Natural Resources Evaluation

Florida Department of Transportation

District One

SR 789 (Little Ringling Bridge) Project Development and Environment Study

From Bird Key Drive to Sarasota Harbor West

Sarasota County, Florida

Financial Project ID: 436680-1-22-01 & 436680-1-32-01

ETDM Number: 14384

Date: November 2023

The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried out by the Florida Department of Transportation (FDOT) pursuant to 23 USC. §327 and a Memorandum of Understanding dated May 26, 2022 and executed by the Federal Highway Administration and FDOT.

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EXECUTIVE SUMMARY

The Florida Department of Transportation, District 1 (FDOT) is conducting a Project Development & Environment (PD&E) study to consider the potential reconstruction and/or rehabilitation of the State Road (SR) 789 (John Ringling Causeway) bridges [Structure Numbers 170022 and 170951]. The limits of the improvements are from Bird Key Drive to Sarasota Harbour West in the City of Sarasota within Sarasota County (see **Figure 1-1**). The purpose of the study is to address structural integrity and operational deficiencies of the existing bridges. SR 789 is classified as an Urban, Minor Arterial and consists of a four-lane, divided typical section between Bird Key Drive and Sarasota Harbour West, a distance of 0.741 miles. SR 789 serves as the only connection from downtown Sarasota to St. Armands Key and Lido Key. Although SR 789 is designated as a north-south route, within the project limits SR 789 generally runs in an east-west direction.

The Preferred Alternative replaces the existing twin bridges with a single bridge. The single bridge typical section includes two 10.5-foot (ft) wide travel lanes, a dedicated 11-ft transit lane, 2.5-ft inside shoulder, 5.5-ft bike lane, and 14-ft shared use path in each direction. The total width of the bridge is 114 ft, 3 inches. The new bridge will transition to a curb and gutter roadway typical section that includes two 10.5-ft wide travel lanes, a dedicated 11-ft transit lane, and 5-ft bike lane in each direction, separated by a median with Type E curb and gutter. This section of roadway also includes a 10-ft shared-use path on both sides of the roadway that connects to the bridge. The design speed is 40 miles per hour (mph) with a posted and target speed of 35 mph.

The purpose of this Natural Resources Evaluation (NRE) is to document the natural resources analysis performed to support decisions related to the evaluation of the project Preferred Alternative and to summarize potential impacts to federal and state protected species, wetlands and Essential Fish Habitat (EFH). Measures considered to avoid, minimize, and mitigate for potential impacts resulting from the proposed project are also discussed. This NRE was conducted in accordance with the PD&E Manual and state and federal natural resource regulations.

Protected Species and Habitat

The project study area was evaluated for the presence of federal and state-protected species and their suitable habitat in accordance with 50 Code of Federal Regulations (CFR) Part 402 of the Endangered Species Act of 1973 (ESA), as amended, Chapter 5B-40 Florida Administrative Code (F.A.C.): *Preservation of Native Flora of Florida*, Chapter 68A-27 F.A.C.: *Rules Relating to*

Endangered or Threatened Species, and the *Protected Species and Habitat* chapter of the FDOT PD&E Manual.

Literature reviews, agency database searches, and field reviews were conducted to assess federal and state-protected species presence, their habitat, and designated critical habitat occurring or potentially occurring within the project area. Twenty-two (22) federally-protected (20 listed) species and an additional thirteen (13) state-protected (12 listed) species were evaluated based on species ranges. Non-listed/managed species, including the bald eagle and various bat species, are also discussed based on the potential for occurrence within the study area and their protection under other existing regulations. No designated critical habitat occurs within or adjacent to the project study area.

The following table presents the potential of each protected species to occur within the project study area and the project's determinations of effect for these species.

Table ES-1: Potential for Occurrence of Federal and State Protected Species within the Project Study Area and Proposed Effect Determinations

Species	Listing Status*	Potential for Occurrence	Proposed Effect Determination
Plants			
Aboriginal Prickly-Apple (*Harrisia aboriginum*)	USFWS/FDACS – Endangered	***None***	***No effect***
Florida Bonamia (*Bonamia grandiflora*)	USFWS/FDACS – Endangered	***None***	***No effect***
Florida Golden Aster (*Chrysopsis floridana*)	USFWS/FDACS – Endangered	***None***	***No effect***
Pygmy Fringe Tree (*Chionanthus pygmaeus)*	USFWS/FDACS – Endangered	***None***	***No effect***
Sanibel lovegrass (*Eragrostis pectinacea* var. *tracyi*)	FDACS – Endangered	***None***	***No effect anticipated***
Invertebrates			
Monarch Butterfly (*Danaus plexippus*)	USFWS – Candidate	***High***	***N/A***
Fish			
Gulf Sturgeon (*Acipenser oxyrinchus desotoi*)	NMFS/USFWS – Threatened	***Low***	***May affect, not likely to adversely affect***
Smalltooth Sawfish (*Pristis pectinata*)	NMFS – Endangered	***Low***	***May affect, not likely to adversely affect***
Giant Manta Ray (*Manta birostris*)	NMFS – Threatened	***Low***	***May affect, not likely to adversely affect***
Reptiles			
Eastern Indigo Snake (*Drymarchon corais couperi*)	USFWS – Threatened	***None***	***No effect***

Species	Listing Status*	Potential for Occurrence	Proposed Effect Determination
Green Sea Turtle (*Chelonia mydas*)	USFWS – Endangered	***High***	***May affect, not likely to adversely affect***
Hawksbill Sea Turtle (*Eretmochelys imbricata*)	USFWS – Endangered	***Low***	***May affect, not likely to adversely affect***
Kemp's Ridley Sea Turtle (*Lepidochelys kempii*)	USFWS – Endangered	***High***	***May affect, not likely to adversely affect***
Leatherback Sea Turtle (*Dermochelys coriacea*)	USFWS – Endangered	***Low***	***May affect, not likely to adversely affect***
Loggerhead Sea Turtle (*Caretta caretta*)	USFWS – Threatened	***High***	***May affect, not likely to adversely affect***
Gopher Tortoise (*Gopher polyphemus*)	FWC – Threatened	***None***	***No effect anticipated***
Birds			
Eastern Black Rail (*Laterallus jamaicensis jamaicensis*)	USFWS – Threatened	***None***	***No effect***
Florida Scrub-Jay (*Aphelocoma coerulescens*)	USFWS – Threatened	***None***	***No effect***
Piping Plover (*Charadrius melodus*)	USFWS – Threatened	***Low***	***May affect, not likely to adversely affect***
Red Knot (*Calidris canutus rufa*)	USFWS – Threatened	***Low***	***May affect, not likely to adversely affect***
Wood Stork (*Mycteria americana*)	USFWS – Threatened	***Low***	***May affect, not likely to adversely affect***
American Oystercatcher (*Haematopus palliatus*)	FWC – Threatened	***Low***	***No adverse effect anticipated***
Black Skimmer (*Rynchops niger*)	FWC – Threatened	***Low***	***No adverse effect anticipated***
Florida Burrowing Owl (*Athene cunicularia*)	FWC – Threatened	***None***	***No effect anticipated***
Florida Sandhill Crane (*Antigone canadensis pratensis*)	FWC – Threatened	***Low***	***No adverse effect anticipated***
Least Tern (*Sternula antillarum*)	FWC – Threatened	***High***	***No adverse effect anticipated***
Little Blue Heron (*Egretta caerulea*)	FWC – Threatened	***Moderate***	***No adverse effect anticipated***
Reddish Egret (*Egretta rufescens*)	FWC – Threatened	***Low***	***No adverse effect anticipated***
Roseate Spoonbill (*Platalea ajaja*)	FWC – Threatened	***Moderate***	***No adverse effect anticipated***
Snowy Plover (*Charadrius nivosus*)	FWC – Threatened	***Low***	***No adverse effect anticipated***
Tricolored Heron (*Egretta tricolor*)	FWC – Threatened	***Moderate***	***No adverse effect anticipated***
Bald Eagle (*Haliaeetus leucocephalus*)	N/A[1]	***Moderate***	***N/A***
Mammals			
Florida Bonneted Bat (*Eumops floridanus*)	USFWS – Endangered	***Low***	***May affect, not likely to adversely effect***
Tricolored Bat (*Perimyotis subflavus*)	USFWS – Candidate	***Low***	***N/A***

Species	Listing Status*	Potential for Occurrence	Proposed Effect Determination
West Indian Manatee (*Trichechus manatus latirostris*)	USFWS - Threatened	***High (observed)***	***May affect, not likely to adversely effect***
Miscellaneous bat species	FWC – NL[2]	***Moderate***	***N/A***

*FWC listing status was not included for species with the same federal listing status because of the State's deferment to federal status under Chapter 68A-27, F.A.C.

(1) Protected under the federal Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act

(2) Protected under the Florida Administrative Code (F.A.C.) rule 68A-4.001 General Prohibitions and rule 68A-9.010 Taking Nuisance Wildlife

Wetlands and Other Surface Waters

Pursuant to Executive Order 11990 entitled "Protection of Wetlands" (May 1977), the US Department of Transportation (USDOT) developed a policy, Preservation of the Nation's Wetlands (USDOT Order 5660.1A), dated August 24, 1978, which requires all federally-funded highway projects to protect wetlands to the fullest extent possible. In accordance with this policy, as well as the *Wetlands and Other Surface Waters* chapter of the FDOT PD&E Manual, the Preferred Alternative was assessed to determine potential wetland impacts associated with its construction.

The boundaries of all wetlands and other surface waters within the study area were approximated using both desktop and field reviews. No formal jurisdictional delineations/determinations were conducted. Based on the evaluation completed, approximately 26.63 acres of wetlands and other surface waters occur within the study area. Of these 26.63 acres, 0.04 acre (0.03 acre to mangroves and 0.01 to the waters of Sarasota Bay) will be directly impacted by the Preferred Alternative. The Preferred Alternative will also directly impact 0.05 acre of seagrass and 0.01 acre of oyster bars.

Essential Fish Habitat (EFH)

Essential Fish Habitat (EFH) and Habitat Areas of Particular Concern (HAPC) are designated by the National Oceanic and Atmospheric Administration (NOAA), NMFS and the regional fishery management councils for species managed under the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA). The MSFCMA established eight Fishery Management Councils (FMC) across the country that are tasked with creating and amending Fishery Management Plans (FMP). An EFH assessment was conducted in accordance with the *Essential Fish Habitat* chapter of the PD&E Manual.

EFH was documented to occur in the estuarine habitats within the Coon Key Waterway connecting Sarasota Bay to the Gulf of Mexico. During the prior ETDM ETAT review, the NMFS identified the

presence of EFH for penaeid shrimp; red drum; schoolmaster and mutton snapper; and gag, goliath, red, black and yellowfin grouper as well as lane, dog, yellowtail and cubera snapper. EFH for additional species is also documented herein.

Local EFH consists of mangroves, seagrass/submerged aquatic vegetation (SAV); estuarine water column; oyster bars, and mud, sand, shell, and rock substrates. It has been determined that the project will have “minimal” potential adverse effects on EFH. The project will impact 2.81 acres (0.35 acre of fill and 2.46 acre of shading) of the 51.09 acres of EFH occurring within the project study area.

1 PROJECT OVERVIEW

1.1 Project Description

This project involves the reconstruction of the SR 789 (John Ringling Causeway) bridges [Structure Numbers 170022 and 170951]. The limits of the improvements are from Bird Key Drive to Sarasota Harbour West in the City of Sarasota, in Sarasota County (see **Figure 1-1**). The purpose of the study is to address structural integrity and operational deficiencies of the existing bridges. SR 789 is classified as an Urban, Minor Arterial and consists of a four-lane, divided typical section between Bird Key Drive and Sarasota Harbour West, a distance of 0.741 miles. SR 789 serves as the only connection from downtown Sarasota to St. Armands Key and Lido Key. Although SR 789 is designated as a north-south route, within the project limits SR 789 runs in a generally east-west direction.

The existing twin bridges cross the Coon Key Waterway, a navigable waterway without a defined channel. The existing bridges are approximately 15.73 ft above the Coon Key Waterway at the center. Per the FDOT Design Manual (FDM), a minimum six-ft vertical clearance is required. The existing concrete multi-beam bridges were constructed in 1958. The bridges are spaced 100 ft apart, and each bridge is approximately 1,006 ft -10 inches (in.) long (21 spans of 48 ft each). Each bridge has two twelve-ft travel lanes and a five-ft wide sidewalk on both sides. There are currently no shoulders or designated bicycle facilities across the bridges.

Figure 1-1
Project Location Map

1.2 Purpose and Need

The purpose of the project is to address structural integrity and operational deficiencies of the SR 789 (John Ringling Causeway) bridges [Structure Numbers 170022 and 170951]. The ultimate goal of the project is to identify the optimal solution for a bridge structure in need of repair due to deteriorating conditions and to accommodate greater multimodal transportation access. The project has evaluated

twin bridge and single bridge reconstruction and rehabilitation alternatives, with consideration of bicycle/pedestrian and transit facilities, for approximately 0.741 miles of roadway that provides a connection between nearby neighborhoods and recreational facilities (West Causeway Park, Bird Key Park and the Sarasota Yacht Club). The need for the project is based on the following criteria:

BRIDGE DEFICIENCIES: Address Structural Integrity and Operational Deficiencies

The current concrete multi-beam bridge is the second bridge that has existed at this location, with the original bridge replaced in 1958. Several sections of the deck were replaced on the northbound bridge in 2016 along with other repair-type work throughout the years. The SR 789 bridges, located between downtown Sarasota and St. Armands Key and Lido Key, are more than fifty-years old, the typical expected design life for transportation infrastructure, and are operationally deficient, particularly for transit. SR 789, including the bridges, is identified as a constrained roadway by the Sarasota / Manatee Metropolitan Planning Organization (MPO), meaning it does not preclude any type of improvement in the future, but it identifies that the corridor has physical or policy challenges associated with a widening/capacity project.

Based on a January 2023 FDOT bridge inspection report, the northbound SR 789 bridge received a sufficiency rating of 76.9 and health index rating of 68.0, while the southbound bridge received a sufficiency rating of 77.7 and health index rating of 71.17, as measured on scales of 0-100. “Sufficiency rating” is essentially an overall rating of a bridge's fitness to remain in service and whether it should be repaired or replaced. A bridge with a sufficiency rating of 80 or less is generally eligible for bridge rehabilitation funding. The "health index" is a tool that measures the overall condition of a bridge and typically includes about 10 to 12 different elements that are evaluated by the department. A health index below 85 generally indicates that some repairs are needed, although it doesn't mean the bridge is unsafe. Both bridges do not meet current road design and safety standards.

MODAL INTERRELATIONSHIPS: Improve Multimodal Transportation Options

SR 789 serves as the primary connection between downtown Sarasota and St. Armands Key and Lido Key and is frequently used by bicyclists and pedestrians due to the adjacent parks and recreational facilities [Bird Key Park, West Multi-Use Recreational Trail (MURT) Bird Key / Coon Key Phase I, John Ringling Trail and Longboat Key Trail Corridor]. While there are five-ft-wide sidewalks on both sides of the bridges, there are currently no shoulders or designated bicycle facilities across the bridges. Due to the minimal sidewalk width, there are often conflicts between pedestrians and bicyclists. Overall, the proposed project intends to enhance mobility by evaluating alternatives for

reconstruction/rehabilitation with consideration of bicycle/pedestrian and transit facilities on approximately 0.741 miles of roadway on SR 789.

SAFETY: Improve Emergency Evaluation and Response Times

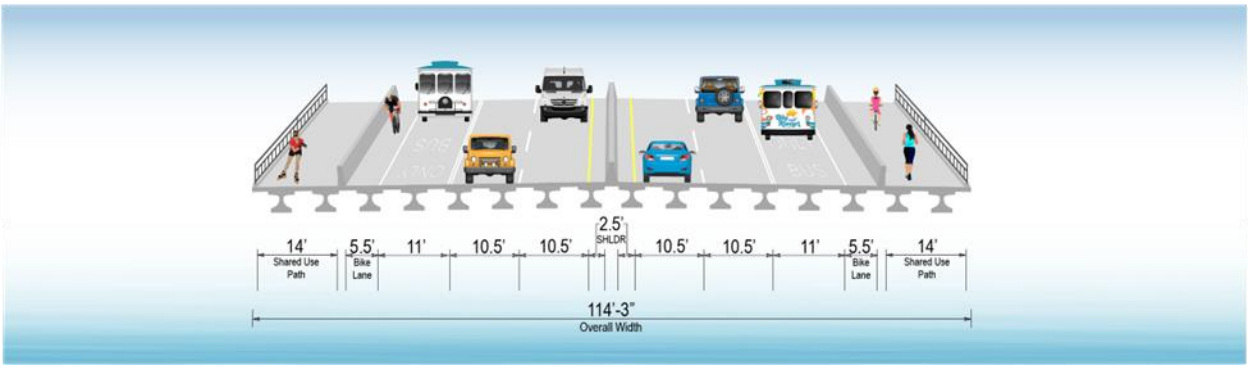
Serving as part of the emergency evacuation route network designated by the Florida Division of Emergency Management and City of Sarasota, SR 789 plays a critical role in facilitating traffic during emergency evacuation periods as the primary connection between downtown Sarasota and St. Armands Key and Lido Key. The entire project corridor is located in the City of Sarasota's Hurricane Storm Surge Category "A."

The City of Sarasota Climate Adaptation Plan (December 4, 2017) studied and evaluated climate threats to public infrastructure to understand how sea level rise, storm surge, extreme precipitation, and extreme heat might impact the City of Sarasota's transportation network; stormwater management, water supply, and wastewater systems; public lands; and critical buildings. Thirty-four transportation assets were evaluated, of which 15 were deemed most vulnerable, including SR 789. When prioritizing transportation vulnerabilities, the SR 789 bridge received a risk score of 64.4 (on a scale of 0-100). The potential reconstruction and/or rehabilitation of SR 789 bridge would make it more resilient to climate vulnerabilities.

1.3 Description of Preferred Alternative

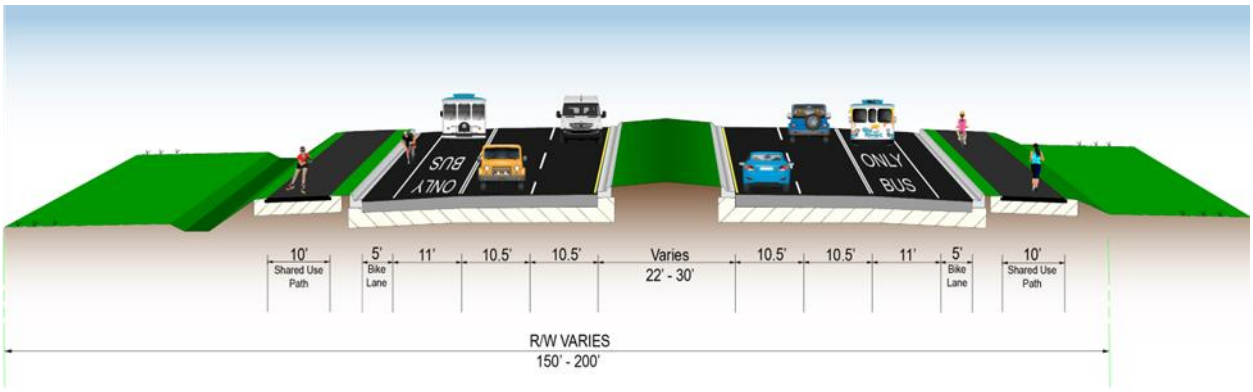
The Preferred Alternative replaces the existing twin bridges with a single bridge. The single bridge typical section includes two 10.5-ft wide travel lanes, a dedicated 11-ft transit lane, 2.5-ft inside shoulder, 5.5-ft bike lane, and 14-ft shared use path in each direction. The total width of the bridge is 114 ft 3-in, shown on **Figure 1-2**.

Figure 1-2
SR 789 Proposed Single Bridge Typical Section



The new bridge will transition to a curb and gutter roadway typical section that includes two 10.5-ft wide travel lanes, a dedicated 11-ft transit lane, and 5-ft bike lane in each direction, separated by a median with Type E curb and gutter. This section of roadway also includes a 10-ft shared-use path on both sides of the roadway that connects to the bridge, shown on **Figure 1-3**. The design speed is 40 mph with a posted and target speed of 35 mph. The most recent Preferred Alternative plans are provided in **Appendix A**. The proposed bridge will be approximately 27.55 ft above the Coon Key Waterway at the center, an increase of 15.73 ft (at the center) from the existing bridges.

Figure 1-3
SR 789 Proposed Roadway Typical Section



1.4 Anticipated Construction Details for Aquatic Noise/Vibratory Analysis

Given the preliminary nature of this PD&E study, specific construction means and methods are not available. The information provided in this section represents the design engineers' best estimates/assumptions of the means and methods that could be used to construct the proposed design, accounting for structure construction, maintenance of traffic and other project needs. The assumptions stated herein are subject to change and are anticipated to require additional resource agency consultation during the project's design and environmental permitting phase.

It is anticipated that demolition of the existing bridge will be done either by machine removal with debris netting or barge-mounted debris catchment systems in place, while the existing bridge piles are anticipated to be removed via machine pulling/extraction. If this is not possible, then the piles will be cut off below the existing channel bottom. Blasting is not currently anticipated to be necessary for demolition. However, if blasting is determined necessary as part of the construction contractor's

means and methods, the contractor will prepare a blasting plan for NMFS and USFWS review and approval prior to commencement of the activity.

The project is anticipated to require the construction of 60, 42-inch (3.5-ft) diameter piles. It is anticipated that these piles will be installed using drilled shafts. Additionally, for the construction of these piles, temporary work trestles will need to be installed which will require driven piles. Pile driving is currently only anticipated to be required for the installation of the temporary work trestle piles, as the proposed bridge piles are to be installed via drilled shafts. Information regarding the anticipated installation methods for the temporary work trestles which can be used in the NMFS noise assessment is provided in **Table 1-1** below. The completed preliminary NMFS noise assessment impact report is included in **Appendix B**. It should be noted that the pile installation for the temporary work trestles will require preformed holes and that the piles will be vibrated prior to driving. Additionally, bubble curtains are anticipated to be used for this installation and the FDOT will adhere to NMFS SERO's *Protected Species Construction Conditions*. The FDOT commits to only conduct in-water work during daytime hours and to utilize "ramp-up" methods prior to impact pile driving. FDOT will also require contractors to only use shallow-draft barges to prevent potential additional impacts to seagrass and other habitat from project boat traffic. The FDOT will delineate the extent of project seagrasses which are not anticipated to be impacted with buoy markers in an effort to prevent unforeseen impacts to these areas from either project boat traffic or public boat traffic seeking to go around construction.

Table 1-1: Anticipated Construction Details for Temporary Work Trestle Piles

Pile Type/Material	0.5-inch wall (steel pipe pile)
Pile Diameter (inches)	24
Number of Piles Total	216
Installation Method	Impact
Number of Hammer Strikes per Pile	250
Number of Piles Installed per Day	4
Number of Hammer Strikes per Day	1,000
Duration of Pile Driving Activity (Days)	54
Total Number of Hammer Strikes	54,000
Confined Space or Open Water	Open Water
Hammer Details	66,000 ft-lbs hammer-rated energy
Noise Abatement Used	Bubble Curtain and Timber Cushion Block

It is anticipated that demolition of the existing bridge will be done either by machine removal with debris netting or barge-mounted debris catchment systems in place, while the existing bridge piles are anticipated to be removed via machine pulling/extraction. If this is not possible, then the piles will be cut off below the existing channel bottom. Blasting is not anticipated to be necessary for demolition. If blasting is determined necessary as part of the construction contractor's means and methods, the contractor will prepare a blasting plan for NMFS and USFWS review and approval prior to commencement of the activity.

At the time of writing, construction is estimated to commence approximately September 2027. It is anticipated that bridge construction will take approximately eighteen months to complete. Therefore, the estimated construction end date is approximately March 2029. After construction completion, the temporary work trestles and associated piles will be removed from the waterway. It is also noted that a drilled shaft pile installation noise calculator is not available at this time from NMFS. FDOT will provide any information requested by NMFS during Section 7 consultation to evaluate potential acoustic impacts from the bridge pile installation as the information is made available during the project's design phase.

1.5 Prior Agency Coordination

The project was evaluated through the FDOT's Efficient Transportation Decision Making (ETDM) process, designated as ETDM project #14384. An ETDM *Final Programming Screen Summary Report* was published on July 30, 2020 and contained comments from the Environmental Technical Advisory Team (ETAT) on the project's effects on various natural, physical, and social resources. During the project's ETDM review, various federal and state regulatory/permitting agencies reviewed the project's purpose, need and generalized description of anticipated improvements. Agencies including the U.S. Fish and Wildlife Service (USFWS), U.S. Coast Guard (USCG), National Marine Fisheries Service (NMFS), Florida Fish and Wildlife Conservation Commission (FWC), and Southwest Florida Water Management District (SWFWMD) provided comments on the project's potential impacts to, and considerations for, natural resources and documentation/permitting under their regulatory purview. Particularly of note, per the ETDM review, the U.S. Army Corps of Engineers (USACE) specifically requested to be a participating agency on the project. Additionally, a pre-application meeting was held with the SWFWMD on Thursday November 3, 2022. The meeting minutes from this pre-application meeting are included within **Appendix C** of this document.

2 PROJECT STUDY AREA

The project study area for evaluating potential natural resources impacts consists of a 300-ft buffer around the centerline of the existing roadway (**Figure 2-1**).

2.1 Existing Conditions

The SR 789 (Ringling) bridges connect Bird Key (east side) to Coon Key (west side), and there is extensive development along the project corridor, leaving little remnant natural habitat. Throughout the project study area, the existing SR 789 ROW is characterized by sidewalks, multi-use recreational trails, extensive landscaping, roadway lighting and utility installation. Along Bird Key, the City of Sarasota's Bird Key Park occurs along the north side of SR 789 for the entire length of the island. This park is a heavily-used public recreation area providing conventional amenities (parking, multi-use recreational trail, small boat launch ramps, picnic pavilions, benches and trash receptacles). The only potential for habitat in this location is a narrow strip of sand and bay-front littoral zone along the park's northern periphery. Numerous private residences (Bird Key residential community) and the City's West Causeway Park occur along the south side of SR 789. This park also contains a multi-use recreational trail subject to regular public use.

Dominant vegetation along the corridor consists primarily of landscaped sabal palm (*Sabal palmetto*), royal palm (*Roystonea regia*), fan palm (*Livistona* sp.), silver buttonwood (*Conocarpus erectus var. sericeus*), live oak (*Quercus virginiana*), black olive (*Bucida buceras*), seagrape (*Coccoloba uvifera*), and non-native Australian pine trees (*Casuarina equisetifolia*). Only two minor areas of intermingled black mangrove (*Avicennia germinans*) and green buttonwood (*Conocarpus erectus*) occur at the east end of the SR 789 bridges.

Within the project study area, the Coon Key Waterway is approximately 930 ft in width and the depth ranges from zero to approximately 16 ft. Within the project study area, the mean high tide elevation is +0.15 ft NAVD88, and the mean low tide elevation is -1.10 ft NAVD88.

FDOT

0 400 800

Feet

1 inch = 400 feet

Figure 2-1: Project Study Area

Sources: ESRI 2022

SR 789 (Little Ringling Bridge)
From Bird Key Drive
to Sarasota Harbor West
Sarasota County, Florida
FPID No.: 436680-1-22-01

N

2.1.1 Land Use

In general, existing land uses along the project corridor consist of single- and multi-family residential, institutional and recreational land uses. There is one institutional facility (i.e., the Plymouth Harbor Retirement Community) and one business (i.e., the Sarasota Yacht Club) adjacent to the project limits. Existing land use and vegetative cover types within the project study area were evaluated and quantified using the Florida Land Use, Cover and Forms Classification System (FLUCFCS) (FDOT 1999) and SWFWMD land use and land cover data (2017). The approximate land use boundaries within the project study area were referenced onto true color aerial imagery. Project scientists then verified existing land use and cover classifications within the study area during field reviews and aquatic surveys conducted in January and July of 2020. Following the field reviews, land use and cover types were updated to reflect field-verified conditions. The resulting land use and cover types are summarized in **Table 2-1** and identified on the FLUCFCS map in **Appendix D**. A brief description of each land use and cover type and its ability to support federal and state protected species follows.

