plan</i>), for a detailed description and explanation of the process and</p>

	<p>measures. However, it should be noted that economic analyses are continuing to be conducted and measure may be refined as this study progresses.</p> <p>Socioeconomic effects including potential impacts to vulnerable populations including minority and low-income populations is considered during the plan formulation process and an evaluation of such impacts is provided in the Socioeconomics Section of the Draft IFR/EIS.</p>
<p><b>Name:</b> John Goddard  <b>Affiliation:</b> Private citizen  <b>Date Received:</b> 9-Sep-2019</p> <p><i>“Has this project considered the defense of Collier County from Coastal Storm surge arising along Collier’s southern coast from Everglades City to the Rookery? If not why not.”</i></p>	<p>The southern coast of Collier County from Rookery Bay Estuarine Research Reserve east to Everglades City is not included in the Region of Influence (ROI) of the Collier County CRSM study. Much of this portion of Collier County is public land that fell outside of our planning constraints aimed at avoiding and minimizing environmental impacts (Please see <i>Chapter 3 Planning Considerations</i>).</p>



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July 2, 2020

Ms. Jamie Higgins  
U.S. Environmental Protection Agency  
Program Office – Region 4  
61 Forsyth Street, SW  
Atlanta, GA 30303

**RE: Scoping Comments for Draft Collier County Coastal Storm Risk Management Study NEPA Document**

Dear Ms. Higgins:

Thank you for your comments and recommendations regarding the scoping of the Collier County CSRSM study. Your notes on wetlands, water quality, groundwater and drinking water, state and federal lands, transportation infrastructure, noise, air quality, environmental justice, recreation, socioeconomics, and green infrastructure have been integrated into the planning study, and will be in consideration as the project develops.

Below you will find your comments followed by our response by subject area:

**Wetlands**—*“The EPA recommends the USACE avoid and minimize impacts to wetlands and mitigate wetland impacts according to Clean Water Act Section 404(b)(1) Guidelines and related regulations. Dredging activities could cause salinity levels to increase, which could convert freshwater/brackish wetlands into saltwater marshes. The EPA also recommends the USACE evaluate potential impacts 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 impacts as appropriate. Additionally, the EPA recommends that the USACE avoid, minimize and mitigate any impacts to Submerged Aquatic Vegetation (SAVs).”*

USACE will avoid and minimize impacts to wetlands and mitigate impacts to ensure compliance with environmental laws and regulations (*please see Chapter 9 Environmental Compliance*), including Sections 401 and 404 of the Clean Water Act. The USACE anticipates direct permanent impacts on an estimated 6.4 acres of mangrove wetlands; indirect permanent impacts on an estimated 5.2 acres of mangrove wetland, and indirect adverse effects on an estimated 1.1 acres of submerged aquatic vegetation (SAV). All of these impacts would be mitigated in accordance with the Environmental Mitigation Plan in the Environmental Appendix, Appendix D. Impact and mitigation acreages would be refined after a wetland delineation and design are completed, in the Preconstruction, Engineering, and Design (PED) phase of the project.

**Water Quality**—*“The EPA recommends the USACE evaluate potential impacts 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 impacts during the risk management study process.”*

In order to ensure that this project avoids and minimizes water quality impacts, we are conducting water quality modeling to model for nitrogen (N), phosphorus (P), and total suspended solids (TSS). This modeling will be completed in the in the Preconstruction, Engineering, and Design (PED) phase of the project. The USACE will ensure that the project follows all water quality laws, regulations, and best management practices.

**Groundwater and Drinking Water**—*“The EPA notes that saltwater intrusion is presently an issue with the Floridan aquifer, which is a drinking water source for most of Collier County. The EPA recommends the USACE fully and rigorously evaluate the proposed projects impacts on the Floridan Aquifer especially regarding impacts related to saltwater intrusion.”*

Impacts to groundwater and drinking water were addressed in the Collier County CSRSM study (*please see Chapter 8 Environmental Consequences*). The floodwalls and pump stations would be anticipated to result in local (i.e., immediate vicinity) alterations groundwater flow and transport processes resulting in temporary to permanent and moderate impacts. The USACE will ensure that the project follows all water quality laws, regulations, and best management practices. Regardless of project measures adopted, Collier County is expected to continue to monitor quality of the drinking water aquifers for any changes into the future.