Table 2-1: Land Use and Cover within the Project Study Area

Land Use or Cover Type	FLUCFCS Code[1]	Acres	Hectares	Percent of Study Area
Uplands				
Residential, Medium Density	120	6.34	2.57	9.26
Residential, High Density	130	17.82	7.21	26.02
Commercial and Services	140	2.55	1.03	3.72
Recreational	180	0.81	0.33	1.18
Transportation	810	14.33	5.80	20.93
Uplands Sub-total		*41.85*	*16.94*	*61.11*
Wetlands and Other Surface Waters				
Other Surface Waters				
Bays and Estuaries	540	22.11	8.95	32.29
Seagrass	911	4.39	1.78	6.41
Wetlands				
Mangrove Swamps	612	0.07	0.03	0.10
Oyster Bars	654	0.06	0.02	0.09
Surface Waters Sub-total		*26.63*	*10.78*	*38.89*
	Total	**68.48**	**27.72**	**100**

1. (FDOT 1999)

URBAN AND BUILT-UP (FLUCFCS 100 SERIES)

Urban and Built-up land consists “of areas of intensive use with much of the land occupied by man-made structures”, including residential, commercial, recreational, industrial, and institutional

developments. Urban and Built-up land uses within the study area account for 27.52 acres (approximately 40% of the study area) and generally do not provide suitable habitat for protected species.

Bird Key contains Bird Key Park (FLUCFCS 180) and a housing development (FLUCFCS 120) with houses and manicured lawns/landscaping. While designated as a park, the area of Bird Key Park identified as recreational land use typically only contains a parking lot and a seawall as the in-water portion of the park is identified as Water (FLUCFCS 500) for the purposes of land use and cover. Given the abundance of pavement and routinely maintained lawns, these areas do not generally provide suitable habitat for protected species.

Along Coon Key, two multi-unit condominium residential communities (Sarasota Harbour East and West) (FLUCFCS 130) occur along the north side of SR 789 for the entire length of the island. Two land uses occur along the south side of SR 789 on Coon Key, these include the Sarasota Yacht Club and Marina (FLUCFCS 140) (east side) and the Plymouth Harbor Retirement Community (FLUCFCS 130) (west side). These areas all contain extensive pavement (parking lots) and large buildings and do not generally provide suitable habitat for protected species.

WATER (FLUCFCS 500 SERIES)

Water land uses are defined as “all areas within the land mass of the United States that are predominantly or persistently water covered”. Within the study area this land use designation consists of Bays and Estuaries (FLUCFCS 540).

The project crosses the Coon Key Waterway (part of Sarasota Bay), which is designated as Bays and Estuaries. Sarasota Bay is designated as an Outstanding Florida Water (OFW). This land use comprises more of the project study area than any other individual land use, accounting for 22.10 acres (approximately 33% of the study area). Sarasota Bay within the study area is unvegetated except areas where seagrass occurs.

WETLANDS (FLUCFCS 600 SERIES)

Land cover types within the wetlands series within the study area are comprised of Mangrove Swamps (FLUCFCS 612) and Oyster Bars (FLUCFCS 654).

Mangroves occur in six areas throughout the study area; two at the northeastern end of the bridges and four within Bird Key Park. These areas typically only consist of two to four trees and are not characteristic of a typical “swamp”; however, for the purposes of land use identification and impact assessment, these areas are identified as Mangrove Swamp. Mangrove areas account for 0.07 acre of the study area. All of these areas contain black mangrove, but also contain either red mangrove (*Rhizophora mangle*) or buttonwood.

Oyster Bars occur in five locations throughout the study area; one under the westbound bridge, on the northeast end of the bridge, and four occur adjacent to Bird Key Park. These areas account for 0.06 acre of the study area. Each of these areas consist of riprap that eastern oysters (*Crassostrea virginica*) have colonized.

TRANSPORTATION, COMMUNICATIONS AND UTILITIES (FLUCFCS 800 SERIES)

Within the study area, Transportation, Communications, and Utilities land uses consist solely of Roads and Highways (FLUCFCS 814). Roads and Highways account for 14.33 acres (approximately 21%) of the study area. The Roads and Highways land use typically includes the entire existing ROW of S.R. 789 within the study area, except for the bridges. For land use purposes, the areas where the bridges occur were identified as Bays and Estuaries so that acreages would not be duplicated.

SPECIAL CLASSIFICATIONS (FLUCFCS 900 SERIES)

Within the study area, Special Classifications consist solely of Seagrass (FLUCFCS 911). These seagrass areas account for 4.39 acres of the study area. Seagrass species occurring within the project study area are turtle grass (*Thalassia testudinum*) and manatee grass (*Syringodium filiforme*). Within the study area, seagrass was documented at depths between 2 ft and 8 ft.

2.1.2 Soils

The US Department of Agriculture, Natural Resources Conservation Service (NRCS) Soil Survey Geographic (SSURGO) Database for Florida (2020) was reviewed to identify local soil types within the study area, especially hydric soils for the purposes of assessing wetland boundaries. The NRCS does not map the soils within the Coon Key Waterway channel (i.e., listed generically as “waters of the Gulf of Mexico”). However adjacent upland soils are mapped as St. Augustine fine sand-urban land complex (0-2% slopes) and Canaveral fine sand-urban land complex (0-5% slopes). The NRCS identifies both soil series as non-hydric soils. The soil substrates within the waterway are

predominantly fine sand and shell particles. **Table 2-2** summarizes the total area of each soil series present within the study area. An aerial map depicting the location and extent of each soil series within the study area is provided in **Appendix E**.

Table 2-2: Project Soil Series

Soil Series Name	Hydric Rating	Total Acres	Total Hectares	Percent of Study Area
St. Augustine fine sand	Non-hydric	12.22	4.95	17.84
Canaveral fine sand (0-5% slopes)	Non-hydric	31.31	12.67	45.72
Other Soil Series				
Waters of the Gulf of Mexico	Unranked	24.95	10.10	36.44
Total		68.48	27.70	**100**

2.1.3 Public Lands and Conservation Areas

As shown in **Table 2-3** below, there are nine designated public land resources within a one-mile radius of the project. These properties are as follows:

Table 2-3: Public Lands Within a One-Mile Radius of the SR 789 PD&E Project Study Area

Name of Property	Size	Owner(s)	Proximity	General Use Type(s)
Bird Key Park	3.095 acres	City of Sarasota	within project limits	Nature Park/Beach Access
West Causeway Park	3.678 acres	City of Sarasota	within project limits	Nature Park/Beach Access
Sarasota Bay Blueway Paddling Trail	12 miles long	Sarasota County	within project limits	Paddling Trail
Ken Thompson Park and Boat Ramp	28.85 acres	City of Sarasota	0.8 miles north of project limits	Nature Park/Beach Access
Bay Walk Park	4.511 acres	City of Sarasota	0.85 miles north of project limits	Nature Park/Beach Access
St. Armands Circle Park	2.214 acres	City of Sarasota	0.33 miles west of project limits	Neighborhood Park/Walking Path
Coolidge Park/Lido Beach Pool and Pavilion	23.19 acres	City of Sarasota	0.64 miles southwest of project limits	Nature Park/Beach Access
Ted Sperling Park at South Lido Beach	164.696 acres	City of Sarasota	0.75 miles south of project limits	Nature Park/Beach Access

Ringling East Causeway Park	6.016 acres	Sarasota County	0.70 miles northeast of project limits	Nature Park/Beach Access
Bayfront Park and Marina	21.384 acres	City of Sarasota	1.0 mile northeast of project limits	Neighborhood Park/Marina

These are generally municipal public-use park facilities and are generally not managed for specific conservation/preservation purposes. With the exception of St. Armands Circle Park (an entirely urban facility), these facilities offer active and passive wildlife/natural resource recreation opportunities. Of the facilities listed, only Bird Key Park, West Causeway Park and the Sarasota Bay Blueway Paddling Trail occur within or adjacent to the project limits. Due to the amount of pavement, regular maintenance, and heavy recreational use, Bird Key Park and West Causeway Park provide minimal potential habitat for protected species. The project is anticipated to result in only minor temporary impacts to the Sarasota Bay Blueway Paddling Trail, and no impacts are anticipated to Bird Key Park or West Causeway Park. Bird Key Park contains an easement within FDOT ROW, and the project will result in only minor impacts (estimated at 0.62 acre) within this easement; no impacts are proposed to the City of Sarasota-owned park property.

3 PROTECTED SPECIES AND HABITAT

Federally-listed species are afforded protections under Section 7(a)(2) of the Endangered Species Act of 1973 (ESA), as amended, falling under the jurisdiction of the USFWS and National Marine Fisheries Service (NMFS). Within the state of Florida, federally-listed species are also afforded protection under Chapter 68A-27, Florida Administrative Code (F.A.C.), along with state-listed species. State-protected animal species are under the jurisdiction of the FWC while state-protected plant species are under the jurisdiction of the Florida Department of Agriculture and Consumer Services (FDACS) per Chapter 5B-40, F.A.C. The analysis of protected species potentially occurring within the project area is consistent with the Protected Species and Habitat chapter of the FDOT's PD&E Manual.

3.1 Methodology

Literature reviews, agency database searches, and field surveys were conducted to assess the potential presence of federal and state-protected species, their habitat and critical habitat within the study area. Information sources and databases included the following and others referenced in Section 8 of this report:

- Environmental Systems Research Institute (ESRI) World Imagery (ESRI 2022)
- Google Earth (2022)
- FDOT ETDM Environmental Screening Tool (EST) (FDOT 2022)
- NRCS SSURGO Database (NRCS 2020)
- Florida Geographic Data Library (FGDL 2022)
- USFWS Species Lists and Datasets (2020a-b, 2022a-c)
- FWC Species Lists and Datasets (2021a-c, 2022a-d)
- FDACS Species Lists (2022)
- Florida Natural Areas Inventory (FNAI) (2020a, 2020b)

Based on the results of database searches and review of aerial photographs, field survey methods for specific habitat types and lists of target species were developed. Documented occurrences of all protected species are identified in **Figure 3-1**.

Following the desktop analysis, field reconnaissance of the study area was conducted in January 2020, with specific aquatic resource surveys conducted in July 2020. These efforts were conducted by qualified field biologists and consisted of pedestrian surveys of habitats within the study area.

During these surveys, areas of remaining habitat were visually inspected for vegetative type and cover, level of disturbance, management techniques, and overall potential suitability to support protected species and general wildlife.

A list of potentially occurring protected species was developed, taking into consideration comments provided in the ETDM *Final Programming Screen Summary Report* (FDOT 2020) from the USFWS and FWC. Each species was assigned a none, low, moderate, or high potential for occurrence within the study area. Definitions for potential occurrence are provided below. **Table 3-1** lists the federal and state protected wildlife and plant species as well as each species' potential for occurrence within the study area. Summary effect determinations are also provided for each species within this table.

None – Species whose agency consultation area or range may include the project study area but have no potential for occurrence in the study area due to the absence of suitable habitat.

Low – Species with a low potential for occurrence within the project ROW are defined as those species that are known to occur in Sarasota County or the bio-region, but suitable habitat is limited within the study area, or the species is range-limited or rare.

Moderate – Species with a moderate potential for occurrence are those species known to occur in Sarasota County or nearby counties, and for which suitable habitat is present within the study area, but no observations or positive indications exist to verify the species' presence.

High – Species with a high potential for occurrence are suspected within the study area based on known ranges and existence of sufficient suitable habitat; are known to occur adjacent to the study area; species or signs of species (gopher tortoise burrows, tracks, etc.) directly observed during project field reviews, or have been previously observed or documented in the immediate project vicinity.

Table 3-1: Potential for Occurrence of Federal and State Protected Species within the Project Study Area and Proposed Effect Determinations

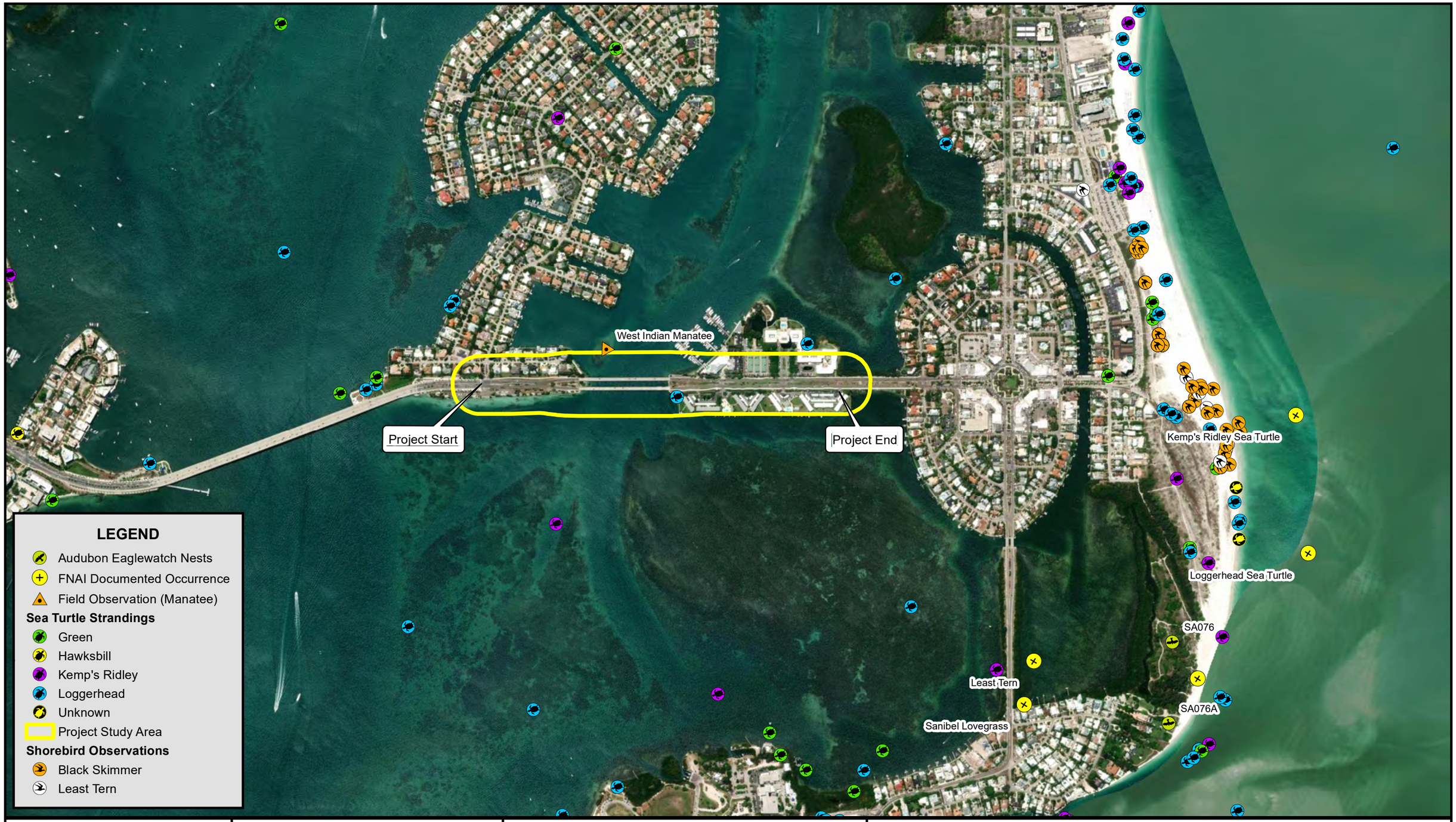
Species	Listing Status*	Potential for Occurrence	Proposed Effect Determination
Plants			
Aboriginal Prickly-Apple (*Harrisia aboriginum*)	USFWS/FDACS – Endangered	***None***	***No effect***
Florida Bonamia (*Bonamia grandiflora*)	USFWS/FDACS – Endangered	***None***	***No effect***
Florida Golden Aster (*Chrysopsis floridana*)	USFWS/FDACS – Endangered	***None***	***No effect***
Pygmy Fringe Tree (*Chionanthus pygmaeus)*	USFWS/FDACS – Endangered	***None***	***No effect***
Sanibel lovegrass (*Eragrostis pectinacea* var. *tracyi*)	FDACS – Endangered	***None***	***No effect anticipated***
Invertebrates			
Monarch Butterfly (*Danaus plexippus*)	USFWS – Candidate	***High***	***N/A***
Fish			
Gulf Sturgeon (*Acipenser oxyrinchus desotoi*)	NMFS/USFWS – Threatened	***Low***	***May affect, not likely to adversely affect***
Smalltooth Sawfish (*Pristis pectinata*)	NMFS – Endangered	***Low***	***May affect, not likely to adversely affect***
Giant Manta Ray (*Manta birostris*)	NMFS – Threatened	***Low***	***May affect, not likely to adversely affect***
Reptiles			
Eastern Indigo Snake (*Drymarchon corais couperi*)	USFWS – Threatened	***None***	***No effect***
Green Sea Turtle (*Chelonia mydas*)	USFWS – Endangered	***High***	***May affect, not likely to adversely affect***
Hawksbill Sea Turtle (*Eretmochelys imbricata*)	USFWS – Endangered	***Low***	***May affect, not likely to adversely affect***
Kemp's Ridley Sea Turtle (*Lepidochelys kempii*)	USFWS – Endangered	***High***	***May affect, not likely to adversely affect***
Leatherback Sea Turtle (*Dermochelys coriacea*)	USFWS – Endangered	***Low***	***May affect, not likely to adversely affect***
Loggerhead Sea Turtle (*Caretta caretta*)	USFWS – Threatened	***High***	***May affect, not likely to adversely affect***
Gopher Tortoise (*Gopher polyphemus*)	FWC – Threatened	***None***	***No effect anticipated***
Birds			
Eastern Black Rail (*Laterallus jamaicensis jamaicensis*)	USFWS – Threatened	***None***	***No effect***
Florida Scrub-Jay (*Aphelocoma coerulescens*)	USFWS – Threatened	***None***	***No effect***
Piping Plover (*Charadrius melodus*)	USFWS – Threatened	***Low***	***May affect, not likely to adversely affect***

Species	Listing Status*	Potential for Occurrence	Proposed Effect Determination
Red Knot (*Calidris canutus rufa*)	USFWS – Threatened	***Low***	***May affect, not likely to adversely affect***
Wood Stork (*Mycteria americana*)	USFWS – Threatened	***Low***	***May affect, not likely to adversely affect***
American Oystercatcher (*Haematopus palliatus*)	FWC – Threatened	***Low***	***No adverse effect anticipated***
Black Skimmer (*Rynchops niger*)	FWC – Threatened	***Low***	***No adverse effect anticipated***
Florida Burrowing Owl (*Athene cunicularia*)	FWC – Threatened	***None***	***No effect anticipated***
Florida Sandhill Crane (*Antigone canadensis pratensis*)	FWC – Threatened	***Low***	***No adverse effect anticipated***
Least Tern (*Sternula antillarum*)	FWC – Threatened	***High***	***No adverse effect anticipated***
Little Blue Heron (*Egretta caerulea*)	FWC – Threatened	***Moderate***	***No adverse effect anticipated***
Reddish Egret (*Egretta rufescens*)	FWC – Threatened	***Low***	***No adverse effect anticipated***
Roseate Spoonbill (*Platalea ajaja*)	FWC – Threatened	***Moderate***	***No adverse effect anticipated***
Snowy Plover (*Charadrius nivosus*)	FWC – Threatened	***Low***	***No adverse effect anticipated***
Tricolored Heron (*Egretta tricolor*)	FWC – Threatened	***Moderate***	***No adverse effect anticipated***
Bald Eagle (*Haliaeetus leucocephalus*)	N/A[1]	***Moderate***	***N/A***
Mammals			
Florida Bonneted Bat (*Eumops floridanus*)	USFWS – Endangered	***Low***	***May affect, not likely to adversely effect***
Tricolored Bat (*Perimyotis subflavus*)	USFWS – Candidate	***Low***	***N/A***
West Indian Manatee (*Trichechus manatus latirostris*)	USFWS - Threatened	***High (observed)***	***May affect, not likely to adversely effect***
Miscellaneous bat species	FWC – NL[2]	***Moderate***	***N/A***

*FWC listing status was not included for species with the same federal listing status because of the State's deferment to federal status under Chapter 68A-27, F.A.C.

(1) Protected under the federal Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act

(2) Protected under the Florida Administrative Code (F.A.C.) rule 68A-4.001 General Prohibitions and rule 68A-9.010 Taking Nuisance Wildlife



SR 789 (Little Ringling Bridge)
From Bird Key Drive
to Sarasota Harbor West
FPID No.: 436680-1-22-01

Project Development and Environment Study

Figure 3-1: Protected Species Occurrences

Sources: Audubon, 2022; ETDM, 2022; ESRI, 2022; FWC, 2020b; RK&K, 2020 (Field Review); FNAI, 2020a

0 1,000 2,000 4,000

Feet

1 inch = 1,000 feet

3.2 Federally Listed Species and Designated Critical Habitat

3.2.1 Flora

The study area was evaluated for the potential occurrence of federally-listed plant species. Four federally-listed plant species were considered due to potential for occurrence within Sarasota County and are discussed below. No federally-listed plant species were observed during project field reviews. Lack of observations are attributed to the extensive human development that has occurred within and adjacent to the project study area.

Aboriginal Prickly-Apple (*Harrisia aboriginum*)

The aboriginal prickly-apple cactus is listed as endangered by the USFWS and the FDACS. The species was formerly found throughout south Florida and the Keys. It is now found in Charlotte, Sarasota and Lee counties. It has been eliminated from the northern extent of its range in Manatee County. The species occurs in coastal strand vegetation (relatively low, salt-tolerant shrubs and grasses), tropical coastal hammocks with trees including gumbo limbo, wild lime or live oak. No suitable habitat for this species exists within the project study area. The species was not observed during field reviews or documented within the FNAI *Standard Data Report* (**Appendix F**). Based on the extent and history of local development, the potential for species occurrence within the project study area is considered to be **none**. Therefore, the FDOT has determined that the Preferred Alternative will have **"*no effect*"** on the aboriginal prickly-apple.

Florida Bonamia (*Bonamia grandiflora*)

This Florida bonamia is listed as endangered by the USFWS and the FDACS. The species is found in peninsular Florida from Marion County south to Sarasota and Highland counties. Available information suggests that the species at least historically occurred in Sarasota County. The species is most commonly found in sand pine (*Pinus clausa*) scrub vegetation with evergreen scrub oaks and sand pine. In the Ocala National Forest, where most of its remaining populations exist, Florida bonamia is restricted to these bare sunny sand areas, including the margins of sand pine stands on road rights-of-way, fire lanes, and other places which are kept clear of trees and shrubs. No suitable habitat for this species exists within the project study area. The species was not observed during field reviews or documented within the FNAI *Standard Data Report.* Based on the extent and history of local development, the potential for species occurrence within the project study area is considered to

be **none**. Therefore, the FDOT has determined that the Preferred Alternative will have **"*no effect*"** on the Florida bonamia.

Florida Golden Aster (*Chrysopsis floridana*)

The Florida golden aster is listed as endangered by the USFWS and the FDACS. The species is currently known to occur within Hardee, Hillsborough, Manatee and Pinellas counties; however, the USFWS suggests systematic surveys should be continued in DeSoto and Sarasota counties. The species grows in open, sunny areas. It occurs in sand pine-evergreen oak (*Quercus* sp.) scrub vegetation on excessively-drained fine white sand. Historically, it also grew on beach dunes. No suitable habitat for this species exists within the project study area. The species was not observed during field reviews or documented within the FNAI *Standard Data Report.* Based on the extent and history of local development, the potential for species occurrence within the project study area is considered to be **none**. Therefore, the FDOT has determined that the Preferred Alternative will have "***no effect***" on the Florida golden aster.

Pygmy Fringe Tree (*Chionanthus pygmaeus*)

The Pygmy fringe tree is listed as endangered by the USFWS and the FDACS. The species occurs in central Florida from Lake County south to Sarasota County and inhabits scrub, sandhill, and xeric hammock, primarily on the Lake Wales Ridge. No suitable habitat for this species exists within the project study area. The species was not observed during field reviews or documented within the FNAI *Standard Data Report.* Based on the extent and history of local development, the potential for species occurrence within the project study area is considered to be **none**. Therefore, the FDOT has determined that the Preferred Alternative will have **"*no effect*"** on the pygmy fringe tree.

3.2.2 Fauna

Sixteen federally-listed vertebrate species, one candidate invertebrate species, and one candidate vertebrate species were considered due to previous documentation of occurrence within, or with range proximity to Sarasota County and are discussed as follows. Although the USFWS' consultation areas for the Audubon's crested caracara (*Polyborus plancus*) and Florida grasshopper sparrow (*Ammodramus savannarum floridanus*) include a portion of Sarasota County, the project study area for the Preferred Alternative lies outside of the USFWS' consultation areas for these species. Therefore, these species are not included/discussed further.

Monarch Butterfly (*Danaus plexippus*)

The monarch butterfly was identified as a candidate species for protections under the ESA by the USFWS on May 3, 2022. It is not yet proposed for listing. Within North America, the monarch butterfly is a highly migratory species which typically winters in Mexico. However, there is a resident population of this species within Florida. This species requires a diversity of blooming nectar resources, but of particular importance is milkweed (*Asclepias* spp.). Milkweed is a microhabitat requirement for this species to both deposit eggs and as a larval nutrition source. While the project occurs largely over open water, where milkweed cannot occur, milkweed species are known to occur throughout Sarasota County and can occur within roadside environments such as those within the project bridge approaches. Given the potential for milkweed to occur within the project study area, and the monarch's mobility, the potential for occurrence of this species within the project study area is considered high.

As this species is a candidate species and not currently proposed for listing, consultation for this species is not required at this time. If the listing status of the monarch butterfly is elevated by USFWS to Threatened or Endangered and the Preferred Alternative is located within the consultation area, FDOT commits to re-initiating consultation with the USFWS during the design and permitting phase of the project to determine the appropriate survey methodology and to address USFWS regulations regarding the protection of the monarch butterfly.

Gulf Sturgeon (*Acipenser oxyrinchus desotoi*)

The Gulf sturgeon is listed as threatened by the NMFS, USFWS, and the FWC. The Gulf sturgeon is a sub-species of the Atlantic sturgeon that can be found from Lake Pontchartrain and the Pearl River system in Louisiana and Mississippi to the Suwannee River in Florida. An anadromous species, Gulf sturgeons hatch in the freshwater of rivers, then head out to sea as juveniles, and return to the rivers of their birth to spawn (lay eggs) when they reach adulthood. The project study area is well outside the species' typical range and designated critical habitat limits (Suwanee River and Florida panhandle tributary streams); however, available information indicates that the species is rarely captured in the vicinity of Sarasota Bay and Charlotte Harbor. Given the project's direct connectivity to the Gulf of Mexico, the possibility of the species within or adjacent to the project study area cannot

be discounted. The potential for Gulf sturgeon occurrence within the project study area is considered to be **low**.

Although not identified within the FNAI *Standard Data Report*, there is a remote potential that individual Gulf sturgeon could utilize portions of Sarasota Bay within the project study area. The project will directly impact 0.03 acre of mangroves hydrologically contiguous with the Gulf of Mexico. These mangroves could serve as refugia for juvenile Gulf sturgeon which may be in the area. Additional project impacts to habitats which could be utilized by the sturgeon include approximately 2.46 acres of shading impacts to the waters of Sarasota Bay and a loss of 60.47 cubic yards of water column for the proposed bridge piles. There is potential that the project construction could result in noise and/or vibratory impacts to aquatic species, including any sturgeon which may be near the project area during project construction. Details regarding the project's anticipated bridge construction methods are provided in Section 3.5.

The FDOT will implement the NMFS Southeast Regional Office (SERO) *Protected Species Construction Conditions* (2021), and FDOT Supplemental Specification SP0070104-8 *Additional Requirements for Sturgeon* (**Appendix G**) during construction to avoid and minimize adverse impacts to the species. Considering the low potential for occurrence within the project study area and the implementation of protection measures, the FDOT has determined that the Preferred Alternative **"*may affect, not likely to adversely affect*"** the Gulf sturgeon. There will be no impacts to designated critical habitat for the species, as none occurs in the project study area.

Smalltooth Sawfish (*Pristis pectinata*)

The smalltooth sawfish is listed as endangered by the NMFS and the FWC. Although smalltooth sawfish are found primarily from Charlotte Harbor to the Florida Keys, the species has been documented at various locations along the west coast of Florida, including in the vicinity of Tampa Bay. Juvenile smalltooth sawfish habitats differ from adult habitats. Juveniles inhabit coastal areas such as estuaries, river mouths, and bays year-round. They have been recorded from a variety of habitat types including unvegetated mud and sand bottoms, especially along red mangrove shorelines. Also, juveniles use creeks and canals that connect to the main stem of rivers as habitat. Potential habitat includes waters under docks, bridges, and piers. Juveniles typically inhabit salinities between 18 and 30 parts per thousand (PPT) (the ocean is 35 PPT), sometimes miles up rivers. Adult smalltooth sawfish are typically found in open water habitats but have been encountered near coral reefs and occur inshore during the spring when females give birth and mating is thought to occur.

The project study area is approximately 44 miles north of designated smalltooth sawfish critical habitat at the mouth of the Charlotte Harbor estuary. Although not documented within the FNAI *Standard Data Report*, given the project's direct connectivity to the Gulf of Mexico, the possibility of the smalltooth sawfish occurring within or adjacent to the project study area cannot be discounted. The potential for smalltooth sawfish occurrence within the project study area is considered to be **low**.

Similar to the Gulf sturgeon, there is potential that individual smalltooth sawfish could utilize the mangrove habitat to be impacted by the project. As discussed for the sturgeon, the project will directly impact 0.03 acre of mangroves hydrologically contiguous with the Gulf of Mexico. These mangroves could serve as refugia for juvenile sawfish which may be in the area. Additional project impacts to habitats which could be utilized by the sawfish include approximately 2.46 acres of shading impacts to the waters of Sarasota Bay and a loss of 60.47 cubic yards of water column for the proposed bridge piles. There is potential that the project construction could result in noise and/or vibratory impacts to aquatic species, including any sawfish which may be near the project area during project construction.

The FDOT will implement the NMFS' *Vessel Strike Avoidance Measures, NOAA Fisheries Southeast Regional Office*, NMFS' SERO's *Protected Species Construction Conditions*, and FDOT Supplemental Standard Specification SP0070104-5 *Additional Requirements for Smalltooth Sawfish* (**Appendix G**) during construction to avoid and minimize adverse impacts to the species. Considering the low potential for occurrence within the project study area and the implementation of protection measures, the FDOT has determined that the Preferred Alternative **"*may affect, not likely to adversely affect*"** the smalltooth sawfish. There will be no impacts to designated critical habitat for the species, as none occurs in the project vicinity.

Giant Manta Ray (*Manta birostris*)

The giant manta ray is listed as threatened by the NMFS. While this species is commonly found in near-shore oceanic waters, it can be found in estuarine waters, oceanic inlets, bays, and intercoastal waterways. Given the project's proximity to Sarasota Bay and the hydrologic connectivity to the Gulf of Mexico, there is a possibility of occurrence for this species. However, unlike the sturgeon and sawfish, manta utilization of estuarine habitats is seemingly incidental. Mating typically occurs over coral reefs and pups are born live at approximately 1 meter (3.2 ft) in size and do not require protective habitats. Additionally, this species was not documented within the FNAI *Standard Data Report.* Considering these factors, the potential for occurrence of this species is considered to be **low**.

While there is potential for occurrence of this species within the project study area, any occurrence would likely be incidental. The project will result in approximately 2.46 acres of shading impacts to the waters of Sarasota Bay and a loss of 60.47 cubic yards of water column for the proposed bridge piles which are currently accessible to the manta. However, there is potential that the project construction could result in noise and/or vibratory impacts to aquatic species, including any mantas which may be near the project area during project construction. Considering the low potential for occurrence within the project study area and the implementation of protection measures, the FDOT has determined that the Preferred Alternative **"*may affect, not likely to adversely affect*"** the giant manta ray.

Eastern Indigo Snake (*Drymarchon corais couperi*)

The eastern indigo snake is listed as a threatened species by the USFWS. The species is distributed throughout the southeastern United States but is subject to loss and degradation of habitat. The species is found in a variety of habitats including swamps (including mangroves), wet prairies, xeric pinelands, and scrub areas. It may utilize gopher tortoise burrows for shelter during the winter and to escape the heat during the summer. No individuals of this species were observed during the field surveys and given the development of the study area; no upland areas adjacent to the project are anticipated to provide suitable habitat for this species. Additionally, the mangroves within the study area are not anticipated to provide habitat for this species given the lack of adjacent upland habitat and that these areas are typically only composed of one or two trees. Given the lack of habitat, that it was not observed during field reviews or documented within the FNAI Standard Data Report, and due to the extent of human development and limited terrestrial access to Coon Key and Bird Key, the potential for occurrence for this species within the project study area is considered to be **none**. Therefore, the FDOT has determined that the Preferred Alternative will have "**no effect**" on the eastern indigo snake by the proposed project.

Green Sea Turtle (*Chelonia mydas*), Hawksbill Sea Turtle (*Eretmochelys imbricata*), Kemp's Ridley Sea Turtle (*Lepidochelys kempii*), Leatherback Sea Turtle (*Dermochelys coriacea*) and Loggerhead Sea Turtle (*Caretta caretta*)

The green, hawksbill, Kemp's Ridley, and leatherback sea turtles are listed as endangered by the USFWS and the NMFS. The loggerhead sea turtle is listed as threatened by the USFWS and the NMFS. These species are known to range throughout the Gulf of Mexico and occur along west Florida beaches. Green, loggerhead, and Kemp's Ridley sea turtles typically the use Gulf Coast beaches and

coastal dunes for nesting. Leatherback and hawksbill sea turtles are more commonly found in the Florida Keys and along the Atlantic coast but have been rarely documented in Sarasota County. The project study area does not contain any primary beach or coastal dune nesting habitat. Only narrow strips of beach-like habitat occur along the north side of the City of Sarasota's Bird Key Park (which will not be impacted by the proposed improvements) and under the east end of the SR 789 bridges. Waterfront habitats within the project study area are typically armored with revetment or seawall, and there is no sea turtle nesting habitat within the project study area. The Kemp's Ridley sea turtle is listed as being "documented" in the project vicinity within the FNAI *Standard Data Report*. However, a review of the FWC's sea turtle stranding data layer documents numerous strandings consisting of green, hawksbill, loggerhead, and Kemp's Ridley turtles within Sarasota Bay and the Coon Key Waterway. Based on these observations and the project's connection to the Gulf, the potential for occurrence for the green, loggerhead and Kemp's Ridley sea turtles within the project study area is considered to be **high**. Based on their preferred range, the potential for occurrence for the hawksbill and leatherback sea turtles within the project study area is considered to be **low**. It should be noted that there is potential that the project construction could result in noise and/or vibratory impacts to aquatic species, including any sea turtles which may be near the project area during project construction. Therefore, the FDOT will implement the NMFS' *Vessel Strike Avoidance Measures, NOAA Fisheries Southeast Regional Office*, NMFS' SERO's *Protected Species Construction Conditions*, and FDOT Supplemental Standard Specification SP0070104-6 *Additional Requirements for Sea Turtles* during construction (**Appendix G**). With these precautions in place, the FDOT has determined that the Preferred Alternative "***may affect, not likely to adversely affect***" the green, hawksbill, Kemp's Ridley, leatherback and loggerhead sea turtles.

<u>Eastern Black Rail (*Laterallus jamaicensis jamaicensis*)</u>

The eastern black rail is listed as threatened by the USFWS. This species is found sporadically throughout the eastern half of the United States, including both coastal and freshwater marsh habitats throughout Florida. The eastern black rail is a wetland dependent subspecies. While it can be found in salt, brackish, and freshwater marshes that are tidally or non-tidally influenced, it has a very specific niche habitat. It requires dense herbaceous vegetation to provide shelter and cover and areas for protected nest sites; it is not found in areas with woody vegetation. Occupied habitat tends to be primarily composed of fine-stemmed emergent plants (rushes, grasses, and sedges) with high stem densities and dense cover. The bird requires shallow water or moist soil for its nesting sites and elevated refugia with dense cover to survive high water events, because juvenile and adult black rails

prefer to walk and run rather than fly and chicks are unable to fly. The wetlands within and adjacent to the project study area are minimal and entirely coastal in nature. Although the species is known to occupy certain coastal wetland habitats, these wetlands are comprised of woody mangroves with no emergent habitat, as typically occupied by the species. The species was not observed during project field reviews or documented within the FNAI *Standard Data Report*. Given these factors, and due to the lack of suitable habitat available, the potential for eastern black rail occurrence within the project study area is considered to be **none**. Therefore, the FDOT has determined that the Preferred Alternative will have "***no effect*"** on the eastern black rail.

Florida Scrub-Jay (*Aphelocoma coerulescens*)

The Florida scrub-jay is listed as threatened by the USFWS. This species prefers xeric oak habitats with well-drained sandy soils that are adapted to periodic drought and frequent fires. Three classes of scrub-jay habitat are defined by the USFWS Species Conservation Guidelines, South Florida, Florida Scrub-Jay (USFWS 2004):

Type I – any upland plant community in which percent cover of the substrate by scrub oak (*Quercus* sp.*)* species is 15 percent or more.

Type II – any plant community, not meeting the definition of Type I habitat, in which one or more scrub oak species is represented.

Type III – any upland or seasonally dry wetland within 400 meters (0.25 miles) of any area designated as Type I or Type II habitat.

Based on the local development and land uses, there are no areas of suitable Florida scrub-jay habitat within the project study area. Additionally, no individuals were observed during the field reviews, and none were documented in the FNAI report. Therefore, the potential for species occurrence within the project study area is considered to be **none,** and the FDOT has determined that the Preferred Alternative will have **"*no effect*"** on the Florida scrub-jay.

Piping Plover (*Charadrius melodus*)

The piping plover is listed as threatened by the USFWS. This species is found along Gulf Coast states and Mexico, along the Atlantic Coast from Florida to Newfoundland, and west to northern Michigan and Wisconsin. Piping plovers do not breed in Florida but spend a large portion of their year

"wintering" in coastal areas that support intertidal beaches and flats and associated dune systems and flats above annual high tide. The project study area does not contain any primary/intertidal beach or coastal dune habitat. Only narrow strips of beach-like habitat occur along the north side of the City of Sarasota's Bird Key Park (which will not be impacted by the proposed improvements) and under the east end of the SR 789 bridges. While these areas may provide suitable, albeit low quality, foraging habitat for the piping plover, waterfront habitats within the project study area are typically armored with revetment or seawall and there is no piping plover nesting habitat within the project study area. Considering these factors and that this species was not observed during project field reviews or documented within the FNAI *Standard Data Report*, the potential for occurrence for this species within the project study area is considered to be **low**. Therefore, the FDOT has determined that the Preferred Alternative **"*may affect, not likely adversely affect*"** the piping plover.

Red Knot (*Calidris canutus rufa*)

The red knot is listed as threatened by the USFWS. Red knots have long migrations between Canada and South America and forage along sandy intertidal beaches from Maryland through Florida during spring and fall migration. The project study area does not contain any primary/intertidal beach or coastal dune habitat. Only narrow strips of beach-like habitat occur along the north side of the City of Sarasota's Bird Key Park (which will not be impacted by the proposed improvements) and under the east end of the SR 789 bridges. Waterfront habitats within the project study area are typically armored with seawall, resulting in minimal, low quality red knot foraging habitat within the project study area. Considering these factors and that this species was not observed during project field reviews or documented within the FNAI *Standard Data Report*, the potential for occurrence for this species within the project study area is considered to be **low**. Therefore, the FDOT has determined that the Preferred Alternative **"*may affect, not likely to adversely affect*"** the red knot.

Wood Stork (*Mycteria americana*)

The wood stork is listed as threatened by the USFWS. This species is primarily associated with freshwater and estuarine habitats for nesting, roosting, and foraging. Typical foraging sites include freshwater marshes, stock ponds, shallow, seasonally flooded roadside and agricultural ditches, managed impoundments, and depressions in cypress (*Taxodium* spp.) heads and swamp sloughs. Ideal foraging conditions are characterized by water that is relatively calm, uncluttered by dense thickets of aquatic vegetation, and having a water depth between 5 and 15 inches. The proposed project occurs within the 18.6-mile core foraging area radius of four known active wood stork colonies

(Ayers Point-Dot Dash, Casey Key Sorrento Inlet, Blackburn Bay and Doan Bay). During the project field reviews, wood storks were not observed foraging in ditches and waterfront habitats within the project study area. However, the species' potential for occurrence within the project study area is considered to be **high** as it is expected to occur throughout Sarasota County and due to the presence of suitable foraging habitat.

As discussed further in Section 4, the proposed improvements will directly impact 0.03 acre of wetlands which may provide suitable foraging habitat for the wood stork. The project's implementation of wetland impact avoidance and minimization measures, as well as compensatory mitigation to offset project impacts are anticipated to reduce potential impacts to the wood stork. Considering these factors and based on the USFWS' *South Florida Programmatic Wood Stork Effect Determination Key* (USFWS 2010), the FDOT has determined that the Preferred Alternative "***may affect, not likely to adversely affect***" the wood stork per the following key couplets: A>B>MANLAA. The applicable consultation key is included in **Appendix G**.

Florida Bonneted Bat (*Eumops floridanus*)

The Florida bonneted bat is listed as endangered by the USFWS. In October 2019, the USFWS released their *Consultation Key for the Florida Bonneted Bat* and *Florida Bonneted Bat Consultation Guidelines*. The USFWS is currently in the proposed critical habitat designation/rulemaking process for the species. Although the entire project study area occurs within the USFWS' consultation area for the species, it lies outside of any units being considered for critical habitat.

The Florida bonneted bat is known to roost in a variety of man-made structures and natural roosts including Spanish barrel roof tile, palm trees, and in cavities within pine trees and utility poles. Roosts are typically situated in a variety of features at least 15 feet off the ground. Bonneted bats rely on open spaces for foraging and avoid clutter as they are fast fliers but not as agile as smaller bats. Important foraging areas include wetlands and open freshwater sources such as ponds and streams where they will also fly low to drink water.

The USFWS' consultation key (2019a) uses habitat type (i.e., roosting or foraging), survey results, and project size as the basis for making effect determinations for the Florida bonneted bat. When proposed project areas provide features that could support roosting of Florida bonneted bats, it is considered roosting habitat. If evaluation of roosting habitat determines that roosting is not likely, then the area is subsequently evaluated for its value to the species as foraging habitat. The USFWS'

consultation key requires the likelihood that roosting is occurring be evaluated through a full acoustic survey, or for projects less than or equal to five acres, a limited roost survey which relies on peeping and visual assessment of potential roost areas.

The proposed improvements will be limited to the existing SR 789 roadway/transportation ROW. Although the overall project size is 14.07 acres (which exceeds the overall 5-acre threshold expressed in couplet 3 of the consultation key), approximately 6.55 acres is existing paved surface. The remaining 7.52 acres is landscaped vegetation, of which approximately 2.29 acres provides trees (predominantly landscaped) which could provide a minor amount of potential roosting habitat. Based on the limited extent of potential roosting habitat available, a limited roost survey was conducted during project field reviews conducted in January 2020 in accordance with the USFWS' consultation key (2019a). Given the lack of sizable trees, the roost survey was primarily conducted on manmade structures (i.e., buildings and the project bridges). These structures were visually inspected for potential cavities which may house bats, guano, and sounds of bats. The project bridges were further inspected from a boat during the July 2020 aquatic resource surveys. During the limited roost survey, no use of houses or man-made structures, no evidence of tree snags, or trees with cavities, hollows, deformities, decay, crevices, or loose bark of sufficient size to harbor a Florida bonneted bat was noted. The SR 789 bridges are approximately 15.7 ft above mean tidal elevation at the middle and approximately 5 ft above mean tidal elevation at the ends. Therefore, the height of a majority of the bridge is less than the 15-ft elevation discussed for man-made structures serving as potential roosting habitat. No evidence of bat usage (i.e., staining or guano) was noted under the SR 789 bridges or in adjacent areas. Observations during the limited roost survey determined that Florida bonneted bat roosting within the project limits is unlikely. The foraging habitat provided within this transportation ROW is not unique at either a regional or a local level.

The potential for Florida bonneted bat occurrence within the project study area is considered to be **low** based on the extent of human development and the negligible amount of available habitat. As such, the USFWS's consultation key applied to this project results in the following determination: 1a>2a>3a>4b>MANLAA-P ("may affect, not likely to adversely affect – programmatic concurrence). As part of the programmatic concurrence, the FDOT will implement Best Management Practices 1, 4, 9, and 12 (see **Appendix G**). Therefore, the FDOT has determined that the Preferred Alternative "**may affect, not likely to adversely affect**" the Florida bonneted bat. The applicable consultation key is included in **Appendix G**.

Tricolored Bat (*Perimyotis subflavus*)

The tricolored bat was proposed for protections under the ESA by the USFWS on September 13, 2022, and is currently proposed for listing. Typically a cave-dwelling bat, this is one of the smallest bat species in North America. Within the American south, where caves are less common, this species is known to roost in manmade structures such as roadway culverts. Like the Florida bonneted bat, the tricolored bat will also roost within tree cavities. Based on the results of the limited roost survey conducted (previously discussed in the bonneted bat section), there are no signs of any bat usage in the existing bridges. Additionally, no houses or man-made structures, no evidence of tree snags, or trees with cavities, hollows, deformities, decay, crevices were observed within the project's proposed construction footprint. Considering the results of the limited roost survey and the development of the project area, the potential for tricolored bat occurrence within the project footprint is considered **low**. However, the project may result in impacts to the tricolored bat in the form of vegetation removal and the temporary loss of the potential roost of the existing bridges during construction.

As this species is a candidate species currently proposed for listing, consultation for this species is not required at this time. If the listing status of the tricolored bat is elevated by USFWS to Threatened or Endangered and the Preferred Alternative is located within the consultation area, FDOT commits to re-initiating consultation with the USFWS during the design and permitting phase of the project to determine the appropriate survey methodology and to address USFWS regulations regarding the protection of the tricolored bat.

West Indian Manatee (*Trichechus manatus latirostris*)

The West Indian Manatee is listed as threatened by the USFWS. The species can be found along the coastal and inland waters of the southern United States, throughout the Caribbean Islands, and along the eastern coasts of Mexico and Central America and the northern coast of South America. In the United States, the Florida manatee inhabits the state's coastal waters, rivers, and springs. In the Gulf, Florida manatees can be found west through coastal Louisiana and are occasionally sighted as far west as Texas. Prior to winter's coldest months, these manatees migrate back to Florida's warm water habitats, which include artesian springs and power plant discharge canals.

The West Indian manatee is known to occur in Sarasota Bay, and the species was observed during aquatic surveys. Therefore, the species' potential occurrence within the project study area is considered to be **high**. As such, the FDOT will implement the USFWS' *Standard Manatee Conditions*

for In-Water Work (2011) and FDOT Supplemental Standard Specification SP0070104-4 *Additional Requirements for Manatees* during construction (see **Appendix G**). In-water construction vessels will adhere to established manatee protection zone requirements under 68C-22.026(2)(a), FAC. Per the USFWS/US Army Corps of Engineers' Manatee Consultation Key, dated April 25, 2013 and Key Addendum, dated May 13, 2019, the waters around Coon Key and Bird Key are noted as Important Manatee Areas (IMAs), so project construction is anticipated to require at least one dedicated manatee observer on-site for all in-water construction. It should be noted that there is potential that the project construction could result in noise and/or vibratory impacts to aquatic species, including any manatee which may be near the project area during project construction. No driving of bridge piles or metal sheet piles by impact hammer will occur outside of daylight hours (i.e., one-half hour after sunrise to one-half hour before sunset). With the implementation of these protection measures, the FDOT has determined that the Preferred Alternative "***may affect, not likely to adversely affect***" the West Indian manatee. This is supported by the following consultation key couplets: A>B>C>D>E>F>G>N>O>P>MANLAA. The applicable consultation key is included in **Appendix G**. However, as the project will require pile-driving within an IMA, consultation is required with the USFWS to verify this effect determination per the Key Addendum issued on May 13, 2019 (included in **Appendix G**).

3.2.3 Critical Habitat

Currently, no designated critical habitat as defined in 50 CFR, Part 17 for any federal listed species occurs within or immediately adjacent to the project study area. The nearest designated critical habitat polygons are mapped for the aboriginal prickly-apple and loggerhead sea turtle on Longboat Key. However, these habitats are 1.2 and 1.3 miles northwest of the project study area, respectively. The proposed critical habitat designation/rulemaking process for the Florida bonneted bat is in progress. However, critical habitat has not been officially designated and the entire project lies outside of any units being considered for critical habitat. Therefore, the proposed improvements will have no involvement with any designated critical habitat.

3.3 State Listed Species

3.3.1 Flora

In addition to the species discussed previously in subsection 3.2.1, one state-listed plant species was assessed due to previous documentation of occurrence within Sarasota County. State-listed plant species were not observed during project field reviews.

Sanibel Island lovegrass (*Eragrostis pectinacea* var. *tracyi*)

The Sanibel Island lovegrass is listed as endangered by the FDACS. The species is endemic to the southwest Florida coastal counties, from Pinellas County south to Collier County. This species is often associated with drier, compact soils of disturbed beach dunes, maritime hammocks, coastal strands, coastal grasslands, old fields, clearings and other disturbed sites. The FNAI currently contains 14 occurrence records in its database, however, all are pre-1980. The species' habitat is threatened by rapid coastal development, such as the development present within the project study area. Based on the extent and history of local development and lack of recently documented occurrences, the potential for occurrence for this species within the project study area is considered to be **none,** and the FDOT has determined that the Preferred Alternative will have "***no effect anticipated***" on the Sanibel Island lovegrass.

3.3.2 Fauna

The eleven species discussed in this section are listed by the FWC and included within the FWC's 2016 *Imperiled Species Management Plan* (ISMP). Additional species-specific action plans and permitting guidelines are summarized as applicable.

Gopher Tortoise (*Gopherus polyphemus*)

The gopher tortoise currently is listed as threatened by the FWC. This species occurs throughout Florida and requires well-drained and loose sandy soils for burrowing and low-growing herbs and grasses for foraging. The gopher tortoise is found in a wide variety of habitats including scrub, xeric oak hammocks, dry prairies, pine flatwoods, pastures, and lawns. Although gopher tortoises are known to occur on coastal islands, no tortoises or burrows were observed during project field reviews, and the species was not documented within the FNAI *Standard Data Report.* This is attributable to the significant human development within the study area and lack of suitable habitat. The potential for this species is considered to be **none** due to the lack of undeveloped terrestrial habitats and lack of access to external source populations. As such, the FDOT has determined that the Preferred Alternative will have "***no effect anticipated*"** on the gopher tortoise.

American Oystercatcher (*Haematopus palliatus*)

The American oystercatcher is listed as threatened by the FWC. The species can be found from the coasts of the northeastern U.S. down to Florida's Gulf Coast. Florida is home to both a resident breeding population and a large wintering population of American oystercatchers. The species inhabits beaches, sandbars, spoil islands, shell rakes, salt marsh, and oyster reefs. The project study area does not contain any primary/intertidal beach or coastal dune habitat. Only narrow strips of beach-like habitat, which may provide suitable habitat for this species, occur along the north side of the City of Sarasota's Bird Key Park (which will not be impacted by the proposed improvements) and under the east end of the SR 789 bridges. However, no oystercatchers were observed within or adjacent to the project study area during project field reviews and the species was not documented within the FNAI *Standard Data Report.* The potential occurrence for this species within the project study area is considered to be **low**. As such, the FDOT has determined that the Preferred Alternative will have "***no adverse effect anticipated***" on the American oystercatcher.

Black Skimmer (*Rynchops niger*)

The black skimmer is listed as threatened by the FWC. Skimmers can be found from the coasts of the northeastern U.S., down to Mexico, and over to the Gulf Coast of Florida. The species inhabits coastal areas in Florida such as estuaries, beaches, and sandbars. Only narrow strips of beach-like habitat, which may provide suitable habitat for this species, occur along the north side of the City of Sarasota's Bird Key Park (which will not be impacted by the proposed improvements) and under the east end of the SR 789 bridges. However, no skimmers were observed within or adjacent to the project study area during project field reviews, and the species was not documented within the FNAI *Standard Data Report.* The potential occurrence for this species within the project study area is considered to be **low**. As such, the FDOT has determined that the Preferred Alternative will have "***no adverse effect anticipated***" on the black skimmer.

Florida Burrowing Owl (*Athene cunicularia*)

The Florida burrowing owl is listed as threatened by the FWC. The range of the burrowing owl is throughout the peninsular Florida in patches and localized areas. The species inhabits open prairies in Florida that have very little understory vegetation and good visibility. These areas include golf courses, airports, pastures, agriculture fields, and vacant lots. Although burrowing owls are known to use coastal islands elsewhere within their range (e.g., Marco Island, Florida Keys, the Bahamas),

there is no suitable habitat within or adjacent to the project study area. No burrowing owls or owl burrows were observed within or adjacent to the project study area and the species was not documented within the FNAI *Standard Data Report*. Therefore, the potential occurrence for this species within the project study area is considered to be **none,** and the FDOT has determined that the Preferred Alternative will have "***no effect anticipated***" on the Florida burrowing owl.

Florida Sandhill Crane (*Antigone canadensis pratensis*)

The Florida sandhill crane is listed as threatened by the FWC. Two subspecies of sandhill crane occur in Florida. The Florida sandhill crane (*G. c. pratensis*), numbering 4,000 to 5,000, is a non-migratory year-round breeding resident. They are joined every winter by 25,000 migratory greater sandhill cranes (*G. c. tabida*), the larger of the two subspecies. The greater sandhill crane winters in Florida but nests in the Great Lakes region. Sandhill cranes occur throughout peninsular Florida north to the Okefenokee Swamp in southern Georgia; however, they are less common at the northernmost and southernmost portions of this range. This species utilizes shallow, non-forested wetlands to build its nest during late winter and spring on mats of vegetation about two ft in diameter and in shallow water. The species uses a variety of wetland and uplands for foraging habitat, which may include open areas such as lawns and crop fields. Although no wetlands suitable for nesting are present within the project study area, limited foraging habitat is present along sodded areas within the roadway ROW. No Florida sandhill cranes were seen/heard, no potential crane nests were observed within or adjacent to the project study area during project field reviews, and the species was not documented within the FNAI *Standard Data Report*. The species is considered to have a **low** potential to occur. The project will not result in wetland impacts that would affect nesting habitat for the species. The upland habitats that are proposed for impact which may provide foraging habitat are not unique or limited at either a regional or a local level. As such, the FDOT has determined that the Preferred Alternative will have "***no adverse effect anticipated***" on the Florida sandhill crane.

Least Tern (*Sternula antillarum*)

The least tern is listed as state-threatened by the FWC. Least terns are found along the U.S. Atlantic Coast, mid-Atlantic states, and down from Mexico to northern Argentina. In Florida, the least tern can be found throughout most coastal areas inhabiting areas along estuaries and bays. This species is most commonly found on beach and coastal dune habitats, but they are known to nest on gravel areas, including building rooftops. Additionally, based on reviews of available aerial photography, none of the buildings adjacent to the project limits appear to contain gravel roofs to support potential

nesting usage and the project will not result in any building demolitions. The project area does not contain any primary/intertidal beach or coastal dune habitat. Only narrow strips of suitable beach-like habitat occur along the north side of the City of Sarasota's Bird Key Park (which will not be impacted by the proposed improvements) and under the east end of the SR 789 bridges. There are minor gravel strips in conjunction with portions of landscaping, however, these are regularly disturbed by roadway ROW maintenance activities. Although no least terns were observed within or adjacent to the project study area during project field reviews and the species was not documented within the FNAI *Standard Data Report,* based on the extent of near-shore and open water foraging habitat present for the species, the potential occurrence for this species within the project study area is considered to be **high**. However, due to the abundance of suitable foraging habitat available in surrounding areas, the FDOT has determined that the Preferred Alternative will have "***no adverse effect anticipated***" on the least tern.

Little Blue Heron (*Egretta caerulea*), Reddish Egret (*Egretta rufescens*), Roseate Spoonbill (*Platalea ajaja*) and Tricolored Heron (*Egretta tricolor*)

The little blue heron, reddish egret, roseate spoonbill and tricolored heron are listed as threatened by the FWC. In Florida, the little blue heron and tricolored heron can be found in inland freshwater, estuarine and coastal wetlands. Roseate spoonbills have a similar distribution but tend to use inland freshwater wetlands somewhat less commonly. Reddish egrets are almost exclusively a coastal species. These species utilize shallow herbaceous or shrub-dominated wetlands for both nesting and foraging habitat. The project area does not contain any primary/intertidal beach habitat. Only narrow strips of beach-like habitat occur along the north side of the City of Sarasota's Bird Key Park (which will not be impacted by the proposed improvements) and under the east end of the SR 789 bridges. Although portions of the eastern and western ends of the SR 789 bridges are armored by seawall, adjacent waterward areas are shallow enough, particularly at low tide, to serve as foraging habitat for these species. Only two minor areas of intermingled black mangroves and green buttonwoods occur at the east end of the SR 789 bridges and no evidence of nesting was observed during project field reviews.