**State and Federal Protected Lands**—*“The EPA notes that the project study area is near highly valued national and state protected lands such as Everglades National Park, Ten Thousand Islands National Wildlife Refuge, Rookery Bay National Estuarine Research Reserve, and Collier-Seminole State Park. The EPA recommends that the USACE avoid, minimize and mitigate any project impacts to these protected lands and disclose any impacts in the NEPA document. The EPA also recommends the USACE include the federal and state trustees of these lands (National Park Service, US Fish and Wildlife Service and Florida Department of Environmental Protection) as cooperating agencies and/or members of the Project Delivery Team.”*

Much of this portion of Collier County is highly valued public land (including those noted above) that fell outside of our planning constraints aimed at avoiding and minimizing environmental impacts (*please see Chapter 3 Planning Considerations*). However, Everglades National Park, Ten Thousand Islands National Wildlife Refuge, Rookery Bay National Estuarine Research Reserve, and Collier-Seminole State Park. are not included in the Region of Influence (ROI) of the Collier County CSRSM study.

Two state parks would be affected by the TSP: Delnor-Wiggins State Park and Barefoot Beach Preserve. Both encircle Wiggins Pass. Delnor-Wiggins State Park occupies a mile of relatively undisturbed barrier island, one of a few such undeveloped gulf sites in this region preserved for public use is 199 acres, with 80% being submerged and mangrove swamp. Barefoot Beach Preserve is 342 acres of natural land, also located on one of the last undeveloped barrier islands on Florida's southwest coast. Vanderbilt Beach Park, a local park is also within the project footprint.

All of these beaches would be renourished with sand, which would provide benefits for recreational use. However, the new permanent structural measures: jetties, storm surge barriers, sector gates, connecting floodwalls, and pump station at Wiggins Pass, would be constructed on the two state park lands. The Wiggins Pass sector gates would remain open and navigable access would be preserved, except prior to and during storm events. In addition, during construction, all of these areas would be closed to the public, which would be a temporary but minor impact on State Park usage. The project does have direct and indirect effects on

Coordination with USFWS, NOAA, FDEP, FFWCC to ensure (1) compliance with all environmental laws and regulations (*please see Chapter 9 Environmental Compliance*), and (2) development and adoption of recommended measures that aim to avoid, minimize, and mitigate impacts to public lands (and the resources therein).

***Transportation Infrastructure***—“The EPA notes that the USACE indicates that surface transportation infrastructure might be improved to better accommodate evacuation from impending hurricanes and storms. For NEPA disclosure, the EPA recommends the USACE discuss any potential transportation improvements especially improvements that might involve expanding transportation infrastructure capacity or construction of any potential new transportation infrastructure. If possible, the EPA also recommends the USACE discuss the number of vehicles these surface transportation projects might increase especially on a daily basis. Also related to transportation improvements, the EPA recommends the USACE disclose any noise or air quality impacts to businesses and neighborhoods. If possible, the EPA recommends that any new transportation projects avoid neighborhoods especially vulnerable communities such as environmental justice communities, elderly facilities and facilities associated with children (i.e., daycares, schools, etc.). The EPA also recommends the USACE include the Florida Department of Transportation (FDOT) in any discussions regarding transportation improvements.”

Temporary impacts to transportation as a result of the construction of the structural features would include the establishment of safety zones which may include road and/or lane closures and sidewalk blockages as well as increased levels of noise in the construction area(s). Construction impacts may also result in temporary closures of portions of parking lots for staging of construction equipment and closures of driveways to and from businesses/residences for a short period of time as work is completed.

Detours would be established where necessary. Temporary construction access by land to the Doctors and Wiggins Passes for storm surge barrier construction may be necessary resulting in temporary closures of portions of beach access ways and parking areas adjacent to the passes.

Road gate closures would be incorporated throughout the floodwalls to allow for transportation access through the floodwalls. The road gate closures would be steel plates on frames that would slide on rails to close for a storm event, but otherwise stored in recessed pockets in the concrete walls to permit the flow of traffic. Approximately 62 locations were identified that would require road gate closure structures, but this number may change as the floodwall designs are refined. The majority of the road gate closures were located along the Tamiami Trail conceptual floodwall footprint. Road closure structures would be across private and commercial entrances and public roadways. The Engineering Appendix (Appendix B) contains more information about these structures.

Coordination is ongoing with FDOT in regards to any indirect transportation impacts anticipated in the TSP.

**Noise**—*“As previously discussed, the EPA recommends the USACE discuss noise related impacts associated with any transportation improvements especially features that would expand capacity within the draft NEPA document. The EPA also recommends that the new transportation routes and expanded transportation infrastructure avoid residential neighborhoods and sensitive communities such as environmental justice, children and elderly communities. When appropriate, the EPA recommends the implementation of noise minimization measures (such as noise walls, barriers, vegetative buffers, etc.) as described in FDOT and Federal Highway Administration (FHWA) regulations.”*

Noise impacts of measures included in the TSP were evaluated. Any noise impacts are anticipated to be adverse, but local, adverse and minor (*please see Chapter 8 Environmental Consequences*). Largely, the noise impacts would be the result of short-term construction. This noise would occur during normal business hours, with further reductions around buildings such as hospitals. Noise control BMPs would be followed to reduce any potential impacts.