A review of the FWC's Water Bird Locator database does not show any current or former wading bird colonies or rookeries within or adjacent to the project limits. Although no listed wading birds were seen and no potential nests were observed during the project field reviews, these species have a **high** potential to occur. As discussed further in Section 4, the proposed improvements will result in

unavoidable impacts to wetlands and other surface water habitats that may be used by these species for foraging and nesting. The FDOT has determined that the Preferred Alternative will have "**no adverse effect anticipated**" on the little blue heron, reddish egret, roseate spoonbill and tricolored heron, as the project's implementation of wetland impact avoidance and minimization measures, as well as compensatory mitigation to offset project impacts are anticipated to reduce potential impacts to these species. If these species are documented nesting within the project during future project phases, the FDOT will coordinate further with the FWC and follow the species' Conservation Measures and Permitting Guidelines as applicable.

Snowy Plover (*Charadrius nivosus*)

The snowy plover is listed as threatened by the FWC. The snowy plover inhabits sandy beaches along coastal areas of the Americas, and some inland saline lakes and riverbeds west of the Rocky Mountains. This species occurs on Florida's narrow fringe of sandy beaches along the Gulf of Mexico coast. Within Florida, the breeding population is disjunct: one group occurs in northwest Florida from Escambia County to Franklin County, and the other occurs from Pasco to Collier counties in southwest Florida. Nesting occurs on open sandy beaches along the Gulf Coast between the months of February and August. The project area does not contain any primary/intertidal beach or coastal dune habitat. Only narrow strips of suitable beach-like habitat occur along the north side of the City of Sarasota's Bird Key Park (which will not be impacted by the proposed improvements) and under the east end of the SR 789 bridges. However, no snowy plovers were observed within or adjacent to the project study area during project field reviews and the species was not documented within the FNAI *Standard Data Report.* The potential occurrence for this species within the project study area is considered to be **low**. As such, the FDOT has determined that the Preferred Alternative will have "***no adverse effect anticipated***" on the snowy plover.

3.4 Other Protected Species

Bald Eagle (*Haliaeetus leucocephalus*)

The bald eagle is no longer listed under the ESA; however, it remains protected under the federal Bald and Golden Eagle Protection Act (16 U.S.C. § 668 et seq.) and the Migratory Bird Treaty Act (16 U.S.C. § 703 et seq.). A review of the FWC's Bald Eagle Nest database and Audubon's Eagle Watch database showed the nearest documented occurrence of a bald eagle nest to be nest SA 076 approximately 0.77 miles east of the project. No bald eagles were seen/heard, no eagle nests were

observed within 660 ft of the project study area during the project field review, and the species was not documented within the FNAI *Standard Data Report.* However, given the proximity of SA 076, the potential occurrence for this species within the project study area is considered to be **moderate**. If the species is documented nesting within 660 ft of the project limits during future project phases, the FDOT will coordinate further with the USFWS as applicable. No further considerations are required for the bald eagle at this time.

Miscellaneous bat species

Various bat species could occur/forage intermittently within or adjacent to the project study area. It is illegal to kill bats in Florida in accordance with F.A.C. Rule 68A-4.001, General Prohibitions. Since bats are particularly vulnerable to disturbance and harm when they are roosting in buildings and other man-made structures, protections for bats in structures are also included in F.A.C. Rule 68A-9.010, Taking Nuisance Wildlife. This rule does not allow the use of pesticides or poisons for the purpose of harming, killing, or deterring bats. This nuisance wildlife rule also states the minimum requirements that need to be followed if someone is going to remove bats from buildings and other structures. The substructure of the SR 789 bridges and adjacent areas were assessed during the project field reviews in January and July 2020. No evidence of bat usage (i.e., staining or guano) was noted under the SR 789 bridges or in adjacent areas. However, there is a known colony of several hundred Brazilian free-tailed bats (*Tadarida brasiliensis*) inhabiting the SR 789 bridge over Longboat Pass approximately 11 miles from the project study area. With the exception of the Florida bonneted bat (discussed previously), the potential occurrence for bat species within the project study area is considered to be **moderate**, based on potential availability of foraging habitat. Observations during project field reviews and the FBB limited roost survey determined that bat roosting within the project limits is unlikely. If bats are documented using the SR 789 bridges for roosting during future project phases, they will be managed through the implementation of exclusion devices in accordance with F.A.C. Rule 68A-9.010. No further considerations are required for non-listed bat species at this time.

4 WETLANDS AND OTHER SURFACE WATERS

The locations, limits, types, nature, and functions of all surface waters, including wetlands within the project limits were assessed as part of compliance with Presidential Executive Order (EO) 11990, "Protection of Wetlands" and USDOT Order 5660.1A, *Preservation of the Nation's Wetlands*. These federal policies require avoidance of long and short-term impacts and avoidance of direct and indirect support of new construction in wetlands to the fullest extent practicable. This effort is also consistent with the *Wetlands and Other Surface Waters* chapter of the PD&E Manual.

4.1 Methodology

Wetland and other surface water boundaries were approximated in both a desktop and field evaluation in conformance with the federal and state criteria promulgated in the *Corps of Engineers Wetlands Delineation Manual*, the *Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Atlantic and Gulf Coastal Plain Region: Version 2*, and the *Florida Wetlands Delineation Manual*. Background research conducted to identify existing wetland and other surface water communities occurring within the study area included review of the USFWS *National Wetland Inventory* (NWI) online database, Land Use and Cover data from the SWFWMD, Soil Survey Geographic (SSURGO) Database for Florida, State Hydric Soils List for Florida and interpretation of aerial photography. Data verification was conducted during field reconnaissance surveys.

The approximate boundaries of all wetland and other surface water features occurring within the project study area were mapped, assigned an identification number, and categorized in accordance with the USFWS NWI geographic information system (GIS) data and the 2017 Land Use/Land Cover data obtained from the SWFWMD. Dominant vegetative strata, plant species, hydrologic indicators, and soil characteristics were assessed and documented.

Wetland and other surface water features were designated based upon their status (FLUCFCS and NWI classifications), hydrology, and soils. Vegetated wetland systems (i.e., mangrove areas) were identified as wetlands (WL) and occur at the east end of the SR 789 bridges. Estuarine areas containing seagrass and oysters were identified as seagrass (SG) and oysters (O) respectively. There is one other surface water within the project study area, the Coon Key Waterway (i.e., part of Sarasota Bay) identified as Sarasota Bay (SB-1). Maps depicting jurisdictional wetlands and other surface water features occurring within the study area are provided in **Appendix H,** and site photos are available in **Appendix I**.

4.2 Existing Surface Waters

The existing conditions of all surface waters (including wetlands) within the study area were assessed using GIS data resources and field verification. Twenty-two systems occur within the study area. These systems all occur within the Sarasota Bay watershed and are presumed to be both state and federally-jurisdictional. These systems are further described in the following text and **Table 4-1**, which includes the total acreage within the study area, the FLUCFCS Code and description, and the NWI classification of each.

Bays and Estuaries (FLUCFCS 540) (NWI E2US2)

SB-1 is Coon Key Waterway, a part of Sarasota Bay. It occurs within and adjacent to the study area and is the waterbody the project bridges cross over. SB-1 is an open water, tidal, estuarine system which is unvegetated apart from relatively shallow areas that contain seagrass. The soil series within this system include Canaveral, St. Augustine, and Waters of the Gulf of Mexico. Manatee were observed in the Coon Key Waterway during the project aquatic resource surveys.

Mangrove Swamps (FLUCFCS 612) (NWI E2F04)

WL-1, WL-2, WL-3, WL-4, WL-5, and WL-6 are intertidal mangrove areas within the project study area. All of these areas appear to be successful mangrove planting areas, as they each consist of only about 2 to 4 trees, and an area of failed mangrove plantings was observed within the study area. WL-1, WL-2, WL-3, and WL-4 which occur along Bird Key Park, contain red and black mangrove, and are likely more recent plantings as mangroves observed within WL-1 - WL-4 were less mature than mangroves identified within WL-5 and WL-6. WL-5 and WL-6 occur on the northeast end of the project bridges and contain black mangrove, buttonwood, and some Brazilian pepper (*Schinus terebinthifolia*). Given that these mangrove areas contain 4 or less trees and the presence of invasive species, the project “mangrove swamps” are not consistent with high quality mangrove swamp habitat. The soil series within these systems consist of St. Augustine and Waters of the Gulf of Mexico.

Table 4-1: Wetlands and Other Surface Waters in the Study Area

Number	FLUCFCS Classification	FLUCFCS Description	NWI Classification	NWI Description	Acres
Other Surface Waters					
O-1	654	Oyster Bars	E2RF2	Estuarine Intertidal Reef Mollusk	0.01
O-2	654	Oyster Bars	E2RF2	Estuarine Intertidal Reef Mollusk	0.01
O-3	654	Oyster Bars	E2RF2	Estuarine Intertidal Reef Mollusk	0.01
O-4	654	Oyster Bars	E2RF2	Estuarine Intertidal Reef Mollusk	0.02
O-5	654	Oyster Bars	E2RF2	Estuarine Intertidal Reef Mollusk	0.01
SB-1	540	Bays and Estuaries	E2US2	Estuarine Intertidal Unconsolidated Shore Sand	22.11
SG-1	911	Seagrass	E2AB3	Estuarine Intertidal Aquatic Bed Rooted Vascular	2.71
SG-2	911	Seagrass	E2AB3	Estuarine Intertidal Aquatic Bed Rooted Vascular	0.004
SG-3	911	Seagrass	E2AB3	Estuarine Intertidal Aquatic Bed Rooted Vascular	0.04
SG-4	911	Seagrass	E2AB3	Estuarine Intertidal Aquatic Bed Rooted Vascular	0.01
SG-5	911	Seagrass	E2AB3	Estuarine Intertidal Aquatic Bed Rooted Vascular	0.05
SG-6	911	Seagrass	E2AB3	Estuarine Intertidal Aquatic Bed Rooted Vascular	0.13
SG-7	911	Seagrass	E2AB3	Estuarine Intertidal Aquatic Bed Rooted Vascular	0.82
SG-8	911	Seagrass	E2AB3	Estuarine Intertidal Aquatic Bed Rooted Vascular	0.38
SG-9	911	Seagrass	E2AB3	Estuarine Intertidal Aquatic Bed Rooted Vascular	0.25
				Other Surface Waters Total	26.56
Wetlands					
WL-1	612	Mangrove Swamps	E2FO3	Estuarine Intertidal Forested Broad-Leaved Evergreen	0.003
WL-2	612	Mangrove Swamps	E2FO3	Estuarine Intertidal Forested Broad-Leaved Evergreen	0.003
WL-3	612	Mangrove Swamps	E2FO3	Estuarine Intertidal Forested Broad-Leaved Evergreen	0.0001
WL-4	612	Mangrove Swamps	E2FO3	Estuarine Intertidal Forested Broad-Leaved Evergreen	0.01
WL-5	612	Mangrove Swamps	E2FO3	Estuarine Intertidal Forested Broad-Leaved Evergreen	0.03
WL-6	612	Mangrove Swamps	E2FO3	Estuarine Intertidal Forested Broad-Leaved Evergreen	0.02
				Wetlands Total	0.07
				Wetlands and Other Surface Waters Total	26.63

Oyster Bars (FLUCFCS 654) (NWI E2RF2)

O-1, O-2, O-3, O-4, and O-5 are intertidal areas of riprap densely colonized by eastern oysters. Each of these areas are generally exposed at low tide and submerged at high tide. The riprap in these areas was likely installed to prevent erosion of the SR 789 embankments. These areas occur over the St. Augustine soil series.

Seagrass (FLUCFCS 911) (NWI E2AB3)

SG-1, SG-2, SG-3, SG-4, SG-5, SG-6, SG-7, SG-8, and SG-9 are the areas of Sarasota Bay within the project study area that contain seagrass. These areas contain turtle grass and manatee grass. A seagrass survey was conducted on July 17, 2020. The survey was limited to portions of the project study area where project impacts were possible. SG-3, SG-4, SG-5, SG-6, SG-7, SG-8, and SG-9 were delineated during the seagrass survey. SG-1 and SG-2 occur outside of the seagrass survey area and were therefore approximated using recent aerial imagery. Of the areas surveyed, SG-4 and SG-5 were observed to be discontinuous, and SG-7 contained shallow continuous areas and deeper discontinuous areas. SG-3, SG-6, SG-8, and SG-9 were observed to be continuous. Based on aerial photo-interpretation, SG-1 and SG-2 appear to be discontinuous (potentially from bed scarring due to boats approaching the park shore). The delineated seagrass polygons are included in **Appendix H**. The soil series within these systems consist of Canaveral, St. Augustine, and Waters of the Gulf of Mexico.

4.3 Impact Avoidance and Minimization

Pursuant to EO 11990, *Protection of Wetlands*, federal actions should avoid, to the extent possible, the long- and short-term adverse impacts associated with the destruction or modification of wetlands and avoid direct or indirect support of construction in wetlands wherever there is a practicable alternative. Unavoidable wetland impacts resulting from construction of the project will occur with the Preferred Alternative. The project purpose and need, as well as associated transportation safety standards and stormwater management facility design necessitate these impacts. Impacts to wetlands and other surface waters are unavoidable for the Preferred Alternative due to the presence of these resources within the existing ROW. Wetland and other surface water impacts were reduced primarily by utilizing the existing roadway and bridge approaches in the Preferred Alternative rather than increasing or relocating the approaches which would result in additional fill. The Preferred Alternative would also increase the existing bridge height by approximately 16 ft at the center, which

is expected to reduce current shading impacts near the edges of the structure and promote future recruitment of mangroves and seagrasses. The Preferred Alternative is also located within the footprint/ROW of the current twin bridges, which reduces potential impacts to existing seagrass and mangroves, located adjacent to the existing twin bridges.

Additional wetland impact avoidance and minimization measures will be evaluated and documented during the project design phase. These measures may include but are not limited to, consideration of the use of structural elements such as retaining walls, consideration of the placement of bridge abutments and stormwater treatment systems, and the use of appropriate best management practices during construction.

4.4 Wetland Impact Analysis

The Preferred Alternative will impact 0.03 acre of mangroves wetlands, 0.01 acre of oyster bars, and 0.05 acre of submerged aquatic vegetation (seagrass). Impacts to wetlands within the study area will result mostly from placement of fill material and damage during construction; however, construction of the new bridge will also result in shading impacts to the underlying habitats. While the new bridge structure will be higher than the existing bridge (reducing shading impacts along the edges of the structure), the new single span will create new shading impacts in the center region of the bridge in areas that are currently open. As such, SG-5 and WL-5 will be permanently impacted by shade due to their position within this open center region of the current bridge. There are no anticipated secondary impacts to aquatic resources directly impacted by the project, as all direct impacts will be to the entirety of the impacted aquatic resources. However, it is assumed that mapped seagrasses within 100 ft of the existing bridge will be subject to temporary construction impacts, likely from the movement of waterborne construction vessels and platforms (such as barges) and potential shading from these vessels. These temporary impacts are estimated at 0.12 acre, which includes consideration for shading effects from the temporary work trestles. However, these impacts are also anticipated to be temporary as they will not result from the permanent installation of any structures and seagrass lost by these impacts is anticipated to recover. Additionally, the FDOT will delineate the extent of project seagrasses which are not anticipated to be impacted with buoy markers in an effort to prevent unforeseen impacts to these areas from either project boat traffic or public boat traffic seeking to go around construction. Aerial maps depicting wetland impact locations resulting from the Preferred Alternative are provided in **Appendix H**. The project will also directly impact 0.01 acre of Coon Key Waterway through construction of the proposed bridge piles. Additional temporary fill will

occur from use of the temporary work trestles for the project construction which will result in 0.02 acre of temporary fill associated with the work trestle piles. These temporary work trestle piles will be located within the Coon Key Waterway to aid in the construction of the proposed bridges and will be removed upon completion of construction.

Impacts to project wetlands and other surface waters were assessed using the Uniform Mitigation Assessment Method (UMAM). The UMAM (Chapter 62-345 F.A.C.) was developed to assess the ecological functions provided by wetlands and the amount of mitigation necessary to offset the loss of functions by a proposed project. The UMAM analysis is based on evaluation of three criteria: location and landscape support, water environment, and community structure. These criteria are scored using whole increment values between "10" (indicating the highest quality system) and "0" (indicating no present value). The three criteria are summed and divided by 30 to yield a score for the assessment area between "0" and "1". The difference between the "with project" and "current" condition is calculated to result in the "delta". The UMAM delta is multiplied by the area of wetland impact to quantify the loss of wetland functions (functional loss).

For direct impacts, forms are provided for SG-5 and WL-5 and for temporary impacts all affected seagrass areas (SG-4, SG-6, and SG-7) were grouped together in one UMAM form for functional assessment purposes. UMAM data sheets were compiled for each wetland type and are provided in **Appendix J**. The functional loss for the wetlands and other surface waters within the project footprint was calculated, and a summary table of the functional loss by habitat, FLUCFCS, and impact type is included in **Table 4-2**.

Table 4-2: Preferred Alternative Wetland Impacts and UMAM Analysis Summary

Impacted Wetlands	FLUCFCS Classification	Impacted Area (Acres)	Delta	Functional Loss
WL-5	612[1]	0.03	-0.60	0.02
SG-5	911[2]	0.05	-0.867	0.05
Temporary Seagrass Impacts	911[2]	0.12	-0.097	0.012
Total		0.08	N/A	0.082

1. 612: Mangrove Swamps
2. 911: Seagrass

4.5 Conceptual Mitigation Plan

Wetland impacts resulting from the construction of this project will be mitigated pursuant to Section 373.4137, F.S., to satisfy all mitigation requirements of Part IV of Chapter 373, F.S. and 33 USC.

§1344. In 2008, the USACE and the US Environmental Protection Agency (USEPA) issued regulations governing compensatory mitigation for activities authorized by the Department of the Army. These regulations, as promulgated in 33 CFR Part 332, establish a hierarchy for determining the type and location of compensatory mitigation. Briefly summarized, the rule establishes a preference for the use of mitigation bank credits if a mitigation bank has the appropriate number of and resource type of credits available. If the permitted impacts are not in the service area of an approved mitigation bank or in-lieu fee program cannot be used to provide the required compensatory mitigation, the rule establishes a preference for permittee responsible mitigation under a watershed approach.

Currently, the project is not within the service area of any permitted commercial mitigation banks. The project is within the proposed service areas of the Long Bar Pointe Mitigation Bank and North Shore Park Seagrass Mitigation Bank, both of which are currently being permitted. Credit availability from all mitigation banks which service the project area will be reassessed during the design phase of the project. If commercial mitigation credits are not available at that time, the FDOT will utilize permittee-responsible mitigation such as relocation/replanting of mangroves at the north side of Bird Key Park, using seagrass credits from the I-275 Sunshine Skyway Wave Attenuation Devices (WADS) project, and potentially relocating oyster beds outside of the construction footprint. The exact number of mitigation credits required to fully offset the lost value of functions resulting from the project's wetland impacts will be determined during the design (environmental permitting) phase and in coordination with the state and federal environmental permitting agencies. Currently, the FDOT intends to utilize a mitigation ratio of 1.5 for these mitigation credits, as the WADs project occurs outside of the project's basin. This ratio would result in a use of 0.08 seagrass credits from the WADs project. If the mitigation is to occur outside of Sarasota Bay (Hydrologic Unit Code #03100201), then an estuarine cumulative impact analysis will be completed as required by state and federal regulations.

A pre-application meeting was held with SWFWMD on November 3, 2022, at which time mitigation options and requirements were discussed. The meeting minutes from this pre-application meeting are included in **Appendix C**.

4.6 Significant Waters and Protection Areas

Significant Waters and Protection Areas include Aquatic Preserves, OFW, Wild and Scenic Rivers, and Class I and Class II waters. The Sarasota Bay estuarine system, including all waters around Coon Key and Bird Key are defined as Special Outstanding Florida Waters under subsection 62-

302.700 (29) F.A.C. Special OFWs are water bodies demonstrated to be of exceptional recreational or ecological significance. Degradation of water quality is typically not allowed for OFWs/Special OFWs. Enhanced water quality treatment requirements will be confirmed, as applicable, during the project's Design phase and environmental permitting efforts. Enhancements to water quality from proposed stormwater treatment facilities may result in a net improvement of the water quality within these OFWs.

5 ESSENTIAL FISH HABITAT ASSESSMENT

Essential Fish Habitat (EFH) and Habitat Areas of Particular Concern (HAPC) are designated by the National Oceanic and Atmospheric Administration (NOAA) NMFS and the regional fishery management councils for species managed under the Magnuson-Stevens Fishery Conservation and Management Act as amended (MSFCMA). The MSFCMA established eight Fishery Management Councils (FMC) across the country that are tasked with creating and amending Fishery Management Plans (FMP). Certain estuarine habitats within the project area are designated as EFH as identified in the 2005 generic amendment of the Fishery Management Plans for the Gulf of Mexico. The generic amendment was prepared by the Gulf of Mexico Fishery Management Council as required by the 1998 amendment to the MSFCMA. This effort is also consistent with the *Essential Fish Habitat* chapter of the PD&E Manual.

Within the study area, EFH occurs within the Coon Key Waterway (i.e., part of Sarasota Bay). In their comments within the *ETDM Final Programming Screen Summary Report*, NMFS staff specifically identified EFH for juvenile and subadult penaeid shrimp; post-larval juvenile, subadult and adult red drum; juvenile and adult schoolmaster and mutton snapper; and juvenile gag, goliath, red, black and yellowfin grouper as well as lane, dog, yellowtail and cubera snapper. NMFS staff noted that seagrasses, estuarine water column, and mud, sand, shell, and rock substrates are specific categories of EFH that may be directly impacted by the project. In further identifying the applicability of EFH, the Southeast Region Habitat Conservation Division, Gulf of Mexico Fishery Management Council (GMFMC) GIS data inventories for the Gulf of Mexico EFH and HAPC, the NMFS' EFH Mapper and EFH data layers in the FDOT's EDTM EST were reviewed and evaluated to determine the potential presence of EFH for additional species within the project study area.

5.1 EFH Types and Anticipated Impacts

A preliminary reconnaissance confirmed the presence of mangroves, seagrasses, oyster beds, estuarine water column, sand-shell substrates and hard bottom within the project study area. Field scientists completed aquatic resource surveys on July 14, July 17 and August 27, 2020 to identify and locate EFH types present within the project study area. The survey area comprised the project study area limits. Given that these surveys occurred more than one year prior to permit application, NMFS was contacted to confirm that the PD&E study could be completed with the 2020 survey data provided the survey data is updated during the design/permitting phase. NMFS provided concurrence

that this would be acceptable on August 15, 2022. This correspondence is attached in **Appendix C**. The following sections discuss the documented EFH within the project study area as well as the anticipated impacts to each EFH type. Aerial maps depicting the locations of anticipated impacts to EFH are provided in **Appendix K**.

Estuarine Shrub/Scrub (mangroves)

Mangroves are important as foraging, refuge and nursery habitat for numerous species. Within the project study area, there are two intermingled black mangrove and green buttonwood areas (totaling 0.05 acres) at the east end of the bridge (in the median and south of the eastbound bridge). Four additional individual red mangrove and black mangrove trees (totaling 0.02 acres) occur along the north side of Bird Key Park. The Preferred Alternative will result in 0.03 acre of unavoidable impacts to mangroves at the east end of the bridge, and there will be no impacts to the mangroves along the north side of Bird Key Park. Currently, there is no commercially available mangrove mitigation within the same watershed as the project. The FDOT will re-evaluate potential mangrove mitigation options during the project's design phase and coordinate with permitting agencies to reach an acceptable solution. Potential solutions may include: commercial mitigation banks offering credits at that time, permittee-responsible mitigation, relocation/replanting of mangroves at the north side of Bird Key Park, and mitigation from a neighboring basin. Considering the limited impacts and that mangrove mitigation will be provided, is the FDOT has determined that the project will have "**minimal**" potential adverse effects on mangrove EFH.

Submerged Aquatic Vegetation (SAV) / seagrass

SAV/seagrass provides sediment filtration and are similarly important for providing foraging, refuge and nursery habitat for numerous species. Within the project study, SAV/seagrass occurs in the shallow water portions of the Coon Key Waterway at the west and east ends of the bridge, with a separate patch of SAV/seagrass located approximately 130 ft south of the east end of the existing southern bridge (off the eastern shore) and extending southward offsite. Water depths in these areas typically range from 2 to nearly 8 ft. SAV/seagrass was mapped as two types: continuous and patchy/discontinuous. The species of seagrass observed included manatee grass, and less commonly, turtle grass. Epiphytic algae were observed growing on portions of these grass patches. The total acreage of seagrass mapped within the project study area was approximately 2.49 acres. Due to construction of the new bridge over the Coon Key Waterway, there will be unavoidable impacts to SAV/seagrass. The Preferred Alternative will result in 0.05 acre of direct impacts to SAV/seagrass at the east end of the bridge (polygon SG-5). Direct impacts will primarily result from permanent

shading with minor dredging and filling impacts. Direct impacts to the contiguous patch of SAV/seagrass beginning south of the bridge near the eastern shore (polygon SG-7) are not anticipated. It is also assumed that mapped seagrasses within 100 ft of the existing bridge will be subject to temporary construction impacts, likely from the movement of waterborne construction vessels and platforms (such as barges) and potential shading from these vessels. These temporary impacts are estimated at 0.12 acre. However, these impacts are anticipated to be temporary as they will not result from the permanent installation of any structures, and seagrass lost by these impacts is anticipated to recover. Additionally, the FDOT will delineate the extent of project seagrasses which are not anticipated to be impacted with buoy markers in an effort to prevent unforeseen impacts to these areas from either project boat traffic or public boat traffic seeking to go around construction. Currently, commercial seagrass mitigation credits are not available within the same watershed as the project. However, FDOT intends to mitigate these impacts using its WADs seagrass mitigation project. It should also be noted that, given the selected bridge alternative, the vertical clearance of the bridge over Bird Key Waterway is anticipated to increase by approximately 16 ft at the center. This additional clearance is anticipated to have fewer shading impacts on seagrass recruitment than if the bridge were to be constructed at an elevation closer to that of the existing bridges. However, the proposed bridge will still result in shading impacts to the existing seagrass bed SG-5. Considering the limited impacts, proposed mitigation, and increased verticality of the proposed bridge, the FDOT has determined that the project will have "**minimal**" potential adverse effects on SAV/seagrass EFH. SAV/seagrass impacts will be finalized after the updated design phase survey.

Oyster Beds

Oysters live in salty or brackish waters on all U.S. coasts, clustering on older shells, rock, piers, or any hard submerged surface. They fuse together as they grow, forming rock-like reefs that are important for water filtration and provide foraging and refuge for various species. Within the project study area, this habitat consists of a patchy distribution of eastern oysters. Within the project study area, a total of approximately 0.06 acres of oyster bed habitat was mapped. Of this total, only one 0.007-acre polygon occurs within the design footprint. This polygon occurs adjacent to the seawall along the eastern shore of the Coon Key Waterway in the median between the bridges and under the existing westbound bridge. The remaining 0.053 acres of oyster beds were mapped along the north side of Bird Key Park and will not be impacted by the proposed improvements. Due to construction of the new bridge over the Coon Key Waterway, there will be unavoidable impacts to oyster beds along the eastern side of the bridge. The Preferred Alternative will result in 0.01 acre (rounded up from 0.007) of fill/removal impacts to this oyster bed. Given the low amount of impacts, FDOT commits

to further coordination with City of Sarasota, FDEP and NMFS representatives to discuss the relocation of oyster beds which would be directly impacted as a result of construction to the nearby Bird Key Park beach where other oyster beds currently exist as a mitigative measure. Considering the limited impacts and potential relocation mitigative strategy for oyster beds which would otherwise be impacted, the FDOT has determined that the project will have “minimal” potential adverse effects on oyster bed EFH.

Estuarine Water Column

The estuarine water column extends from the Coon Key Waterway channel bottom substrate to the surface of the water, ranging from 0 to approximately 16 ft in depth in the vicinity of the SR 789 bridges. It provides habitat for spawning, breeding, foraging, and supports life stages for a for a variety of important commercial and recreational fisheries and their prey species. In a water column, species may segregate by salinity, water temperature, and/or dissolved oxygen. These waters flow north under the SR 789 bridges during the incoming tide and flow south towards the entrance to Big Sarasota Pass and the Gulf of Mexico at the outgoing tide.

Due to construction of the new bridge over the Coon Key Waterway, there will be unavoidable impacts to the estuarine water column. Impacts to the estuarine water column by the bridge will result from the volumetric displacement of water from bridge piles, shading, increased turbidity and underwater noise during construction. Although the proposed bridge design will require 60 circular piles with a 3.5-ft diameter (577.26 total square ft), volumetric displacement impacts could only be estimated due to a lack of detailed channel bottom bathymetry data and the continuously shifting nature of channel bottom substrates. Assuming a 10-ft average depth across the proposed bridge’s length yields an estimated 5,772.6 cubic ft (213.8 cubic yards) of estuarine water column displacement from the new bridge’s piles. It is also worth noting that the existing bridges contain 184 1.5-ft by 1.4-ft piles totaling 414 square ft which cause 4,140 cubic ft (154.44 cubic yards) of estuarine water column displacement given the assumption of an average 10-ft depth. Considering that the existing bridge will be demolished and removed, the new bridge will result in a 163.26 square ft and 1,632.6-cubic ft (60.47 cubic yards) net loss of estuarine water column.

Shading impacts are expected to be minimal due to the tidal nature of the crossing and intermittent low visibility within the water column. Increased turbidity could result in the burial of benthic species, and physical impairment to estuarine species, such as the clogging of gills from suspended particulates resulting in suffocation or abrasion of sensitive epithelial tissue. However, the juvenile

and adult life stages of the managed species are considered to be mobile and highly capable of eluding adverse conditions. Turbidity will be addressed through established permit conditions, implementation of FDOT's *Standard Specifications for Road and Bridge Construction* and industry-standard Best Management Practices to minimize impacts from construction. Underwater noise from bridge pile installation will be mitigated through installation of bubble curtains or similar abatement measures. A Bridge Salvage Plan and debris containment system will be implemented during construction to minimize the potential for debris from bridge removal activities to fall into and be carried away by the water column.

The current bridge has scuppers which discharge untreated roadway runoff directly into the Coon Key Waterway. The proposed bridge will not directly discharge into the Coon Key Waterway as the design does not include scuppers. Additionally, stormwater management facilities associated with the proposed project are anticipated to provide water quality treatment beyond that currently provided, thereby providing a water quality enhancement within this portion of the Coon Key Waterway and to Sarasota Bay. The proposed project will direct bridge runoff into roadside swales for treatment before discharging into the waterway. Considering that impacts to the estuarine water column are anticipated to be insignificant and/or temporary, the FDOT has determined that the project will have "**minimal**" potential adverse effects on estuarine water column EFH.

Sand-Shell Substrates

Substrates located under the Coon Key Waterway water column provide burrowing, resting and foraging habitat for numerous species. The NRCS does not map the soils within the Coon Key Waterway channel (i.e., listed generically as "waters of the Gulf of Mexico"). However adjacent upland soils are mapped as St. Augustine fine sand-Urban land complex (0-2% slopes) and Canaveral fine sand-Urban land complex (0-5% slopes). The soil substrates within the waterway are predominantly fine sand and shell particles. Due to construction of the new bridge over the waterway, there will be unavoidable impacts to sand-shell substrates. Although the proposed bridge design will require 60 circular piles with a 3.5-ft diameter (577.26 total square ft), volumetric displacement impacts were not quantified due to a lack of mapping of sediment depth along the channel bottom and the continuously shifting nature of channel bottom substrates. Bridge shading impacts are anticipated to be insignificant for the substrate of this crossing due to the intermittent low visibility of the system at the crossing. This EFH type is neither unique to, nor limited within the general project vicinity. Considering that impacts to the substrates within Coon Key Waterway will be limited to piles and

shading, the FDOT has determined that the project will have "**minimal**" potential adverse effects on sand-shell substrate EFH.

Live/Hard Bottom (bridge piles, rubble rip-rap)

Hard bottom EFH are typically "those areas that contain biological assemblages consisting of such sessile invertebrates as sea fans, sea whips, hydroids, anemones, ascidians, sponges, bryozoans, seagrasses, or corals living upon and attached to naturally occurring hard or rocky formations with rough, broken, or smooth topography favoring the accumulation of turtles and fishes". Hard bottom EFH within the study area is artificially-created and limited to the existing and prior remnant bridge piles, as well as rubble rip-rap armoring under the existing bridges near the eastern shore. This habitat is composed of a variety of epifauna including scleractinian corals, soft corals, fleshy macroalgae, colonial tunicates, and sponges. No listed coral species were observed within the project study area, and listed coral species are most commonly found in the Florida Keys and Atlantic Coast in Florida. The existing habitat associated with the bridge is estimated at 0.0095 acre. Given that within the study area, corals, sponges, and other epifauna are found intermittently on the existing bridge's piles, an exact volumetric calculation of live bottom habitat is not possible due to a lack of detailed channel bottom bathymetry data. An estimate can be calculated using the assumption of a 10-ft average water depth. With an assumed average 10-ft depth, the existing bridge piles provide 0.25 acre (surface area of piles) of substrate for living bottom.

Given the area of new bridge piles is larger than the existing bridge piles, it is anticipated that there will be a net gain in hard bottom EFH. The area anticipated to be associated with the new bridge's piles is 0.013 acre resulting in a net gain of 0.0035 acre. However, given that the proposed bridge's piles are circular, they will provide less surface area as substrate for living bottom. The new bridge piles will have a combined surface area of 0.15 acre, resulting in a net loss of 0.10 acre of substrate for living bottom. Given this potential loss of substrate for living bottom, the FDOT will coordinate with NMFS for potential solutions to mitigate for this loss. Potential solutions may include installation of riprap around bridge piles or reusing debris from the existing bridge as a substrate for epifauna. Considering these limited impacts and that a hard bottom net gain is anticipated from the Preferred Alternative, the FDOT has determined that the project will have "**minimal**" potential adverse effects on hard bottom EFH.

5.2 Habitat Areas of Particular Concern

The project study area is not located within or adjacent to any designated HAPC, according to the 1998 FMP.

5.3 Federally Managed Species

The study area includes EFH that may support federally managed species based on available data. Based on review of the NMFS EFH Mapper, the estuarine shrub/scrub, SAV, live bottom, substrates, and estuarine water column EFH within the project study area which will be impacted by construction of the new bridge may provide suitable habitat for the species presented below. Of the managed fisheries species identified, various species use nearshore habitats at only certain life stages (typically at either early development or adult stages). It should be noted that no individuals of any of the identified species were observed or documented within the project study area.

- Panaeid shrimp (4 species)
- Red drum
- Reef fish
    - Grouper (18 species)
    - Jacks (4 species)
    - Snappers (14 species)
    - Tilefish (5 species)
    - Gray triggerfish
    - Hogfish
- Coastal Migratory Pelagic Species
    - King mackerel
    - Spanish mackerel
    - Cobia
- Highly migratory species (sharks)
    - Bull shark
    - Bonnethead shark
    - Atlantic sharpnose shark
    - Tiger shark
    - Blacknose shark
    - Blacktip shark

- Nurse shark
- Lemon shark

Coral (Class Anthozoa)

Although NMFS staff did not identify the presence of EFH for coral during their ETDM review, a discussion is included for corals based on the results of the aquatic surveys. Class Anthozoa (under the phylum Cnidaria) includes corals, anemones, sea pens and seafans. Anthozoa consists of 10 orders and thousands of species. Adults are generally sessile, attached to the seabed, but their larvae are free-floating and can drift to new settlements. Anthozoans can secrete a nonliving substance around the outside of the body to support and protect their soft body tissues which accumulates into reefs over time as individuals die and are replaced. The coral FMP includes over 400 species of coral. The size and diversity of this unit is especially complex, including species ranging from shallow water and muddy sediment species to deepwater species. Within the project study area, coral contributes to the hard bottom community where it contributes habitat and food to many other species with established recreational or commercial value. The project aquatic surveys included general coral surveys. No listed corals were observed during these surveys.

5.4 Summary of EFH Impacts and Conceptual Mitigation Plan

Project-related activities may have direct (e.g., physical disruption) or indirect (e.g., loss of prey species) effects on EFH and may be site-specific or habitat-wide. **Table 5-1** summarizes the anticipated impacts to EFH for the proposed improvements.

The FDOT's intent is to complete EFH mitigation in conjunction with the project's compensatory wetland and seagrass mitigation. Currently, the project is within the service area of the Long Bar Pointe Mitigation Bank and North Shore Park Seagrass Mitigation Bank, both of which are currently being permitted. Credit availability from all mitigation banks which service the project area will be reassessed during the design phase of the project. If commercial mitigation credits are not available at that time, the FDOT will utilize permittee-responsible mitigation, such as relocation/replanting of mangroves at the north side of Bird Key Park, using seagrass credits from the Skyway WADS project (and applying a 1.5 mitigation ratio) and relocating oyster beds outside of the construction footprint. The exact number of mitigation credits required to fully offset the lost value of functions resulting from the project's EFH impacts will be determined during the design phase and in coordination with the

NMFS. Additionally, the FDOT will complete a NMFS pile-driving noise assessment during the project design/permitting phase.

Table 5-1: Summary of EFH Impacts within the Project Area

EFH Type	FLUCFCS Code/Habitat Type	EFH Acreage Present in Project Study Area	Direct Impacts	Direct Impact Type	Temporary Impact type	Temporary Impacts
Estuarine Shrub/ Scrub	612 / Mangroves	0.07	0.03 acre	Removal/Fill	N/A	N/A (complete take)
Submerged Aquatic Vegetation (seagrass)	911 / Seagrass	4.39	0.05 acre	Dredge/Fill, Shading	Turbidity	0.12 acre[1]
Oyster Beds	654 / Oyster Bars	0.06	0.01 acre	Removal/Fill	N/A	N/A (complete take)
Estuarine Water Column	540 / Bays and Estuaries	26.48	1,632.6-cubic ft (60.47 cubic yards) net loss[2]	Fill (bridge piles)	Turbidity, Vibration/Noise, Shading (2.46-acre estimate), Temporary Fill	0.02 acre (fill associated with piles needed for the temporary work trestles)
Sand-Shell Substrate	540 / Bays and Estuaries	20.00	0.01 acre	Dredge/Fill	Vibration, Temporary Fill	0.02 acre (fill associated with piles needed for the temporary work trestles)
Hard Bottom (bridge piles, rip-rap)	540 / Bays and Estuaries 814 / Transportation	0.09	0.0035-acre net gain[3]	Removal & New Bridge construction	Vibration/Noise	N/A
Live Bottom (coral)	N/A	0.25[4]	0.25 acres[4]	Demolition of old bridge	N/A	N/A
Total	**N/A**	**51.09**	**0.35 acre and 1,632.6 cubic ft (60.47 cubic yards)**	**N/A**	**2.46 acres (shading)**	**0.12 acre**

(1) Assumes impacts to seagrass within 100 ft of the existing bridges from potential staging/barge work

(2) 5,772.6 cubic ft of water column loss from new bridge piles and water column gain from removal of 4,140 cubic ft from old bridge piles

(3) 0.013-acre creation from new bridge and 0.0095-acre loss from demolition of old bridge

(4) This is an overestimate given discontinuousness of coral communities on existing bridge piles. This value is the surface area of existing bridge piles which provide a substrate for corals assuming a 10-ft average depth. The new bridge piles will have a surface area of 0.15 acre given the same assumptions, resulting in a potential loss as low as 0.10 acre pending future coral recruitment.

6 ANTICIPATED PERMITS, COORDINATION, AND AUTHORIZATIONS

Environmental permits, coordination, and authorizations from the following agencies will likely be required for construction of this project:

Anticipated Permits

- USACE – Nationwide Section 404 Permit and Section 10 of the Rivers and Harbors Act Permit
- SWFWMD – Individual Environmental Resource Permit (ERP)
- FDEP – National Pollutant Discharge Elimination System (NPDES) Permit (to be obtained by contractor)
- USCG – Bridge Permit

The Florida Department of Environmental Protection has issued two sovereign submerged lands (SSL) easements within the project study area limits. The existing SR 789 bridge east of project limits is associated with Public Easement # 21193 with the FDOT as the easement holder and Easement # 41315 with the City of Sarasota as the easement holder for a water main easement associated with the existing project bridges. The proposed reconstruction of the existing SR 789 bridges may require a modification to one or both of these existing easements or potentially a new easement issued. The FDOT will coordinate further with FDEP as part of the environmental resource permitting process during the project's Design phase to appropriately address the project's SSL easement requirements.

Anticipated Coordination

- USFWS – ESA Section 7 consultation for federally-listed plant and animal species (including the Gulf sturgeon), coordination for bald eagle and other migratory bird species.
- NMFS – ESA Section 7 consultation for federally-listed smalltooth sawfish, and swimming sea turtles, EFH impacts/mitigation
- FWC – Coordination for state-listed animal species and non-listed bat species.
- FDACS – Coordination for state-listed plant species.

7 CONCLUSION

7.1 Protected Species and Habitat

The study area was evaluated for the presence of federal and/or state protected species and their suitable habitat in accordance with Section 7 of the ESA and the Protected Species and Habitat Chapter of the PD&E Manual. Based on this evaluation the proposed project **"*may affect, not likely to adversely affect*"** the Gulf sturgeon, smalltooth sawfish, giant manta, green sea turtle, hawksbill sea turtle, Kemp's Ridley sea turtle, leatherback sea turtle, loggerhead sea turtle, piping plover, red knot, wood stork, Florida bonneted bat, and West Indian manatee. The project is anticipated to have **"*no effect*"** on the aboriginal prickly-apple, Florida bonamia, Florida golden aster, pygmy fringe tree, eastern indigo snake, eastern black rail, and Florida scrub jay. Regarding state-listed species, there is **"*no adverse effect anticipated*"** for the American oystercatcher, black skimmer, Florida sandhill crane, least tern, little blue heron, reddish egret, roseate spoonbill, tricolored heron, and snowy plover. There is "***no effect anticipated***" for the Sanibel Island lovegrass, gopher tortoise, and Florida burrowing owl.

Multiple protection measures are to be employed to negate and minimize any potential effects to these species. Some of the measures employed are anticipated to include more detailed field surveys and agency coordination during the project's design phase, the use of Best Management Practices (BMPs) and species-specific standard protection measures (e.g., Florida bonneted bat, gulf sturgeon, and manatee) during construction. During the design and permitting phases the FDOT will reassess the project for potential involvement with federal and state-protected species and coordinate further with the USFWS, NMFS, FWC and FDACS as necessary.

7.2 Wetlands Finding

In accordance with Executive Order 11990 and US DOT 5660.1A, and based on the documentation of existing wetland conditions as presented in the NRE, and in consideration of the Preferred Alternative and its effects on wetlands, it is hereby determined that:

- Measures have been taken to minimize harm to wetlands. The Preferred Alternative will only impact the wetlands at the eastern bridge approach.

- The Preferred Alternative will have no significant short-term or long-term adverse impacts to wetlands. The Preferred Alternative will have minimal impacts to wetlands in the project study area and these impacts will be compensated by mitigation bank credits from established banks with the appropriate geographical service area or with permittee-responsible mitigation.
- There is no practicable alternative to construction in wetlands.

Wetland impacts which will result from the construction of this project will be mitigated pursuant to Section 373.4137, F.S., to satisfy all mitigation requirements of Part IV of Chapter 373, F.S. and 33 USC. §1344.

7.3 Essential Fish Habitat

The Preferred Alternative is located within an area designated as EFH for three FMPs: Gulf of Mexico, Coastal Migratory Pelagic, and Highly Migratory Species management plans. NOAA Fisheries has identified and described EFH for 59 managed species within the project study area. These include 4 managed shrimp species, the red drum, 43 managed reef species, 3 managed coastal migratory pelagic species, and 8 managed highly migratory species. The Preferred Alternative will impact 2.81 acres of the 51.09 acres of EFH occurring within the project study area. The Preferred Alternative will also utilize mitigative measures which include seagrass mitigation credits and potential relocation of oyster beds. Considering these factors, the FDOT has determined that the project will have "**minimal**" potential adverse effects on EFH.

7.4 Commitments and Implementation Measures

The FDOT will coordinate the results of this NRE with the USFWS, NMFS, and FWC to receive concurrence from these agencies. Results of the NRE will also be coordinated with the USACE and FDEP.

Commitments

- The FDOT will implement the NMFS' SERO's *Vessel Strike Avoidance Measures* and *Protected Species Construction Conditions* during in-water construction activities.
- In accordance with the use of the USFWS' Consultation Key for the Florida Bonneted Bat and Florida Bonneted Bat Consultation Guidelines and the finding of a MANLAA-P effect determination for the Florida bonneted bat, the FDOT will implement bonneted bat BMP

#1: If potential roost trees or structures need to be removed, check cavities for bats within 30 days prior to removal of trees, snags, or structures. When possible, remove structure outside of breeding season (e.g., January 1 – April 15). If evidence of use by any bat species is observed, discontinue removal efforts in that area and coordinate with the Service on how to proceed. If the listing status of the tricolored bat is elevated by USFWS to Threatened or Endangered and the Preferred Alternative is located within the consultation area, FDOT commits to re-initiating consultation with the USFWS during the design and permitting phase of the project to determine the appropriate survey methodology and to address USFWS regulations regarding the protection of the tricolored bat.

- In accordance with the use of the USFWS' Consultation Key for the Florida Bonneted Bat and Florida Bonneted Bat Consultation Guidelines and the finding of a MANLAA-P effect determination for the Florida bonneted bat, the FDOT will implement bonneted bat BMP #4: For every 5 acres of impact, retain a minimum of 0.25 acre of native vegetation. If upland habitat is impacted, then upland habitat with native vegetation should be retained.
- In accordance with the use of the USFWS' Consultation Key for the Florida Bonneted Bat and Florida Bonneted Bat Consultation Guidelines and the finding of a MANLAA-P effect determination for the Florida bonneted bat, the FDOT will implement bonneted bat BMP #9: Retain mature trees and snags that could provide roosting habitat. These may include live trees of various sizes and dead or dying trees with cavities, hollows, crevices, and loose bark. See "Roosting Habitat" in "Background" above.
- In accordance with the use of the USFWS' Consultation Key for the Florida Bonneted Bat and Florida Bonneted Bat Consultation Guidelines and the finding of a MANLAA-P effect determination for the Florida bonneted bat, the FDOT will implement bonneted bat BMP #12: Incorporate engineering designs that discourage bats from using buildings or structures. If Florida bonneted bats take residence within a structure, contact the Service and Florida Fish and Wildlife Conservation Commission prior to attempting removal or when conducting maintenance activities on the structure.
- If the listing status of the monarch butterfly is elevated by USFWS to Threatened or Endangered and the Preferred Alternative is located within the consultation area, FDOT commits to re-initiating consultation with the USFWS during the design and permitting phase of the project to determine the appropriate survey methodology and to address USFWS regulations regarding the protection of the monarch butterfly.
- The FDOT will implement the USFWS' *Standard Manatee Conditions for In-Water Work*.
- The FDOT will utilize at least one dedicated manatee observer on-site for all in-water construction.
- The FDOT will only conduct in-water work during daytime hours.

- The FDOT will require contractors to use a ramp-up procedure during pile driving. This gradual increase in noise level gives species time to leave the impact area prior to initiation of full noise levels.
- Mooring of work barges or vessels shall maintain at least 1.5-ft clearance above the water body bottom to allow sturgeon passage and to minimize potential disturbance to bottom sediments and submerged aquatic vegetation.
- The FDOT will delineate project seagrass beds which are not anticipated to be impacted with floating buoys to reduce the potential for unforeseen impacts to these beds.
- If blasting is required for demolition of existing structures, a blast plan and marine species watch plan shall be developed and submitted to FWS, NMFS, and FWC for approval prior to the commencement of this activity.
- The FDOT will perform an updated seagrass survey during the project's permitting phase and provide the results to NMFS.

Implementation Measures

- The FDOT will complete a NMFS pile-driving noise assessment during the design/permitting phase.
- Should out-of-basin mitigation be determined necessary, the FDOT will perform a coastal cumulative impacts analysis.
- The FDOT will coordinate with City of Sarasota, FDEP and NMFS representatives to discuss the relocation of oyster beds which would be directly impacted as a result of construction to the nearby Bird Key Park beach where other oyster beds currently exist as a mitigative measure.
- The FDOT will coordinate further with FDEP as part of the ERP process during the project's Design phase to appropriately address the project's SSL easement requirements.

8 REFERENCES

Audubon. 2022. EagleWatch Novel Nest Locator Map. https://cbop.audubon.org/conservation/about-eaglewatch-program?_gl=1*to1cb3*_ga*MTUyMTE2MDkwMy4xNjY4NDUxNzI1*_ga_X2XNL2MWTT*MTY3Mzk4ODgwMy4yLjEuMTY3Mzk4ODgwOC41NS4wLjA. Accessed December 2022.

Best, T. L., W. M. Kiser, and J. C. Riney. 1997. Eumops glaucinus. American Society of Mammalogists 551:1-6.

Center for Biological Diversity. 2020. Natural history for the aboriginal prickly-apple cactus Harrisia aborigium. https://www.biologicaldiversity.org/species/plants/Florida_plants/natural_history_aboriginal_prickly_apple.html. Center for Biological Diversity, St. Petersburg, Florida. Accessed July 2020.

Cowardin, L. M., V. Carter, F. C. Golet, and E. T. LaRoe. 1979. *Classification of Deepwater Habitats of the United States*. US Department of the Interior, Fish and Wildlife Service, Office of Biological Services. Technical Publication FWS/OBS-79/31.

ESRI. 2022. Environmental Systems Research Institute. World Imagery. September 21, 2022. ESRI, ArcGIS Online.

FDACS. 2022. Endangered, Threatened, and Commercially Exploited Plants of Florida website. https://www.freshfromflorida.com/Divisions-Offices/Plant-Industry/Bureaus-and-Services/Bureau-of-Entomology-Nematology-Plant-Pathology/Botany/Florida-s-Endangered-Plants/Endangered-Threatened-and-Commercially-Exploited-Plants-of-Florida. Florida Department of Agriculture and Consumer Services. Accessed September 2022.

FDOT. 1999. Florida Land Use, Cover and Forms Classification System. Florida Department of Transportation. Tallahassee, Florida.

FDOT. 2015. Essential Fish Habitat – State Road 30 (US 98) from 17th Avenue to Baybridge Drive, Escambia and Santa Rosa Counties. FPID# 409334-1. Dated May 2015. Prepared by RD&H for FDOT District Three.

FDOT. 2020. ETDM Summary Report, Project #14384 - SR 789 (Ringling) Bridge Reconstruction/ Rehabilitation Final Programming Screen. Published July 30, 2020. Florida Department of Transportation, District One. Bartow, Florida.

FDOT. 2022. Efficient Transportation Decisions Making (ETDM) Environmental Screening Tool (EST). https://etdmpub.fla-etat.org/est/. Accessed November 2022.

Federal Register. 2008. Compensatory Mitigation for Losses of Aquatic Resources; Final Rule. April 10, 2008. Office of the Federal Register. Washington, D.C.

Federal Register. 2020. Endangered and Threatened Wildlife and Plants; Threatened Species Status for Eastern Black Rail With a Section 4(d) Rule.

https://www.federalregister.gov/documents/2020/10/08/2020-19661/endangered-and-threatened-wildlife-and-plants-threatened-species-status-for-eastern-black-rail-with. Published October 8, 2020. US Fish and Wildlife Service. Washington, D.C.

FGDL. 2022. Florida Geographic Data Library. https://www.fgdl.org/metadataexplorer/explorer.jsp. Accessed September 2022.

FMNH. 2022. Global Sawfish Encounter Map. https://www.floridamuseum.ufl.edu/sawfish/map/. Florida Museum of Natural History/University of Florida. Gainesville, Florida. Accessed September 2022.

FNAI. 2020a. FNAI Standard Data Report. Dated August 12, 2020. Prepared for RK&K. Tallahassee, Florida.

FNAI. 2020b. Florida Natural Areas Inventory, Tracking List. Florida Natural Areas Inventory. Tallahassee, Florida.

FWC. 2019. Little Blue Heron, Reddish Egret, Roseate Spoonbill, Tricolored Heron Species Conservation Measures and Permitting Guidelines, dated April 2019. https://myfwc.com/media/18634/threatened-wading-birds-guidelines.pdf. Florida Fish and Wildlife Conservation Commission. Tallahassee, Florida.

FWC. 2020a. Living with Wildlife and Preventing Wildlife Conflicts: Sturgeon. https://myfwc.com/conservation/you-conserve/wildlife/sturgeon/. Florida Fish and Wildlife Conservation Commission. Tallahassee, Florida. Accessed August 2020.

FWC. 2020b. Sea Turtle Strandings in Florida 1986 – 2017 and 2020. September 16, 2020. Florida Fish and Wildlife Conservation Commission. Tallahassee, Florida.

FWC. 2020c. Living with bats. https://myfwc.com/conservation/you-conserve/wildlife/bats/. Florida Fish and Wildlife Conservation Commission. Tallahassee, Florida. Accessed August 2020.

FWC. 2021a. Florida's Endangered and Threatened Species. June 2021. Florida Fish and Wildlife Conservation Commission. Tallahassee, Florida.

FWC. 2021b. Florida Black Bear Mortality Locations. April 20, 2021. Florida Fish and Wildlife Conservation Commission-Fish and Wildlife Research Institute. Tallahassee, Florida.

FWC. 2021c. Black Bear Related Calls in Florida. April 19, 2021. Florida Fish and Wildlife Conservation Commission-Fish and Wildlife Research Institute. Tallahassee, Florida.

FWC. 2022a. FWC Species Profiles website. https://myfwc.com/wildlifehabitats/profiles/. Florida Fish and Wildlife Conservation Commission. Tallahassee, Florida. Accessed August 2022.

FWC. 2022b. FWC Water Bird Locator website. http://atoll.floridamarine.org/waterBirds/. Florida Fish and Wildlife Conservation Commission. Tallahassee, Florida. Accessed August 2022.

FWC. 2022c. Eagle Nest Locator website. https://public.myfwc.com/FWRI/EagleNests/nestlocator.aspx#search. Database current

through the 2016-2017 nesting season. Florida Fish and Wildlife Conservation Commission. Tallahassee, Florida. Accessed August 2022.

FWC. 2022d. Bear Management Units. https://myfwc.com/wildlifehabitats/wildlife/bear/bmu. Florida Fish and Wildlife Conservation Commission. Tallahassee, Florida. Accessed August 2022.

Gilbert, K. M., J. D. Tobe, R. W. Cantrell, M. E. Sweeley, and J. R. Cooper. 1995. The Florida Wetlands Delineation Manual.

GMFMC. 1982. Fishery Management Plan for Coral and Coral Reefs of the Gulf of Mexico and South Atlantic. Dated April 1982. https://gulfcouncil.org/wp-content/uploads/Coral-FMP.pdf. Gulf of Mexico Fishery Management Council. Tampa, Florida.

GMFMC. 1998. Generic Amendment for Addressing Essential Fish Habitat Requirements in the Fishery Management Plans of the Gulf of Mexico. Gulf of Mexico Fishery Management Council. Tampa, Florida.

Google Earth. 2022. Imagery Date: April 19, 2022. Google Earth. San Francisco, California.

NMFS. 2022a. Species Profiles. https://www.fisheries.noaa.gov/species-directory. NOAA National Marine Fisheries Service. Washington, DC. Accessed September 2022.

NMFS. 2022b. GIS Data for Essential Fish Habitat-Gulf of Mexico. https://www.habitat.noaa.gov/protection/efh/newInv/index.html. National Oceanic and Atmospheric Association, National Marine Fisheries Service. Accessed August 2022.

NMFS. 2022c. Essential Fish Habitat Mapper. https://www.habitat.noaa.gov/application/efhmapper/index.html. NOAA National Marine Fisheries Service. Washington, DC. Accessed September 2022.

NOAA. 2022. Datums for 8726083, Sarasota FL. National Oceanic and Atmospheric Administration, Tides and Currents Website. https://tidesandcurrents.noaa.gov/datums.html?datum=NAVD88&units=0&epoch=0&id=8726083&name=SARASOTA&state=FL. Accessed August 2022.

NRCS. 2020. Soil Survey Geographic (SSURGO) Database for Florida. June 2020. US Department of Agriculture, Natural Resources Conservation Service. Gainesville, Florida.