**Air Quality**—*“As previously discussed, the EPA recommends the USACE discuss air quality (i.e., mobile source air toxics-MSATs) related impacts associated with any transportation improvements especially features that would expand capacity within the draft NEPA document. The EPA also recommend that the new transportation routes and expanded transportation infrastructure avoid residential neighborhoods and sensitive communities such as environmental justice, children and elderly communities.”*

Although the measures in the Tentatively Selected Plan (TSP) do include impacts on the local transportation network, they not include improvements to surface

transportation infrastructure. Collier County is in attainment for all air quality standards. Impacts on air quality would be related to construction and would be temporary. Air quality impacts of measures included in the TSP were evaluated, and effects are expected to be direct, temporary, and minor adverse (*please see Chapter 8 Environmental Consequences*).

**Environmental Justice (EJ)**—*“Also related to the previous comments, the EPA recommends the USACE disclose any impacts to EJ communities especially related to increases in traffic through low income, minority communities. An increase in traffic through EJ communities could increase health impacts associated with air quality (i.e., MSATs) and noise. When possible, the EPA recommends the USACE avoid and minimize impacts to EJ communities.”*

USACE has evaluated these effects, and the TSP is not expected to disproportionately affect disadvantaged populations. The USACE will ensure compliance with any environmental justice laws and regulations. In particular, compliance with Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations is addressed in Chapter 9 Environmental Compliance.

**Recreation**—*“ The EPA recommends the USACE document any impacts to tourism and recreation (even temporary) such as beach closures, commercial and recreational fishing impacts, park and boat ramp closures, impacts to diving and snorkeling, etc. Additionally, the EPA recommends the USACE document and disclose any impacts to the local community and economy due to potential impacts to the recreation and tourism industry.”*

Recreation impacts of alternatives were evaluated in the Collier County CSRSM study (*please see Chapter 8 Environmental Consequences*). Impacts to recreation under the TSP are expected to range from moderately beneficial and permanent to minor to moderate adverse effects that are temporary to permanent in duration due to the losses of recreational land alongside the Doctors and Wiggins Passes. Although the TSP will adversely impact small areas of parkland, it will also feature larger beaches for public recreation. There would be temporary impacts on navigation during construction, and permanent impacts on navigation in the form of slightly narrower openings at Doctors Pass and Wiggins Pass, these effects would be minor.

**Socioeconomic**—*“The EPA acknowledges the USACE’s economic analysis and the benefits to cost ratio that is produced for USACE feasibility studies. For NEPA disclosure, the EPA encourages the USACE to also consider any economic losses due to temporary impacts to the tourism and recreation industry.”*

Cost-benefit trade-offs of the measures in the Tentatively Select Plan were rigorously analyzed in Appendix C Economics of the draft IF/EIS. Socioeconomic impacts are considered in our evaluation of environmental consequences (*please see Chapter 8*

*Environmental Consequences*). An example from Chapter 8 related to your note on tourism and recreation follows. Temporarily closing beaches to the public during construction and renourishment may result in businesses in those locations could have fewer consumers during those construction timeframes. Long-term, the wider beaches could accommodate more beach-going residents and tourists, which could bring more consumers to beachfront businesses, boosting the local economy. These trade-offs will continue to be evaluated throughout project development.

**Green Infrastructure**—“ *When possible, the EPA encourages the USACE to use green and sustainable infrastructure as project measures or features. The EPA also encourages the USACE to consider the concepts of living shorelines and other natural features to reduce damages from storms.*”

USACE considered green infrastructure, or natural and nature-based features, while developing project measures (*please see Chapter 6 Formulation of Management Measures and Alternatives*). Most notably, the dune construction will be paired with vegetative dune plantings of native species that will improve habitat quality and stabilize dunes. Other natural and nature-based features still in consideration through project development include mangrove restoration and oyster reef construction.

Thank you for your comments. Please submit any follow-up comments, questions, and recommendations you have to [Collier-CSR@usace.army.mil](mailto:Collier-CSR@usace.army.mil) or Zachary Martin ([Zachary.Martin@usace.army.mil](mailto:Zachary.Martin@usace.army.mil)), U.S. Army Corps of Engineers, 803 Front Street, Norfolk, Virginia 23510. You may also reach me at (757) 201-7320. The Draft IFR/EIS will be available for public review on July 17, 2020 at the USACE website: <https://www.saj.usace.army.mil/CollierCountyCSRFeasibilityStudy/>. We look forward to our continued coordination.

Sincerely,

*Zachary P. Martin*

Zachary Martin  
Environmental Analysis Section  
Planning and Policy Branch