NRCS. 2022. State Hydric Soils List for Florida. https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcseprd1316619.html. US Department of Agriculture, Natural Resources Conservation Service. Gainesville, Florida. Accessed September 2022.

SC DNR. 2015. State Wildlife Action Plan (SWAP) Supplemental Volume: Species of Concern – Penaeid Shrimp Guild. South Carolina Department of Natural Resources. Columbia, South Carolina.

Smithsonian. 2020. Corals and Sea Anemones (Anthozoa). https://nationalzoo.si.edu/animals/corals-and-sea-anemones-anthozoa. Smithsonian's National Zoo & Conservation Biology Institute. Accessed August 2020.

SWFWMD. 2017. Land Use Land Cover 2017. Published September 1, 2020. Southwest Florida Water Management District. Brooksville, Florida.

Tobe, J. D., K. C. Burks, R. W. Cantrell, M. A. Garland, M. E. Sweeley, D. W. Hall, P. Wallace, G. Anglin, G. Nelson, J. R. Cooper, D. Bickner, K. Gilbert, N. Aymond, K. Greenwood, and N. Raymond. 1998. Florida Wetland Plants: An Identification Manual. Florida Department of Environmental Protection. Tallahassee, Florida.

USACE. 1987. Corps of Engineers Wetlands Delineation Manual. January 1987. US Army Corps of Engineers, Waterways Experiment Station. Vicksburg, Mississippi.

USACE. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0). US Army Corps of Engineers, Engineer Research and Development Center. Vicksburg, Mississippi.

USACE. 2022. Regulatory In-Lieu Fee and Bank Information Tracking System. https://ribits.ops.usace.army.mil/. US Army Corps of Engineers. Accessed September 2022.

USF. 2020. Project Oceanography Unit Two Reef Fish Management – Snapper. https://www.marine.usf.edu/pjocean/packets/f01/f01u2p2.pdf. University of South Florida. Tampa, Florida.

USFWS. 2004. Species Conservation Guideline for the Florida Scrub Jay, Draft dated May 28, 2004. US Fish and Wildlife Service, South Florida Ecological Services Field Office, Vero Beach, Florida.

USFWS. 2010. South Florida Programmatic Wood Stork Effect Determination Key, dated May 18, 2010. https://www.fws.gov/verobeach/BirdsPDFs/20100518LetterServicetoCorpsFLProgrammaticStorkRevised1.pdf. US Fish and Wildlife Service, South Florida Ecological Services Office. Vero Beach, Florida.

USFWS. 2013a. Update Addendum to USFWS Concurrence Letter to US Army Corps of Engineers Regarding Use of the Attached Eastern Indigo Snake Programmatic Effect Determination Key. Letter dated August 13, 2013 from Dawn Jennings, US Fish and Wildlife Service, to Colonel Alan M. Dodd, Jacksonville District Corps of Engineers. US Fish and Wildlife Service. Jacksonville, Florida.

USFWS. 2013b. Standard Protection Measures for the Eastern Indigo Snake. US Fish and Wildlife Service. Jacksonville, Florida.

USFWS. 2013c. US Fish and Wildlife Service/US Army Corps of Engineers Manatee Consultation Key and Associated Maps, dated April 25, 2013.

https://www.fws.gov/verobeach/MammalsPDFs/2013_Manatee%20Key_Maps_Service%20Concurrence.pdf. US Fish and Wildlife Service. Vero Beach, Florida.

USFWS. 2015. Status of the Species – Red Knot. Dated November 2015. https://www.fws.gov/verobeach/StatusoftheSpecies/20151104_SOS_RedKnot.pdf. US Fish and Wildlife Service South Florida Ecological Services Field Office, Vero Beach, Florida.

USFWS. 2019a. Consultation Key for the Florida bonneted bat; 04EF2000-2014-1-0320-R001. Letter dated October 22, 2019 from Roxanna Hinzman, US Fish and Wildlife Service, South Florida Ecological Services Office, to Shawn Zinszer, US Army Corps of Engineers, Jacksonville District. Includes Florida Bonneted Bat Consultation Guidelines, October 2019.

USFWS. 2019b. US Fish and Wildlife Service/US Army Corps of Engineers Manatee Consultation Key Addendum, dated May 13, 2019. https://www.fws.gov/verobeach/MammalsPDFs/20190513_letter_ServicetoCorps_ManateeKeyaddendum.pdf. US Fish and Wildlife Service. Vero Beach, Florida.

USFWS. 2020a. Nesting Colonies and Core Foraging Areas 2010-2019. April 15, 2020. US Fish and Wildlife Service, North Florida Ecological Services Office. Jacksonville, Florida.

USFWS. 2020b. US FWS Threatened & Endangered Species Active Critical Habitat Report. March 27, 2020. US Fish and Wildlife Services, Environmental Conservation Online System.

USFWS. 2021. National Wetlands Inventory Polygons in Florida – Surface Waters and Wetlands (Version 2). February 26, 2021. US Fish and Wildlife Service. Washington, D.C.

USFWS. 2022a. Protected Species Consultation Areas databases. US Fish and Wildlife Service, South Florida Ecological Services Field Office. https://www.fws.gov/verobeach/GIS.html. Accessed September 2022.

USFWS. 2022b. Endangered Species website. https://www.fws.gov/endangered/. US Fish and Wildlife Service. Accessed September 2022.

USFWS. 2022c. Endangered and Threatened Species: Designation of Critical habitat for Florida Bonneted Bat. https://www.regulations.gov/document?D=FWS-R4-ES-2019-0106-0001. US Fish and Wildlife Service South Florida Ecological Services Field Office. Vero Beach, Florida. Accessed September 2022.

Wunderlin, R. P., B. F. Hansen, A. R. Franck, and F. B. Essig. 2020. Atlas of Florida Plants. http://florida.plantatlas.usf.edu [S.M. Landry and K.N. Campbell (application development), USF Water Institute.] Institute of Systemic Botany, University of South Florida. Tampa, Florida. Accessed September 2020.

APPENDICES

Appendix A – Preferred Alternative Plans

Appendix B – NMFS Noise Assessment Impact Report

Appendix C – Prior Agency Coordination

Appendix D – Florida Land Use, Cover and Forms Classification (FLUCFCS) Maps

Appendix E – Natural Resource Conservation Service (NRCS) Soils Maps

Appendix F – Florida Natural Areas Inventory (FNAI) Standard Data Report

Appendix G – Species Protection Measures/Supplemental Specifications and Consultation Keys

Appendix H – Project Wetland and Other Surface Water Locations and Impact Areas

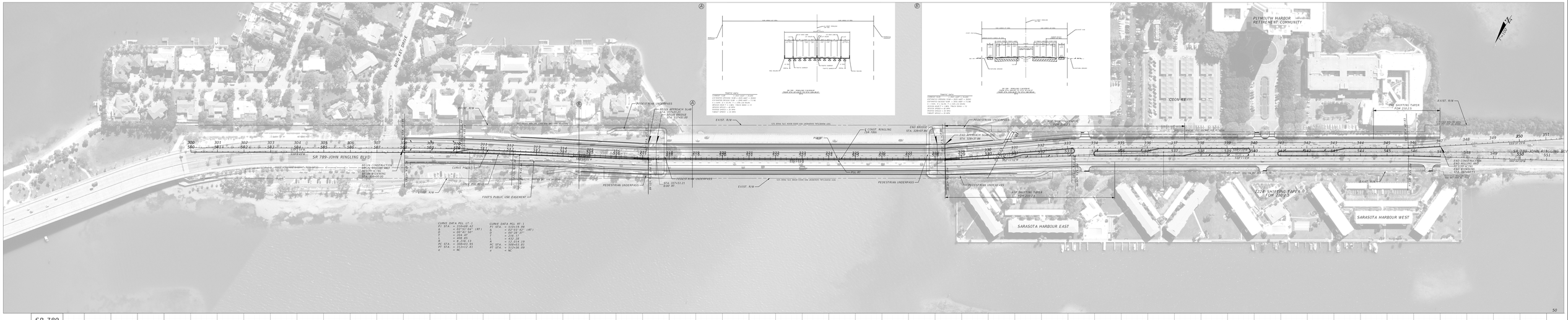
Appendix I – Project Site Photos

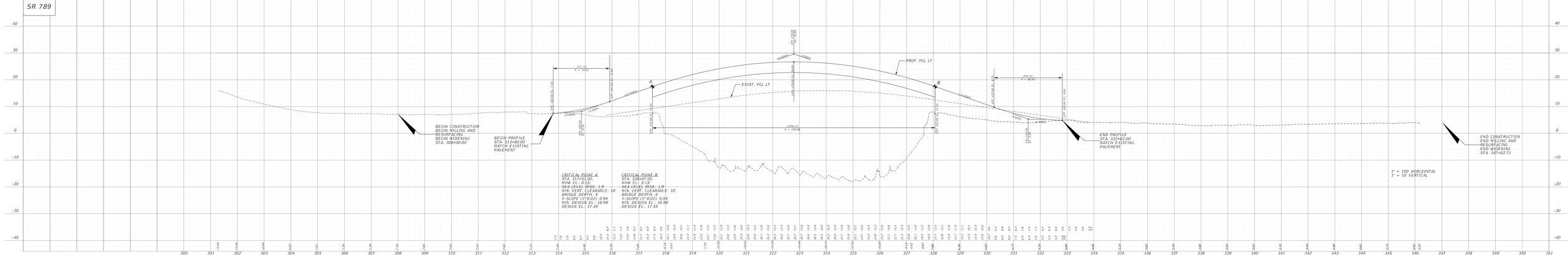
Appendix J – UMAM Data Sheets

Appendix K – Essential Fish Habitat (EFH) Impact Maps

APPENDIX A

Preferred Alternative Plans





ROBERT EDWARD HODEK
P.E. LICENSE NUMBER 67455
HARDESTY & HANOVER, LLC
550 EISENHOWER BOULEVARD, SUITE 300
TAMPA, FL 33634

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			SR 789 PLAN-PROFILE	SHEET NO.
ROAD NO.	COUNTY	FINANCIAL PROJECT ID		1
789	SARASOTA	736680-1-22-01 736680-1-52-01		

Appendix B

NMFS Noise Assessment Impact Report

IMPACT PILE DRIVING REPORT

VERSION 1.1-Multi-Species: 2022

PRINT IN LANDSCAPE TO CAPTURE ENTIRE SCREEN

(if OTHER INFO or NOTES get cut-off, please include information elsewhere)

SR 789 (Little Ringling Bridge) Project Development and Environment Study FDOT District 1 Environmental Management Office Contact: Jonathon Bennett (863) 519-2495, Jonathon.Bennett@dot.state.fl.us

PROJECT INFORMATION	PEAK	SELss	RMS
Attenuated Single strike level (dB)	204	171	176
Distance associated with single strike level (meters)	10	10	10
Transmission loss constant	15		
Number of piles per day	4		
Number of strikes per pile	250		
Number of strikes per day	1000		
Cumulative SEL at measured distance	201		

OTHER INFO 0

NOTES other information

Attenuation 5

RESULTANT ISOPLETHS

(Range to Effects)

FISHES

	ONSET OF PHYSICAL INJURY			BEHAVIOR
	Peak Isopleth	SEL_{cum} Isopleth		RMS Isopleth
		Fish ≥ 2 g	Fish < 2 g	
ISOPLETHS (meters)	7.4	85.8	158.5	541.2
Isopleth (feet)	24.1	281.4	520.0	1,775.5

SEA TURTLES

	PTS ONSET		BEHAVIOR
	Peak Isopleth	SEL_{cum} Isopleth	RMS Isopleth
ISOPLETHS (meters)	0.1	6.3	11.7
Isopleth (feet)	0.4	20.7	38.3

MARINE MAMMALS

	LF Cetacean	MF Cetaceans	HF Cetaceans	PW Pinniped	OW Pinnipeds
PTS ONSET (Peak isopleth, meters)	1.0	0.2	13.6	1.2	0.1
PTS ONSET (Peak isopleth, feet)	3.3	0.6	44.6	3.8	0.4
PTS ONSET (SEL_{cum} isopleth, meters)	158.3	5.6	188.5	84.7	6.2
PTS ONSET (SEL_{cum} isopleth, feet)	519.3	18.5	618.5	277.9	20.2

	ALL MM
Behavior (RMS isopleth, meters)	116.6
Behavior (RMS isopleth, feet)	382.5

APPENDIX C

Prior Agency Coordination

Minutes

SWFWMD/FDOT Meeting Minutes

SR 789 (Ringling) from Bridge Key Drive to Sarasota Harbor West
Concurrent Project Development and Environment (PD&E) Study and Design
Sarasota County

FPID#: 436680-1-22-01 and 436680-1-32-01

Thursday November 3, 2022 (2:00 – 3:00 PM)
Teams Meeting

I. Introductions
- SWFWMD
  - David Kramer, Al Gagne
- Florida Department of Transportation
  - Nicole Monies, Brent Setchell, Ben Shepard
- Hardesty & Hanover Team
  - Jason Dunn (H&H), Gordon Mullen (RK&K)

II. Project Overview
- Proposed roadway widening and bridge replacement project over tidal waters. Roadway widening and bridge replacement will not include additional traffic lanes, but will include paved shoulders and will replace existing 5' sidewalks with 14' wide multi-use paths. Additionally, FDOT is considering narrowing the travel lanes which would allow wider outside shoulders for occasional transit use for the trolley
- Proposed typical section is a single bridge, the twin parallel bridges will be removed.
- Right turn lanes are also contemplated on the island
- A draft profile and typical sections was shown from the 15% Line and Grade submittal

III. Site Information
- Sarasota Bay (WBID 1968) impaired for bacteria
- Sarasota Bay is an OFW
- Existing Bridge runoff is direct discharge to Sarasota Bay via scuppers
- FEMA Flood Zones AE and VE

IV. Water Quantity
- Tidal outfall
- Exempt from peak rate attenuation
- Scour analysis for proposed condition

V. Water Quality
- Bridge Replacement - Not adding capacity to roadway (4 lanes existing will be replaced with 4 lanes)
  - Reference PA 406905, Verified with SWFWMD on 7/11/19

        - Shoulders, bicycle lanes and sidewalks are exempt from providing water quality
    - Jason: Proposed design will remove the direct discharge to Sarasota Bay by removing the bridge scuppers in the proposed design
    - Jason: Design team will maximize green spaces from bridge realignment to provide BMPs for treatment (dry retention)
    - Jason: Identified hardship that all project improvements will occur within existing right of way.
    - David Kramer: Transit use on shoulder would require treatment of this additional impervious surface
        - Reference FDOT District 7 project I-275 bus on shoulder project
    - Treatment volume was determined to be presumptive criteria plus 150% OFW adjustment for additional transit lane.
    - A temporary mixing zone will be established during construction

VI. Sovereign Lands Discussion
- Project will be constructed within the existing SSL easement

VII. Environmental
- Seagrass mitigation
    - Estimated 0.05 acre of direct impacts and 0.12 acre of secondary impacts (using a 100-foot buffer from the outside edges of the existing bridges). UMAM will be used to evaluate functional loss.
    - Anticipates using the FDOT D1 Skyway WADs site (pending permitting). SWFWMD does not require a ratio for out of basin mitigation.
    - SWFWMD staff confirmed that a coastal cumulative impact analysis will be required to demonstrate no cumulative impacts.
- Mangrove mitigation
    - Estimated 0.05 acre of direct impacts (mostly of individual mangroves along the eastern end of the bridge).
    - Brent stated that potential mitigation options are still being evaluated due to lack of available local mitigation banks with mangrove/estuarine credits.
    - SWFWMD suggested that on-site planting could be an option.
    - Mitigation planting would also likely require additional coordination with the City of Sarasota (Bird Key Park owner) and/or the FDEP for potential Sovereign Submerged Lands involvement.
- Listed/protected species –
    - Applicable federal species include free-swimming sea turtles (several species), West Indian manatee and low potential for small tooth sawfish and Gulf sturgeon.
    - State-listed species generally consist of state-threatened shorebird and water bird species.
    - The PD&E study's Draft Natural Resources Evaluation document is being prepared with the intent to have as much preliminary construction information available to seek advanced consultation with the National Marine Fisheries Service.

Brett Berube

From: David Rydene - NOAA Federal <david.rydene@noaa.gov>
Sent: Monday, August 15, 2022 11:02 AM
To: Bennett, Jonathon
Cc: Bateman, Patrick; James Englert; Kimberly Warren; Brett Berube; Gordon Mullen
Subject: Re: 436680-1-22-01 SR 789/Little Ringling PD&E - Seagrass/SAV coordination with NMFS

Hi Jonathon,

I think it will be fine to use the 2020 seagrass/SAV survey information to complete the project's PD&E Phase, with the caveat that FDOT will resurvey the project's study area for seagrass/SAV during the Design Phase.

Thanks, Dave

On Fri, Aug 12, 2022 at 1:13 PM Bennett, Jonathon <Jonathon.Bennett@dot.state.fl.us> wrote:

> Dave,
>
> Good afternoon. I would like to coordinate with you regarding the subject project, which NMFS previously reviewed under ETDM# 14384-1 FPID# 436680-1. Our project consultants completed a seagrass/SAV survey for this project back in July 2020. During their field surveys, our consultants delineated approximately 4.39 acres of seagrass/SAV (predominantly turtle grass and manatee grass) within and adjacent to the project study area. The extent of the seagrasses were mapped and are presented relative to the project alternatives considered in the attached PDF file.
>
> COVID-19, project funding and other coordination issues resulted in delays to the project. As such, it has been 2 years since the completion of the seagrass surveys. This project is currently in the PD&E phase, but will transition very quickly to the Design phase, inclusive of the environmental permitting phase. Based on the alternatives being evaluated, project impacts to seagrass/SAV are not anticipated to exceed 0.07 acre.
>
> With this e-mail, FDOT District One is requesting the NMFS' concurrence to use the 2020 seagrass/SAV survey results to complete the PD&E-phase consultation (i.e., NMFS' Natural Resources Evaluation document review and comment/concurrence). With a Commitment to resurvey during the subsequent Design-phase, the FDOT's consultant will complete an updated seagrass/SAV survey prior to the submittal of environmental permitting documents as needed to support the US Army Corps of Engineers Section 404/Section 10 Permit or US Coast Guard Bridge Permit.
>
> You will see the Natural Resources Evaluation upon its completion for the PD&E.

Please let us know if the NMFS concurs or disagrees with this approach.

Thank you in advance for your time and reply.

Jonathon A. Bennett

Environmental Project Manager

ETDM Coordinator

Florida Department of Transportation|District One

801 North Broadway Avenue|Bartow, Florida 33830

PH: (863) 519-2495 EMAIL: Jonathon.Bennett@dot.state.fl.us

--
David Rydene, Ph.D.
Fish Biologist
National Marine Fisheries Service
Habitat Conservation Division
263 13th Avenue South
St. Petersburg, FL 33701
Office (727) 824-5379
Cell (813) 992-5730
Fax (727) 824-5300

Appendix D

Florida Land Use, Cover and Forms Classification (FLUCFCS) Map

LEGEND

FLUCFCS

- 1200 : Residential Medium Density
- 1800 : Recreational
- 5400 : Bays and Estuaries
- 6120 : Mangrove Swamps
- 6540 : Oyster Bars
- 8100 : Transportation
- 9110 : Seagrass

FDOT

SR 789 (Little Ringling Bridge)
From Bird Key Drive
to Sarasota Harbor West
FPID No.: 436680-1-22-01
Project Development and Environment Study

FLUCFCS Map

Sources:
ESRI, 2022; SWFWMD, 2017; RK&K, 2020 (Field Review)

0 100 200 400
Feet
1 inch = 100 feet

LEGEND

FLUCFCS

- 1300 : Residential High Density
- 1400 : Commercial and Services
- 5400 : Bays and Estuaries
- 8100 : Transportation
- 9110 : Seagrass

FDOT

SR 789 (Little Ringling Bridge)
From Bird Key Drive
to Sarasota Harbor West
FPID No.: 436680-1-22-01
Project Development and Environment Study

FLUCFCS Map

Sources:
ESRI, 2022; SWFWMD, 2017; RK&K, 2020 (Field Review)

0 100 200 400
Feet
1 inch = 100 feet

LEGEND

FLUCFCS

- 1300 : Residential High Density
- 1400 : Commercial and Services
- 5400 : Bays and Estuaries
- 8100 : Transportation

SR 789 (Little Ringling Bridge)
From Bird Key Drive
to Sarasota Harbor West
FPID No.: 436680-1-22-01
Project Development and Environment Study

FLUCFCS Map

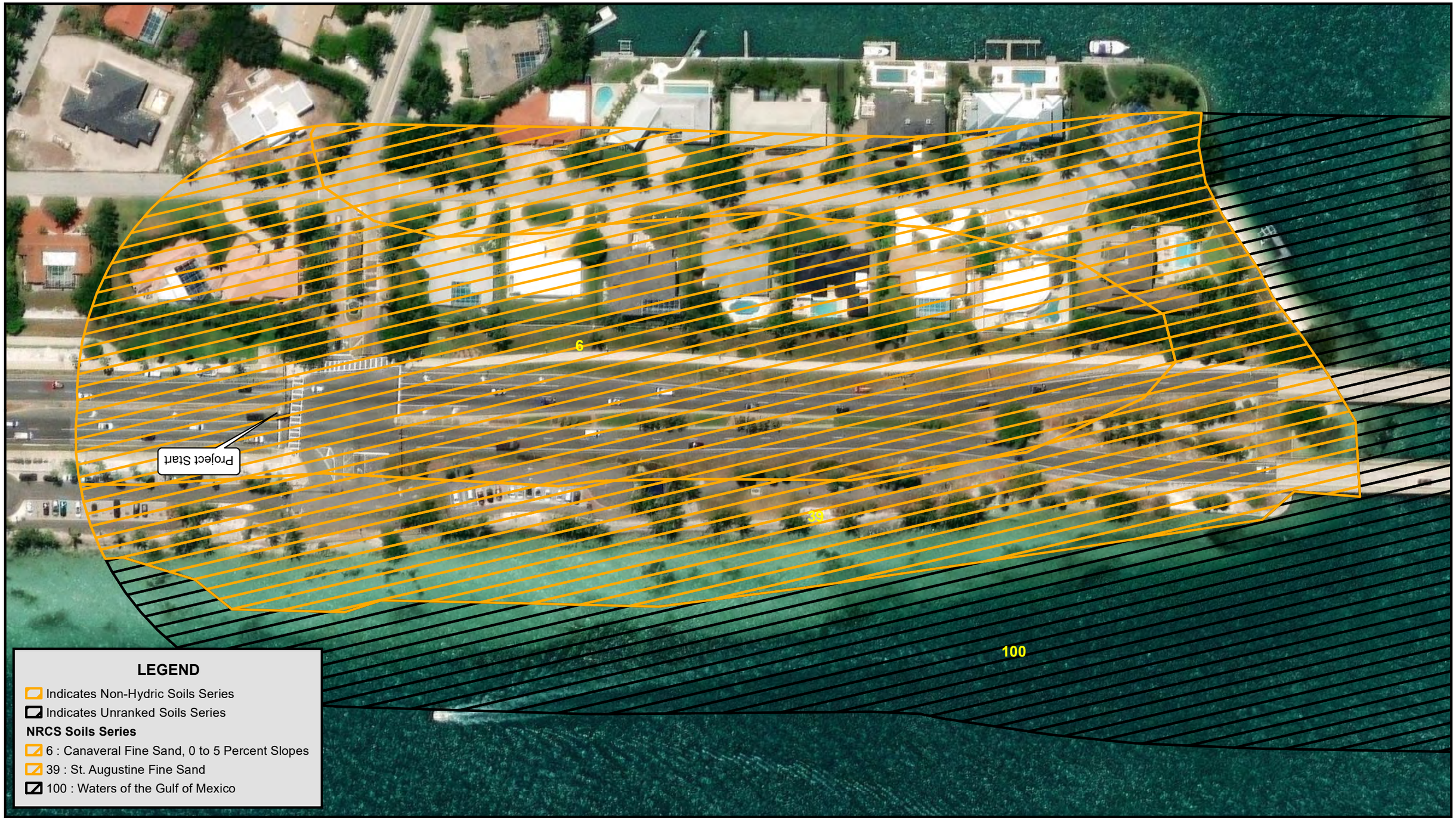
Sources:
ESRI, 2022; SWFWMD, 2017; RK&K, 2020 (Field Review)

0 100 200 400
Feet
1 inch = 100 feet

Appendix E

Natural Resource Conservation Service (NRCS)

Soils Map



LEGEND

- Indicates Non-Hydric Soils Series
- Indicates Unranked Soils Series

NRCS Soils Series

- 6 : Canaveral Fine Sand, 0 to 5 Percent Slopes
- 39 : St. Augustine Fine Sand
- 100 : Waters of the Gulf of Mexico

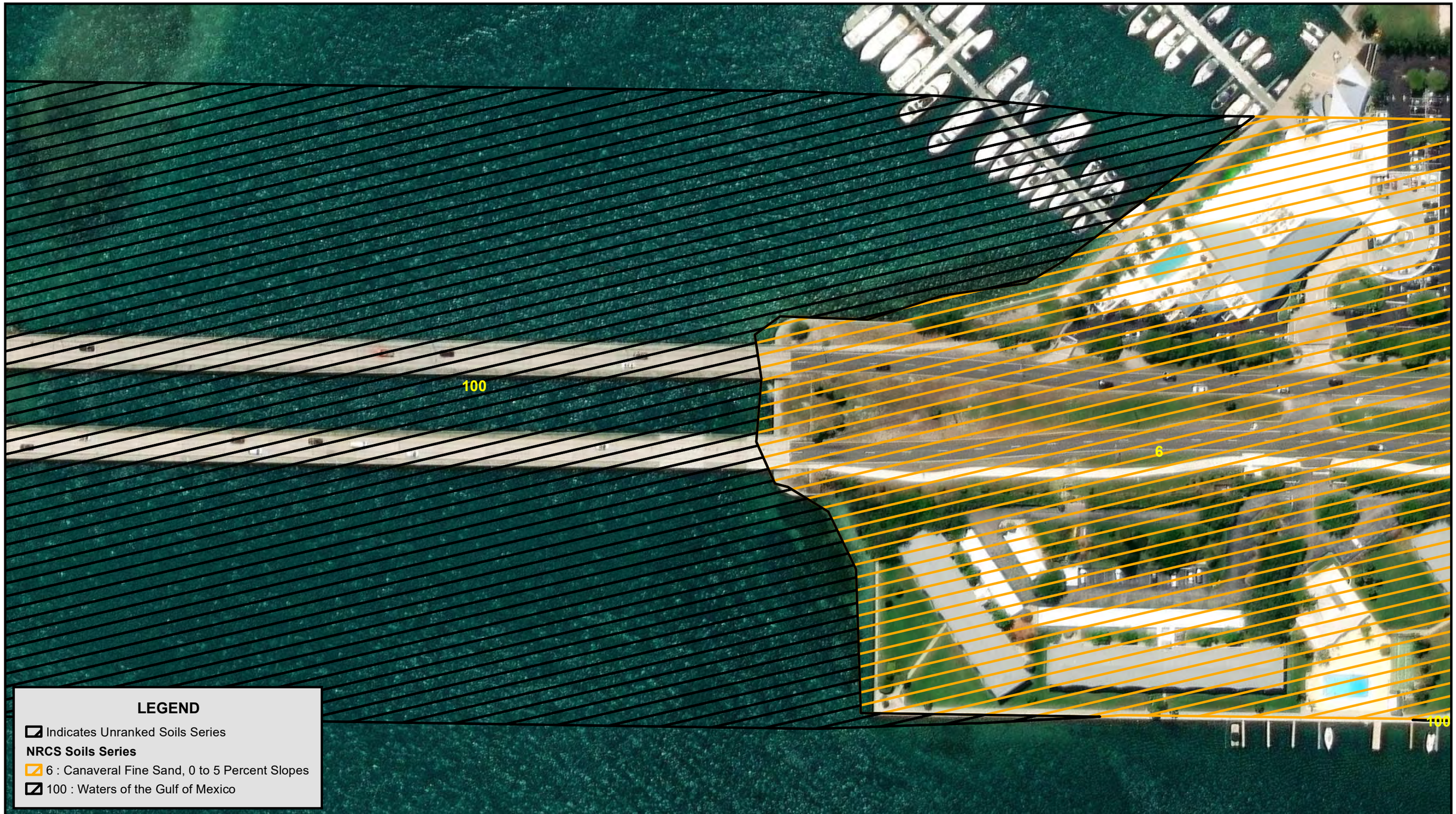
FDOT

SR 789 (Little Ringling Bridge)
From Bird Key Drive
to Sarasota Harbor West
FPID No.: 436680-1-22-01
Project Development and Environment Study

NRCS Soils Map

Sources:
ESRI, 2022; NRCS, 2020

0 100 200 400
Feet
1 inch = 100 feet



LEGEND

Indicates Unranked Soils Series

NRCS Soils Series

6 : Canaveral Fine Sand, 0 to 5 Percent Slopes

100 : Waters of the Gulf of Mexico

FDOT

SR 789 (Little Ringling Bridge)
From Bird Key Drive
to Sarasota Harbor West
FPID No.: 436680-1-22-01
Project Development and Environment Study

NRCS Soils Map

Sources:
ESRI, 2022; NRCS, 2020

0 100 200 400
Feet
1 inch = 100 feet

LEGEND

- Indicates Non-Hydric Soils Series
- Indicates Unranked Soils Series

NRCS Soils Series

- 6 : Canaveral Fine Sand, 0 to 5 Percent Slopes
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SR 789 (Little Ringling Bridge)
From Bird Key Drive
to Sarasota Harbor West
FPID No.: 436680-1-22-01
Project Development and Environment Study

NRCS Soils Map

Sources:
ESRI, 2022; NRCS, 2020

0 100 200 400
Feet
1 inch = 100 feet

Appendix F

Florida Natural Areas Inventory (FNAI) Standard Data Report

FLORIDA
Natural Areas
INVENTORY

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
850-224-8207
fax 850-681-9364
www.fnai.org

August 12, 2020

Brett Berube
RK&K
14055 Riveredge Drive, Suite 130
Tampa, FL 33637

Dear Mr. Berube,

Thank you for requesting information from the Florida Natural Areas Inventory (FNAI). At your request we have produced the following report for your project area.

The purpose of this Standard Data Report is to provide objective scientific information on natural resources located in the vicinity of a site of interest, in order to inform those involved in project planning and evaluation. This Report makes no determination of the suitability of a proposed project for this location, or the potential impacts of the project on natural resources in the area.

Project: State Road 789 PD&E Study

Date Received: 8/6/2020

Location: Sarasota County

Element Occurrences

A search of our maps and database indicates that we currently have several element occurrences mapped in the vicinity of the study area (see enclosed map and element occurrence table). Please be advised that a lack of element occurrences in the FNAI database is not a sufficient indication of the absence of rare or endangered species on a site.

The element occurrences data layer includes occurrences of rare species and natural communities. The map legend indicates that some element occurrences occur in the general vicinity of the label point. This may be due to lack of precision of the source data, or an element that occurs over an extended area (such as a wide ranging species or large natural community). For animals and plants, element occurrences generally refer to more than a casual sighting; they usually indicate a viable population of the species. Note that some element occurrences represent historically documented observations which may no longer be extant. Extirpated element occurrences will be marked with an 'X' following the occurrence label on the enclosed map.

Likely and Potential Rare Species

In addition to documented occurrences, other rare species and natural communities may be identified on or near the site based on habitat models and species range models (see enclosed Biodiversity Matrix Report). These species should be taken into consideration in field surveys, land management, and impact avoidance and mitigation.

FNAI habitat models indicate areas, which based on land cover type, offer suitable habitat for one or more rare species that is known to occur in the vicinity. Habitat models have been developed for approximately 300 of the rarest species tracked by the Inventory, including all federally listed species.

Florida Resources
and Environmental
Analysis Center

Institute of Science
and Public Affairs

The Florida State University

FNAI species range models indicate areas that are within the known or predicted range of a species, based on climate variables, soils, vegetation, and/or slope. Species range models have been developed for approximately 340 species, including all federally listed species.

The FNAI Biodiversity Matrix Geodatabase compiles Documented, Likely, and Potential species and natural communities for each square mile Matrix Unit statewide.

CLIP

The enclosed map shows natural resource conservation priorities based on the Critical Lands and Waters Identification Project. CLIP is based on many of the same natural resource data developed for the Florida Forever Conservation Needs Assessment, but provides an overall picture of conservation priorities across different resource categories, including biodiversity, landscapes, surface waters, and aggregated CLIP priorities (that combine the individual resource categories). CLIP is also based primarily on remote sensed data and is not intended to be the definitive authority on natural resources on a site.

For more information on CLIP, visit http://www.fnai.org/clip.cfm .
The Inventory always recommends that professionals familiar with Florida's flora and fauna conduct a site-specific survey to determine the current presence or absence of rare, threatened, or endangered species.

Please visit www.fnai.org/trackinglist.cfm for county or statewide element occurrence distributions and links to more element information.

The database maintained by the Florida Natural Areas Inventory is the single most comprehensive source of information available on the locations of rare species and other significant ecological resources. However, the data are not always based on comprehensive or site-specific field surveys. Therefore this information should not be regarded as a final statement on the biological resources of the site being considered, nor should it be substituted for on-site surveys. Inventory data are designed for the purposes of conservation planning and scientific research, and are not intended for use as the primary criteria for regulatory decisions.

Information provided by this database may not be published without prior written notification to the Florida Natural Areas Inventory, and the Inventory must be credited as an information source in these publications. **The maps contain sensitive environmental information, please do not distribute or publish without prior consent from FNAI.** FNAI data may not be resold for profit.

Thank you for your use of FNAI services. An invoice will be mailed separately. If I can be of further assistance, please contact me at (850) 224-8207 or at kbrinegar@fnai.fsu.edu.

Sincerely,

Kerri Brinegar

Kerri Brinegar
GIS / Data Services

Encl

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
(850) 224-8207
(850) 681-9364 Fax
www.fnai.org

FLORIDA Natural Areas INVENTORY

State Road 789 PD&E Study

Site boundaries are approximate.

Sarasota County

Element Occurrences
- Animals
- Plants
- Communities
- Other
- Data Sensitive

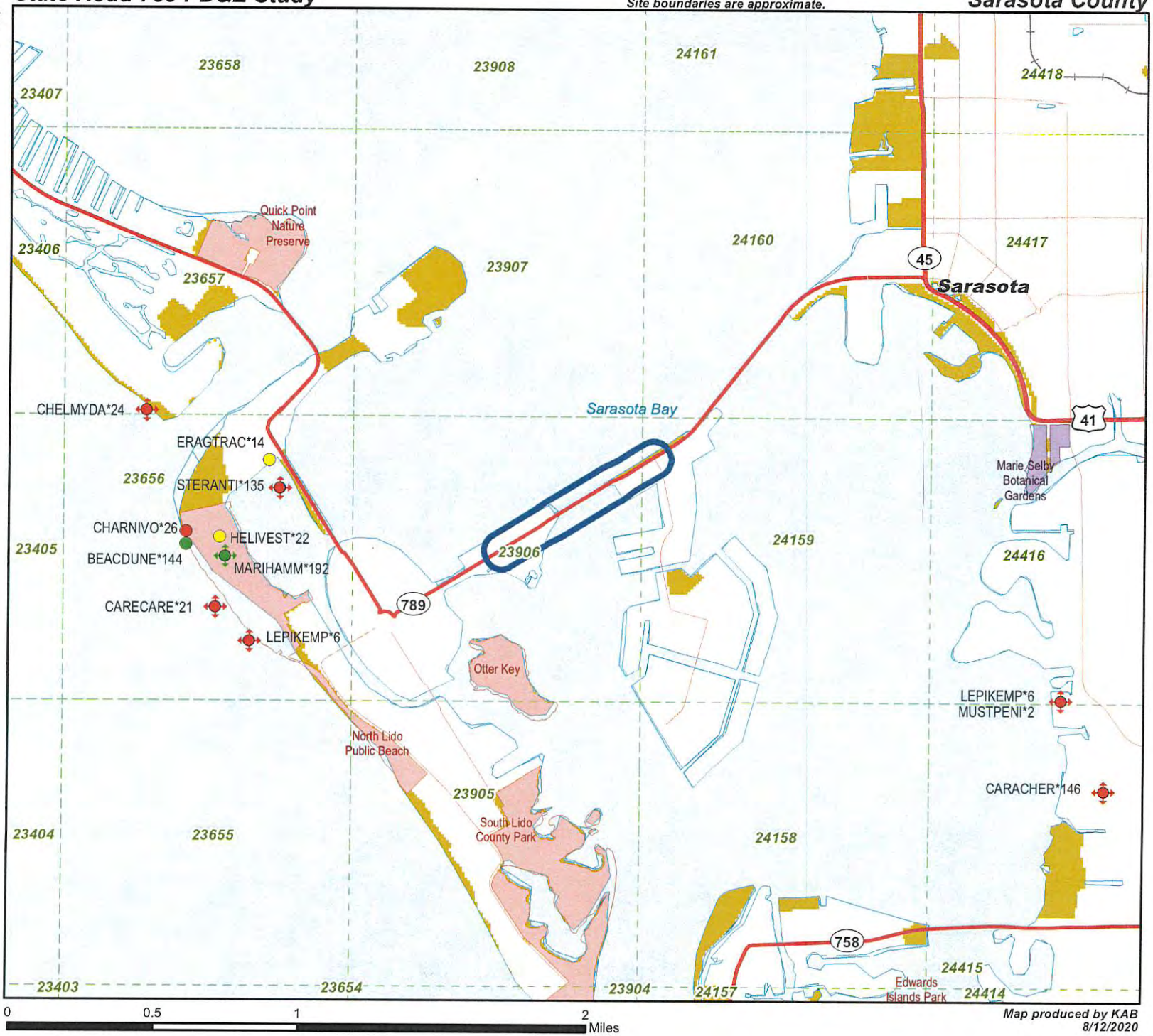
Point Indicates General Vicinity of Element

U.S. Fish & Wildlife Service Scrub Jay Survey 1992-96

Conservation Lands
- Federal
- State
- Local
- Private
- State Aquatic Preserves

Land Acquisition Projects
- Florida Forever Board of Trustees Projects

- FNAI Rare Species Habitat
- FNAI Biodiversity Matrix Square Mile Units
- County Boundary
- Roads
- Water



0 0.5 1 2 Miles

Map produced by KAB
8/12/2020

NOTE
This map contains environmentally sensitive information. Please do not distribute or publish without prior consent from FNAI. Map should not be interpreted without accompanying documents.

State Road 789 PD&E Study

Site boundaries are approximate.

Sarasota County

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
(850) 224-8207
(850) 681-9364 Fax
www.fnai.org

FLORIDA Natural Areas INVENTORY

CLIP v4.0 Resource Priorities

Biodiversity Resource Category
- Priority 1 - highest
- Priority 2
- Priority 3
- Priority 4
- Priority 5

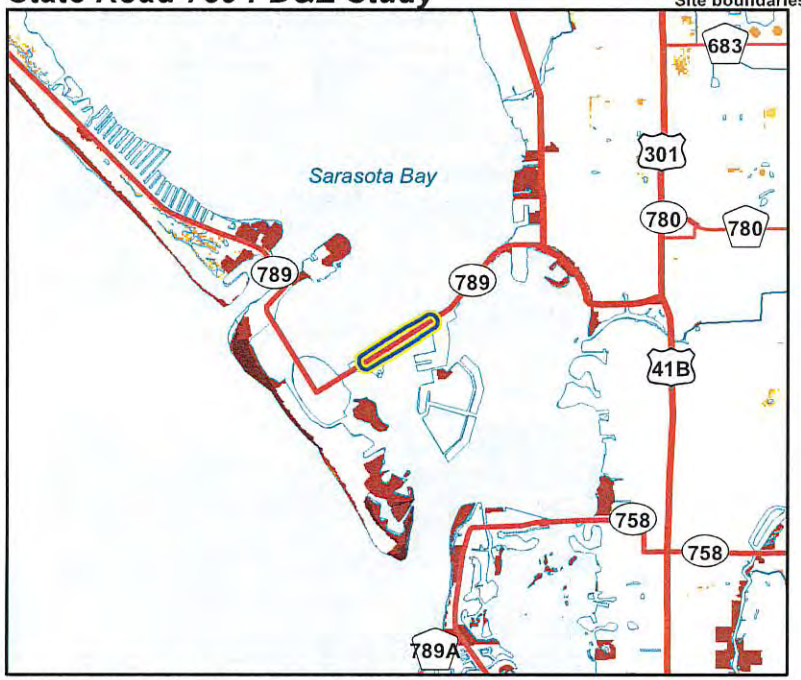
Landscape Resource Category
- Priority 1 - highest
- Priority 2
- Priority 3
- Priority 4
- Priority 5

Surface Water Resource Category
- Priority 1 - highest
- Priority 2
- Priority 3
- Priority 4
- Priority 5

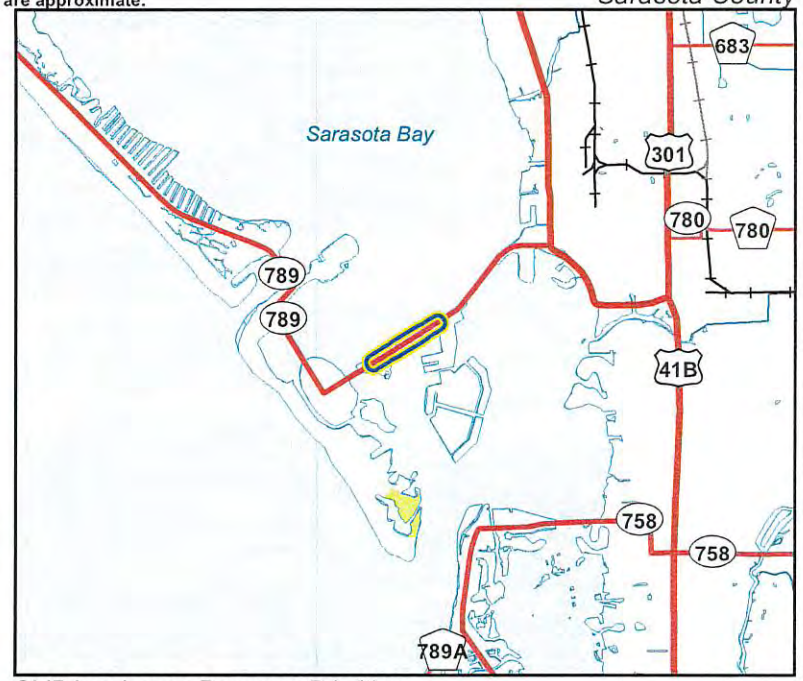
Aggregated CLIP Priorities
- Priority 1 - highest
- Priority 2
- Priority 3
- Priority 4
- Priority 5

Site Boundary

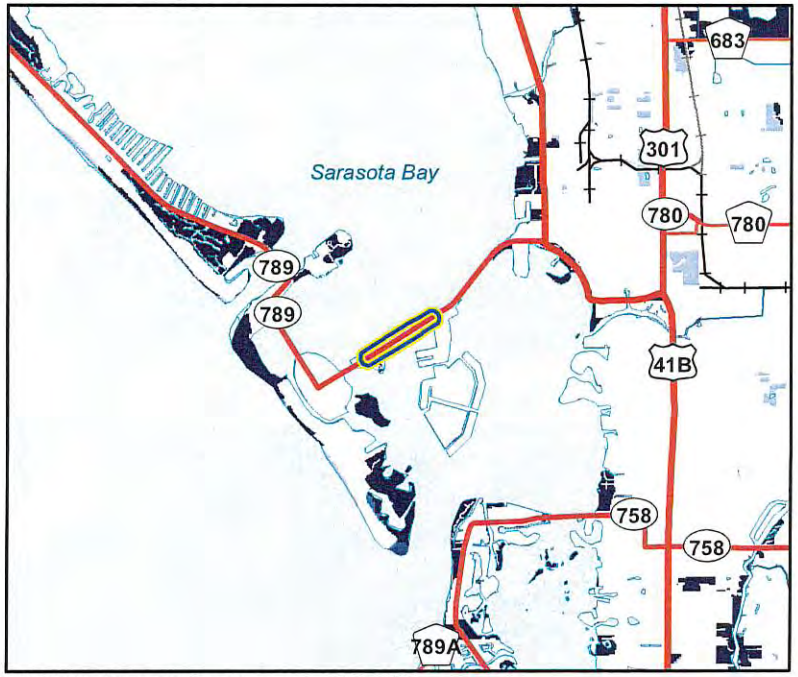
Map should not be interpreted without accompanying documents.



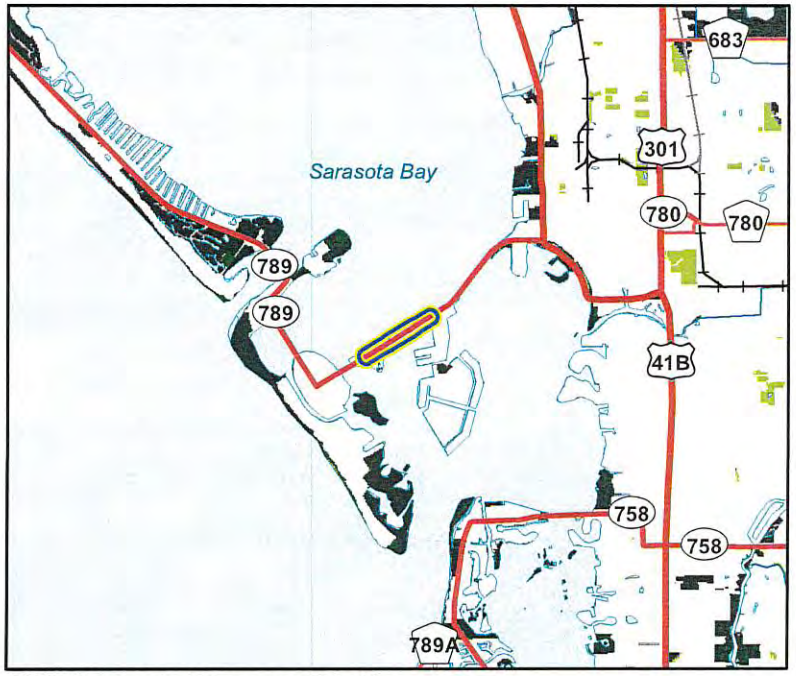
CLIP Biodiversity Resource Priorities



CLIP Landscape Resource Priorities



CLIP Surface Water Resource Priorities



CLIP Aggregated Resource Priorities

0 0.5 1 2 3 4 5 6 Miles

Critical Lands and Waters Identification Project (CLIP) is a cooperative effort between the FSU Florida Natural Areas Inventory, UF Center for Landscape Conservation Planning, and FL Fish & Wildlife Conservation Commission, with additional funding from FL Dept of Environmental Protection and US Fish & Wildlife Service.

Map produced by KAB
8/12/2020

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
(850) 224-8207
(850) 681-9364 Fax
www.fnai.org

FLORIDA Natural Areas INVENTORY

FNAI ELEMENT OCCURRENCE REPORT on or near

State Road 789 PD&E Study

Map Label	Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing	Observation Date	Description	EO Comments
BEACDUNE*144	Beach dune		G3	S2	N	N	2004	BROAD BEACH, BUILDING.	2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1991-03-28) (U05FNA02FLUS). BACKDUNE AREA PARTLY VEGETATED BY SEA OATS, IVA IMBRICATA, AND SESUVIUM PORTULACASTURM. MOSTLY PIONEER DUNELETS-NO LARGE DUNES.
CARACHER*146	*Caracara cheriway*	Crested Caracara	G5	S2	T	FT	1978	No general description given	ACTIVE TERRITORY/BREEDING PAIR. CENTROID MARKS ESTIMATED CENTER OF TERRITORY (MEAN DIAMETER, 5 MI.).
CARECARE*21	*Caretta caretta*	Loggerhead Sea Turtle	G3	S3	T	FT	2012	Gulf Coast beaches and dunes. Some beaches are bordered by dense development whereas others are protected within natural areas.	Nesting beaches of the central-west Florida genetic subunit as defined by Shamblin et al. (2011) (A11SHA01FLUS; see Directions). 2008-2012: annual nesting density ranged from 0.34 to 133.56 nests per km; density generally increased from north to south, with the highest being observed on Manasota Key (Charlotte County) (U13FWC01FLUS). 2006-2011, Pinellas County: Dellert et al. (2014) showed that clutches relocated to renourished beaches (to avoid flooding) hatched at normal rates, with reduced incidence of drowing (A14DEL01FLUS).
CHARNIVO*26	*Charadrius nivosus*	Snowy Plover	G3	S1	N	ST	1991-07-01	1991-03-28: broad beach, partly vegetated by sea oats, sea purslane and beach elder. Nests are in backdune area (PNDPAR03FLUS).	1991-07-01: nine nests; none successful. 1991-03-28: four nests knowns. 1990: six nests, at least two destroyed and at least three sets of young seen (PNDPAR03FLUS).
CHELMYDA*24	*Chelonia mydas*	Green Sea Turtle	G3	S2S3	T	FT	2012	Gulf Coast beaches and dunes. Many of the beaches are bordered by dense development, although some are adjacent to protected natural areas.	Observed and likely nesting beaches from Pinellas County to Ten Thousand Islands National Wildlife Refuge. From 2008-2012, the surveyed beaches had annual nesting densities ranging from 0.01 to 1.12 nests per km; the highest nesting density was on Manasota Key (U13FWC01FLUS).
ERAGTRAC*14	*Eragrostis pectinacea var. tracyi*	Sanibel lovegrass	G5T1	S1	N	E	1971-03-09	VACANT LOT WITH SHELLY SAND SOIL	No EO data given

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FLORIDA Natural Areas INVENTORY

FNAI ELEMENT OCCURRENCE REPORT on or near

State Road 789 PD&E Study

Map Label	Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing	Observation Date	Description	EO Comments
HELIVEST*22	*Helianthus debilis ssp. vestitus*	hairy beach sunflower	G5T2	S2	N	N	1991-03-28	BROAD NEW BEACH WITH WOODY SPECIES BEHIND IT.	HELIANTHUS GROWS SCATTERED BETWEEN NEW BEACH DEPOSIT AND OLDER STABLE AREA WITH WOODY SPECIES. FLOWERING.
LEPIKEMP*6	*Lepidochelys kempii*	Kemp's Ridley Sea Turtle	G1	S1	E	FE	2013	Gulf Coastal waters along west-central and southwest Florida; broad continental shelf (90-110 km) slopes gently, supports mosaic of benthic communities with many bottom types; beaches (A15SER01FLUS,).	Based on > 70 captures and strandings from 2005–2013, this is an important foraging area especially for juveniles and subadults. A few (< 10) isolated nests annually in southwest Florida (A15SER01FLUS).
MARIHAMM*192	Maritime hammock		G3	S2	N	N	2004	AUSTRALIAN PINES WITH FEW NATIVES IN UNDERSTORY.	2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1991-03-28) (U05FNA02FLUS). CASUARINA EQUISELIFOLIA-ABUNDANT, COCCOLOBA UVIFERA-OCCASIONAL, FORESTIERA SEGREGATA-OCC., SOPHORA TOMENTOSA-RARE, SCHINUS TEREBINTHIFOLIUS-A, CONOCARPUS ERECTUS-O, ZANTHOXYLUM CLAVA-HERCULIS-R.
MUSTPENI*2	*Mustela frenata peninsulae*	Florida Long-tailed Weasel	G5T3?	S3?	N	N	ZZ	No general description given	MUSEUM SPECIMEN #12440 COLLECTED BY H.B. SHERMAN NO DATE.
STERANTI*135	*Sternula antillarum*	Least Tern	G4	S3	N	ST	1992	No general description given	1992: B. Perry, data (reproductive site) from FY 1992-93 Coastal Wildlife Questionnaire; Delorme page 97, site # 1; 50 pairs LETE; all obs. nesting 1992 season between April and August; site documented as nesting area since the 1950's when local birding groups began keeping records (U97GFC02FLUS).

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
(850) 224-8207
(850) 681-9364 Fax

FLORIDA Natural Areas INVENTORY

Florida Natural Areas Inventory

Biodiversity Matrix Report

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing
Matrix Unit ID: 23906					
Documented					
Lepidochelys kempii	Kemp's Ridley Sea Turtle	G1	S1	E	FE
Likely					
Mycteria americana	Wood Stork	G4	S2	T	FT
Sternula antillarum	Least Tern	G4	S3	N	ST
Trichechus manatus	West Indian Manatee	G2	S2	T	FT
Potential					
Acipenser oxyrinchus desotoi	Gulf Sturgeon	G3T2T3	S2?	T	FT
Ardea herodias occidentalis	Great White Heron	G5T2	S2	N	N
Charadrius melodus	Piping Plover	G3	S2	T	FT
Drymarchon couperi	Eastern Indigo Snake	G3	S3	T	FT
Eragrostis pectinacea var. tracyi	Sanibel lovegrass	G5T1	S1	N	E
Eretmochelys imbricata	Hawksbill Sea Turtle	G3	S1	E	FE
Gopherus polyphemus	Gopher Tortoise	G3	S3	C	ST
Harrisia aboriginum	aboriginal prickly apple	G1	S1	E	E
Rallus longirostris scottii	Florida Clapper Rail	G5T3?	S3?	N	N
Setophaga discolor paludicola	Florida Prairie Warbler	G5T3	S3	N	N
Matrix Unit ID: 24159					
Documented					
Lepidochelys kempii	Kemp's Ridley Sea Turtle	G1	S1	E	FE
Likely					
Trichechus manatus	West Indian Manatee	G2	S2	T	FT
Potential					
Acipenser oxyrinchus desotoi	Gulf Sturgeon	G3T2T3	S2?	T	FT
Ardea herodias occidentalis	Great White Heron	G5T2	S2	N	N
Caracara cheriway	Crested Caracara	G5	S2	T	FT
Charadrius melodus	Piping Plover	G3	S2	T	FT
Drymarchon couperi	Eastern Indigo Snake	G3	S3	T	FT
Eragrostis pectinacea var. tracyi	Sanibel lovegrass	G5T1	S1	N	E
Eretmochelys imbricata	Hawksbill Sea Turtle	G3	S1	E	FE
Harrisia aboriginum	aboriginal prickly apple	G1	S1	E	E
Mustela frenata peninsulae	Florida Long-tailed Weasel	G5T3?	S3?	N	N
Rallus longirostris scottii	Florida Clapper Rail	G5T3?	S3?	N	N
Sciurus niger niger	Southeastern Fox Squirrel	G5T5	S3	N	N
Setophaga discolor paludicola	Florida Prairie Warbler	G5T3	S3	N	N

Definitions: *Documented - Rare species and natural communities documented on or near this site.*
Documented-Historic - Rare species and natural communities documented, but not observed/reported within the last twenty years.
Likely - Rare species and natural communities likely to occur on this site based on suitable habitat and/or known occurrences in the vicinity.
Potential - This site lies within the known or predicted range of the species listed.

Appendix G
Species Protection Measures/Supplemental Specifications

PROTECTED SPECIES CONSTRUCTION CONDITIONS, NOAA FISHERIES SOUTHEAST REGIONAL OFFICE

The action agency and any permittee shall comply with the following construction conditions for protected species under the jurisdiction of NOAA Fisheries Southeast Regional Office (SERO) Protected Resources Division (PRD):[1]

Protected Species Sightings–The action agency and any permittee shall ensure that all personnel associated with the project are instructed about the potential presence of species protected under the Endangered Species Act (ESA) and the Marine Mammal Protection Act (MMPA). All on-site project personnel are responsible for observing water-related activities for the presence of protected species. All personnel shall be advised that there are civil and criminal penalties for harming, harassing, or killing listed species and all marine mammals. To determine which protected species and critical habitat may be found in the transit area, please review the relevant marine mammal and ESA-listed species at Find A Species (https://www.fisheries.noaa.gov/find-species) and the consultation documents that have been completed for the project.

1. **Equipment**–Turbidity curtains, if used, shall be made of material in which protected species cannot become entangled and be regularly monitored to avoid protected species entrapment. All turbidity curtains and other in-water equipment shall be properly secured with materials that reduce the risk of protected species entanglement and entrapment.

    a. In-water lines (rope, chain, and cable, including the lines to secure turbidity curtains) shall be stiff, taut, and non-looping. Examples of such lines are heavy metal chains or heavy cables that do not readily loop and tangle. Flexible in-water lines, such as nylon rope or any lines that could loop or tangle, shall be enclosed in a plastic or rubber sleeve/tube to add rigidity and prevent the line from looping and tangling. In all instances, no excess line shall be allowed in the water. All anchoring shall be in areas free from hardbottom and seagrass.

    b. Turbidity curtains and other in-water equipment shall be placed in a manner that does not entrap protected species within the project area and minimizes the extent and duration of their exclusion from the project area.

    c. Turbidity barriers shall be positioned in a way that minimizes the extent and duration of protected species exclusion from important habitat (e.g. critical habitat, hardbottom, seagrass) in the project area.

2. **Operations**–For construction work that is generally stationary (e.g., barge-mounted equipment dredging a berth or section of river, or shore-based equipment extending into the water):

    a. Operations of moving equipment shall cease if a protected species is observed within 150 feet of operations.

[1] Manatees are managed under the jurisdiction of the U.S. Fish and Wildlife Service.

b. Activities shall not resume until the protected species has departed the project area of its own volition (e.g., species was observed departing or 20 minutes have passed since the animal was last seen in the area).

3. **Vessels**–For projects requiring vessels, the action agency, and any permittee shall ensure conditions in the Vessel Strike Avoidance Measures are implemented as part of the project/permit issuance (https://www.fisheries.noaa.gov/southeast/consultations/regulations-policies-and-guidance).

4. **Consultation Reporting Requirements–**Any interaction with a protected species shall be reported immediately to NOAA Fisheries SERO PRD and the local authorized stranding/rescue organization.

   To report to NOAA Fisheries SERO PRD, send an email to takereport.nmfsser@noaa.gov. Please include the species involved, the circumstances of the interaction, the fate and disposition of the species involved, photos (if available), and contact information for the person who can provide additional details if requested. Please include the project's Environmental Consultation Organizer (ECO) number and project title in the subject line of email reports.

   To report the interaction to the local stranding/rescue organization, please see the following website for the most up to date information for reporting sick, injured, or dead protected species:

   Reporting Violations–To report an ESA or MMPA violation, call the NOAA Fisheries Enforcement Hotline. This hotline is available 24 hours a day, 7 days week for anyone in the United States.

   NOAA Fisheries Enforcement Hotline (800) 853-1964

5. **Additional Conditions–**Any special construction conditions, required of your specific project, outside these general conditions, if applicable, will be addressed in the project consultation and must also be complied with.

For additional information, please contact NOAA Fisheries SERO PRD at:
NOAA Fisheries Service
Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701
Tel: (727) 824-5312
Visit us on the web at Protected Marine Life in the Southeast
(https://www.fisheries.noaa.gov/region/southeast#protected-marine-life)

Revised: May 2021

VESSEL STRIKE AVOIDANCE MEASURES, NOAA FISHERIES SOUTHEAST REGIONAL OFFICE

Background

Vessel strikes can injure or kill species protected under the Endangered Species Act (ESA) and the Marine Mammal Protection Act (MMPA). NOAA Fisheries Southeast Regional Office (SERO) Protected Resources Division (PRD) recommends implementing the following identification and avoidance measures to reduce the risk of vessel strikes and disturbance from vessels to protected species under our jurisdiction.[1]

Protected Species Sightings

All vessel operators and crews should be informed about the potential presence of species protected under the ESA and the MMPA and any critical habitat in a vessel transit area. All vessels should have personnel onboard responsible for observing for the presence of protected species. All personnel should be advised that there are civil and criminal penalties for harming, harassing, or killing listed species and all marine mammals. To determine which protected species and critical habitat may be found in the transit area, please review the relevant marine mammal and ESA-listed species at Find A Species (https://www.fisheries.noaa.gov/find-species) and any ESA Section 7 consultation documents if applicable.

Vessel Strike Avoidance

The following measures should be taken when they are consistent with safe navigation to avoid causing injury or death of a protected species:

1. Operate at the minimum safe speed when transiting and maintain a vigilant watch for protected species to avoid striking them. Even with a vigilant watch, most marine protected species are extremely difficult to see from a boat or ship, and you cannot rely on detecting them visually and then taking evasive action. The most effective way to avoid vessel strikes is to travel at a slow, safe speed. Whenever possible, assign a designated individual to observe for protected species and limit vessel operation to only daylight hours.

2. Follow deep-water routes (e.g., marked channels) whenever possible.

3. Operate at “Idle/No Wake” speeds in the following circumstances:
    a. while in any project construction areas
    b. while in water depths where the draft of the vessel provides less than four feet of clearance from the bottom, or
    c. in all depths after a protected species has been observed in and has recently departed the area.

[1] Manatees are managed under the jurisdiction of the U.S. Fish and Wildlife Service.

4. When a protected species is sighted, attempt to maintain a distance of 150 feet or greater between the animal and the vessel. Reduce speed and avoid abrupt changes in direction until the animal(s) has left the area.

5. When dolphins are bow- or wake-riding, maintain course and speed as long as it is safe to do so or until the animal(s) leave the vicinity of the vessel.

6. If a whale is sighted in the vessel's path or within 300 feet from the vessel, reduce speed and shift the engine to neutral. Do not engage the engines until the animals are clear of the area. *Please see below for additional requirements for North Atlantic right whales.*

7. If a whale is sighted farther than 300 feet from the vessel, maintain a distance of 300 feet or greater between the whale and the vessel and reduce speed to 10 knots or less. *Please see below for additional requirements for North Atlantic right whales.*

Injured or Dead Protected Species Reporting
Vessel crews should report sightings of any injured or dead protected species immediately regardless of whether the injury or death is caused by your vessel. Please see How to Report a Stranded or Injured Marine Animal (https://www.fisheries.noaa.gov/report) for the most up to date information for reporting injured or dead protected species.

If the injury or death is caused by your vessel, also report the interaction to NOAA Fisheries SERO PRD at takereport.nmfsser@noaa.gov. Please include the species involved, the circumstances of the interaction, the fate and disposition of the animal involved, photos (if available), and contact information for the person who can provide additional details if requested. Please include the project's Environmental Consultation Organizer (ECO) number and project title in the subject line of email reports if a consultation has been completed.

Reporting Violations
To report any suspected ESA or MMPA violation, call the NOAA Fisheries Enforcement Hotline. This hotline is available 24 hours a day, 7 days week for anyone in the United States.

NOAA Fisheries Enforcement Hotline: (800) 853-1964

Additional Transit and Reporting Requirements for North Atlantic Right Whales

1. Federal regulation prohibits approaching or remaining within 500 yards of a North Atlantic right whale (50 CFR 224.103 (c)). All whales sighted within North Atlantic right whale critical habitat should be assumed to be right whales. Please be aware and follow restrictions for all Seasonal Management Areas along the U.S. east coast. These areas have vessel speed restrictions to reduce vessel strikes risks to migrating or feeding whales. More information can be found at Reducing Vessel Strikes to North Atlantic Right Whales (https://www.fisheries.noaa.gov/national/endangered-species-conservation/reducing-vessel-strikes-north-atlantic-right-whales).

2. Ships greater than 300 gross tons entering the WHALESOUTH reporting area are required to report to a shore-based station. For more information on reporting procedures consult 33 CFR Part 169, the Coast Pilot, or at Reducing Vessel Strikes to North Atlantic

Right Whales (https://www.fisheries.noaa.gov/national/endangered-species-conservation/reducing-vessel-strikes-north-atlantic-right-whales).

3. From November through April, vessels approaching/departing Florida ports of Jacksonville and Fernandina Beach as well as Brunswick Harbor, Georgia are STRONGLY RECOMMENDED to use Two-Way Routes displayed on nautical charts. More information on Compliance with the Right Whale Ship Strike Reduction Rule can be found at (https://media.fisheries.noaa.gov/2021-06/compliance_guide_for_right_whale_ship_strike_reduction.pdf)

4. Mariners shall check with various communication media for general information regarding avoiding vessel strikes and specific information regarding North Atlantic right whale sighting locations. These include NOAA weather radio, U.S. Coast Guard Broadcast to Mariners, Local Notice to Mariners, and NAVTEX. Commercial mariners calling on United States ports should view the most recent version of the NOAA/USCG produced training CD entitled "A Prudent Mariner's Guide to Right Whale Protection" (contact the NOAA Fisheries SERO, Protected Resources Division for more information regarding the CD).

5. Injured, dead, or entangled right whales should be immediately reported to the U.S. Coast Guard via VHF Channel 16 and the NOAA Fisheries Southeast Marine Mammal Stranding Hotline at (877) WHALE HELP (877-942-5343).

For additional information, please contact NOAA Fisheries SERO PRD at:
NOAA Fisheries Service
Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701
Visit us on the web at Protected Marine Life in the Southeast
(https://www.fisheries.noaa.gov/region/southeast#protected-marine-life)

Revised: May 2021

STANDARD MANATEE CONDITIONS FOR IN-WATER WORK

2011

The permittee shall comply with the following conditions intended to protect manatees from direct project effects:

a. All personnel associated with the project shall be instructed about the presence of manatees and manatee speed zones, and the need to avoid collisions with and injury to manatees. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act, the Endangered Species Act, and the Florida Manatee Sanctuary Act.

b. All vessels associated with the construction project shall operate at "Idle Speed/No Wake" at all times while in the immediate area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.

c. Siltation or turbidity barriers shall be made of material in which manatees cannot become entangled, shall be properly secured, and shall be regularly monitored to avoid manatee entanglement or entrapment. Barriers must not impede manatee movement.

d. All on-site project personnel are responsible for observing water-related activities for the presence of manatee(s). All in-water operations, including vessels, must be shutdown if a manatee(s) comes within 50 feet of the operation. Activities will not resume until the manatee(s) has moved beyond the 50-foot radius of the project operation, or until 30 minutes elapses if the manatee(s) has not reappeared within 50 feet of the operation. Animals must not be herded away or harassed into leaving.

e. Any collision with or injury to a manatee shall be reported immediately to the Florida Fish and Wildlife Conservation Commission (FWC) Hotline at 1-888-404-3922. Collision and/or injury should also be reported to the U.S. Fish and Wildlife Service in Jacksonville (1-904-731-3336) for north Florida or in Vero Beach (1-772-562-3909) for south Florida, and emailed to FWC at ImperiledSpecies@myFWC.com.

f. Temporary signs concerning manatees shall be posted prior to and during all in-water project activities. All signs are to be removed by the permittee upon completion of the project. Temporary signs that have already been approved for this use by the FWC must be used. One sign which reads *Caution: Boaters* must be posted. A second sign measuring at least 8½ " by 11" explaining the requirements for "Idle Speed/No Wake" and the shut down of in-water operations must be posted in a location prominently visible to all personnel engaged in water-related activities. These signs can be viewed at http://www.myfwc.com/WILDLIFEHABITATS/manatee_sign_vendors.htm. Questions concerning these signs can be forwarded to the email address listed above.

CAUTION: MANATEE HABITAT

All project vessels

IDLE SPEED / NO WAKE

When a manatee is within 50 feet of work
all in-water activities must

SHUT DOWN

Report any collision with or injury to a manatee:

Wildlife Alert:

1-888-404-FWCC(3922)

cell *FWC or #FWC

APPENDIX C: Additional Conditions for In-water Activities in Manatee Habitat, March 2011

Note: These conditions may be subject to revision at any time. It is our intention that the most recent version of these conditions will be utilized during the evaluation of the permit application.

Depending on the work proposed and the location, further protective measures may be required in addition to the standard manatee conditions (Appendix B). Additional information regarding: (1) dredging techniques/methods; (2) planned start and end times; (3) the amount of material to be removed; (4) the specific project location; (5) spoil disposal location; and (6) a current submerged vegetation survey (documenting the presence/absence of vegetation and the extent of any project-related impacts, if any, to submerged aquatic vegetation occurring on-site) should be provided to expedite the review process.

The additional protective measures that may be required include (but are not limited to):

- Impacts to submerged aquatic vegetation (SAV) must be avoided. If impacts have been avoided to the greatest extent practicable, impacts must be minimized (see Appendix E and Appendix F for minimizing impacts after avoidance has taken place).

- For dredging projects that do not impact SAV and involve less than 50,000 cubic yards, additional measures outlined in the 2011 Manatee Key shall be followed. For dredging projects involving more than 50,000 cubic yards, additional measures may be necessary. Areas not identified in the Key may also require special conditions.

- In-water activities may need to be conducted at times of the year when manatees are not likely to be found in the project area. In particular, activities shall not occur in or near manatee aggregation areas or important manatee areas when manatees are present.

- Dedicated manatee observers, whose sole responsibility is to watch for manatees, may be needed and must be positioned on each vessel to watch for manatees. The observer must be experienced in manatee observation techniques and assist direct dredging activity-related personnel with complying with the standard manatee conditions (Appendix B). The manatee observer must be on site during all in-water activities.

- If observers are required, but conditions (weather, heavy currents, etc.) are such that manatees cannot be seen within 50 to 100 feet, in-water activity shall not be conducted.

- In areas of high manatee use, in-water activities may not be conducted at night, particularly clamshell dredging.

- Movement of work boats and barges should be minimized at night.

APPENDIX C: Additional Conditions for In-water Activities in Manatee Habitat, March 2011

- All watercraft-access facilities that accommodate large vessels, particularly those 100 feet or more in length, shall provide a fendering system to reduce the probability of crushing manatees between wharves and bulkheads or between vessels moored together. Fenders, mooring buoys, or cantilevered docks must provide a minimum standoff distance of 4 feet (for fenders and buoys, under maximum compression).

SARASOTA COUNTY
AND MANATEE COUNTY
MANATEE PROTECTION ZONES
68C-22.026 F.A.C.
DECEMBER 2002

For information please call or write to:
Fish and Wildlife Conservation Commission
Office of Environmental Services
Bureau of Protected Species Management
620 South Meridian Street, OES-BPS
Tallahassee FL 32399-1600
TEL:(850) 922-4330 FAX:(850) 922-4338 SUNCOM: 292-4330

LEGEND


IDLE SPEED, CHANNEL INCLUDED


SLOW SPEED, CHANNEL INCLUDED


NO ENTRY (November 15 - March 15)

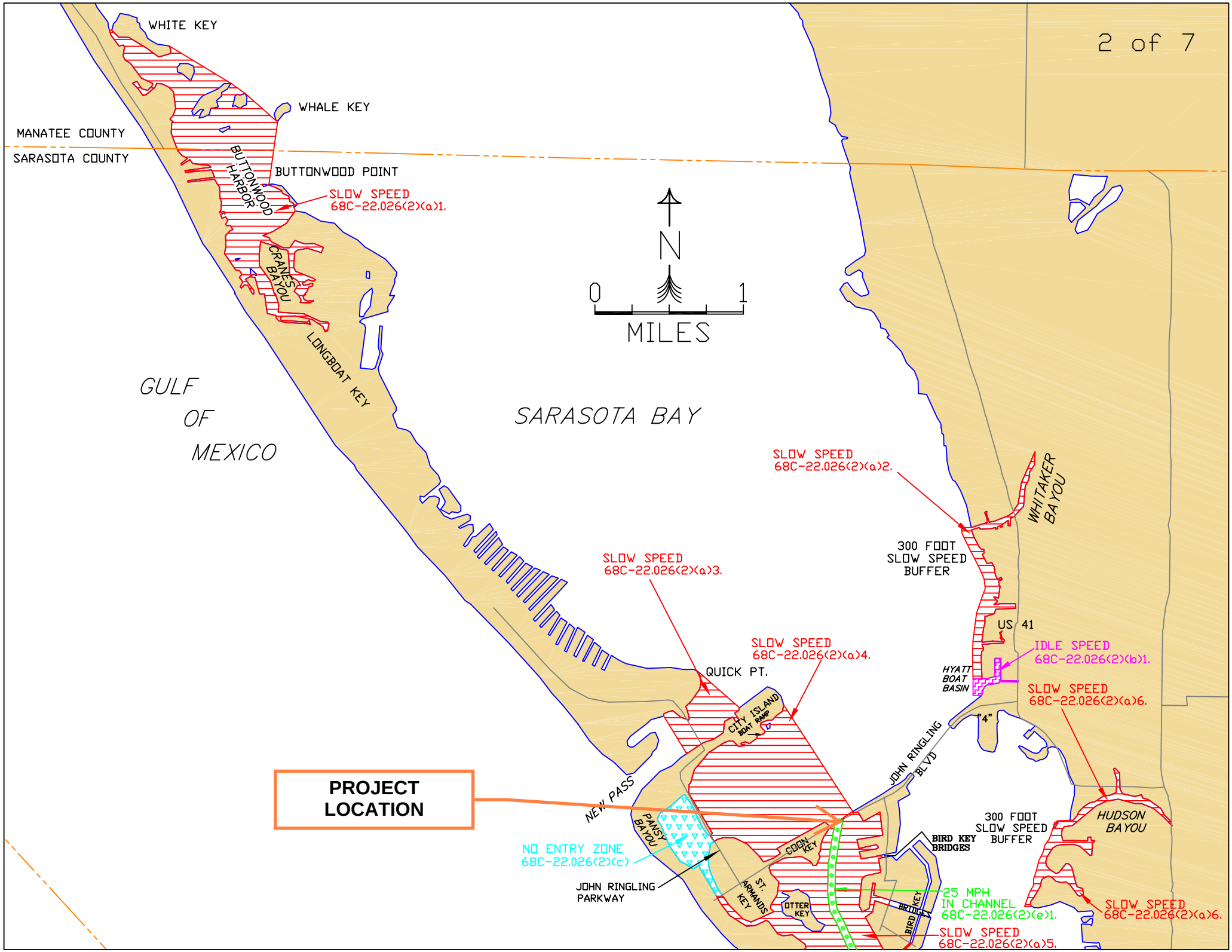

NO ENTRY, RESIDENTS ONLY


25 MPH


35 MPH


25 MPH IN CHANNEL

Date Printed: February 11, 2003


WHITE KEY
WHALE KEY
MANATEE COUNTY
SARASOTA COUNTY
BUTTONWOOD HARBOR
BUTTONWOOD POINT
SLOW SPEED
68C-22.026(2)(a)1.
CRANES BAYOU
LONGBOAT KEY
N
0
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MILES
GULF
OF
MEXICO
SARASOTA BAY
SLOW SPEED
68C-22.026(2)(a)2.
WHITAKER BAYOU
300 FOOT
SLOW SPEED
BUFFER
SLOW SPEED
68C-22.026(2)(a)3.
US 41
SLOW SPEED
68C-22.026(2)(a)4.
IDLE SPEED
68C-22.026(2)(b)1.
QUICK PT.
HYATT
BOAT
BASIN
SLOW SPEED
68C-22.026(2)(a)6.
CITY ISLAND
BOAT RAMP
"4"
JOHN RINGLING
BLVD
PROJECT
LOCATION
NEW PASS
PANSY
BAYOU
300 FOOT
SLOW SPEED
BUFFER
HUDSON
BAYOU
NO ENTRY ZONE
68C-22.026(2)(c)
COON
KEY
BIRD KEY
BRIDGES
JOHN RINGLING
PARKWAY
ST.
ARMANDS
KEY
OTTER
KEY
BIRD
KEY
25 MPH
IN CHANNEL
68C-22.026(2)(e)1.
SLOW SPEED
68C-22.026(2)(a)6.
SLOW SPEED
68C-22.026(2)(a)5.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Florida Ecological Services Office
1339 20th Street
Vero Beach, Florida 32960

May 18, 2010

Donnie Kinard
Chief, Regulatory Division
Jacksonville District Corps of Engineers
Post Office Box 4970
Jacksonville, Florida 32232-0019

Service Federal Activity Code: 41420-2007-FA-1494
Service Consultation Code: 41420-2007-I-0964
Subject: South Florida Programmatic Concurrence
Species: Wood Stork

Dear Mr. Kinard:

This letter addresses minor errors identified in our January 25, 2010, wood stork key and as such, supplants the previous key. The key criteria and wood stork biomass foraging assessment methodology have not been affected by these minor revisions.

The Fish and Wildlife Service's (Service) South Florida Ecological Services Office (SFESO) and the U.S. Army Corps of Engineers Jacksonville District (Corps) have been working together to streamline the consultation process for federally listed species associated with the Corps' wetland permitting program. The Service provided letters to the Corps dated March 23, 2007, and October 18, 2007, in response to a request for a multi-county programmatic concurrence with a criteria-based determination of "may affect, not likely to adversely affect" (NLAA) for the threatened eastern indigo snake (*Drymarchon corais couperi*) and the endangered wood stork (*Mycteria americana*) for projects involving freshwater wetland impacts within specified Florida counties. In our letters, we provided effect determination keys for these two federally listed species, with specific criteria for the Service to concur with a determination of NLAA.

The Service has revisited these keys recently and believes new information provides cause to revise these keys. Specifically, the new information relates to foraging efficiencies and prey base assessments for the wood stork and permitting requirements for the eastern indigo snake. This letter addresses the wood stork key and is submitted in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act) (87 Stat. 884; 16 U.S.C. 1531 *et seq.*). The eastern indigo snake key will be provided in a separate letter.

Wood stork

Habitat

The wood stork is primarily associated with freshwater and estuarine habitats that are used for nesting, roosting, and foraging. Wood storks typically construct their nests in medium to tall

trees that occur in stands located either in swamps or on islands surrounded by relatively broad expanses of open water (Ogden 1991, 1996; Rodgers et al. 1996). Successful colonies are those that have limited human disturbance and low exposure to land-based predators. Nesting colonies protected from land-based predators are characterized as those surrounded by large expanses of open water or where the nest trees are inundated at the onset of nesting and remain inundated throughout most of the breeding cycle. These colonies have water depths between 0.9 and 1.5 meters (3 and 5 feet) during the breeding season.

Successful nesting generally involves combinations of average or above-average rainfall during the summer rainy season and an absence of unusually rainy or cold weather during the winter-spring breeding season (Kahl 1964; Rodgers et al. 1987). This pattern produces widespread and prolonged flooding of summer marshes, which maximize production of freshwater fishes, followed by steady drying that concentrate fish during the season when storks nest (Kahl 1964). Successful nesting colonies are those that have a large number of foraging sites. To maintain a wide range of foraging sites, a variety of wetland types should be present, with both short and long hydroperiods. The Service (1999) describes a short hydroperiod as a 1 to 5-month wet/dry cycle, and a long hydroperiod as greater than 5 months. During the wet season, wood storks generally feed in the shallow water of the short-hydroperiod wetlands and in coastal habitats during low tide. During the dry season, foraging shifts to longer hydroperiod interior wetlands as they progressively dry-down (though usually retaining some surface water throughout the dry season).

Wood storks occur in a wide variety of wetland habitats. Typical foraging sites for the wood stork include freshwater marshes and stock ponds, shallow, seasonally flooded roadside and agricultural ditches, narrow tidal creeks and shallow tidal pools, managed impoundments, and depressions in cypress heads and swamp sloughs. Because of their specialized feeding behavior, wood storks forage most effectively in shallow-water areas with highly concentrated prey. Through tactolocation, or grope feeding, wood storks in south Florida feed almost exclusively on fish between 2 and 25 centimeters [cm] (1 and 10 inches) in length (Ogden et al. 1976). Good foraging conditions are characterized by water that is relatively calm, uncluttered by dense thickets of aquatic vegetation, and having a water depth between 5 and 38 cm (5 and 15 inches) deep, although wood storks may forage in other wetlands. Ideally, preferred foraging wetlands would include a mosaic of emergent and shallow open-water areas. The emergent component provides nursery habitat for small fish, frogs, and other aquatic prey and the shallow, open-water areas provide sites for concentration of the prey during seasonal dry-down of the wetland.

Conservation Measures

The Service routinely concurs with the Corps' "may affect, not likely to adversely affect" determination for individual project effects to the wood stork when project effects are insignificant due to scope or location, or if assurances are given that wetland impacts have been avoided, minimized, and adequately compensated such that there is no net loss in foraging potential. We utilize our *Habitat Management Guidelines for the Wood Stork in the Southeast Region* (Service 1990) (Enclosure 1) (HMG) in project evaluation. The HMG is currently under review and once final will replace the enclosed HMG. There is no designated critical habitat for the wood stork.

The SFESO recognizes a 29.9 kilometer [km] (18.6-mile) core foraging area (CFA) around all known wood stork colonies in south Florida. Enclosure 2 (to be updated as necessary) provides locations of colonies and their CFAs in south Florida that have been documented as active within the last 10 years. The Service believes loss of suitable wetlands within these CFAs may reduce foraging opportunities for the wood stork. To minimize adverse effects to the wood stork, we recommend compensation be provided for impacts to foraging habitat. The compensation should consider wetland type, location, function, and value (hydrology, vegetation, prey utilization) to ensure that wetland functions lost due to the project are adequately offset. Wetlands offered as compensation should be of the same hydroperiod and located within the CFAs of the affected wood stork colonies. The Service may accept, under special circumstances, wetland compensation located outside the CFAs of the affected wood stork nesting colonies. On occasion, wetland credits purchased from a "Service Approved" mitigation bank located outside the CFAs could be acceptable to the Service, depending on location of impacted wetlands relative to the permitted service area of the bank, and whether or not the bank has wetlands having the same hydroperiod as the impacted wetland.

In an effort to reduce correspondence in effect determinations and responses, the Service is providing the Wood Stork Effect Determination Key below. If the use of this key results in a Corps determination of "no effect" for a particular project, the Service supports this determination. If the use of this Key results in a determination of NLAA, the Service concurs with this determination[1]. This Key is subject to revisitation as the Corps and Service deem necessary.

The Key is as follows:

A. Project within 0.76 km (0.47 mile)[2] of an active colony site[3] ..... "*may affect*[4]"

Project impacts Suitable Foraging Habitat (SFH)[5] at a location greater than 0.76 km (0.47 mile) from a colony site..... ....."*go to* B"

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[1] With an outcome of "no effect" or "NLAA" as outlined in this key, and the project has less than 20.2 hectares (50 acres) of wetland impacts, the requirements of section 7 of the Act are fulfilled for the wood stork and no further action is required. For projects with greater than 20.2 hectares (50 acres) of wetland impacts, written concurrence of NLAA from the Service is necessary.

[2] Within the secondary zone (the average distance from the border of a colony to the limits of the secondary zone is 0.76 km (2,500 feet, or 0.47 mi).

[3] An active colony is defined as a colony that is currently being used for nesting by wood storks or has historically over the last 10 years been used for nesting by wood storks.

[4] Consultation may be concluded informally or formally depending on project impacts.

[5] Suitable foraging habitat (SFH) includes wetlands that typically have shallow-open water areas that are relatively calm and have a permanent or seasonal water depth between 5 to 38 cm (2 to 15 inches) deep. Other shallow non-wetland water bodies are also SFH. SFH supports and concentrates, or is capable of supporting and concentrating small fish, frogs, and other aquatic prey. Examples of SFH include, but are not limited to freshwater marshes, small ponds, shallow, seasonally flooded roadside or agricultural ditches, seasonally flooded pastures, narrow tidal creeks or shallow tidal pools, managed impoundments, and depressions in cypress heads and swamp sloughs.

Project does not affect SFH……..…..*"no effect[1]".*

B. Project impact to SFH is less than 0.20 hectare (one-half acre)[6]……..……*NLAA[1]"*

Project impact to SFH is greater in scope than 0.20 hectare (one-half acre)....……*go to* C

C. Project impacts to SFH not within the CFA (29.9 km, 18.6 miles) of a colony site ……..…….…….…..……*go to* D

Project impacts to SFH within the CFA of a colony site …….…..…...…….*go to* E

D. Project impacts to SFH have been avoided and minimized to the extent practicable; compensation (Service approved mitigation bank or as provided in accordance with Mitigation Rule 33 CFR Part 332) for unavoidable impacts is proposed in accordance with the CWA section 404(b)(1) guidelines; and habitat compensation replaces the foraging value matching the hydroperiod[7] of the wetlands affected and provides foraging value similar to, or higher than, that of impacted wetlands. See Enclosure 3 for a detailed discussion of the hydroperiod foraging values, an example, and further guidance[8]…….. *NLAA[1]"*

Project not as above.……... *"may affect[4]"*

E. Project provides SFH compensation in accordance with the CWA section 404(b)(1) guidelines and is not contrary to the HMG; habitat compensation is within the appropriate CFA or within the service area of a Service-approved mitigation bank; and habitat compensation replaces foraging value, consisting of wetland enhancement or restoration matching the hydroperiod[7] of the wetlands affected, and provides foraging value similar

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[6] On an individual basis, SFH impacts to wetlands less than 0.20 hectare (one-half acre) generally will not have a measurable effect on wood storks, although we request that the Corps require mitigation for these losses when appropriate. Wood storks are a wide ranging species, and individually, habitat change from impacts to SFH less than one-half acre are not likely to adversely affect wood storks. However, collectively they may have an effect and therefore regular monitoring and reporting of these effects are important.

[7] Several researchers (Flemming et al. 1994; Ceilley and Bortone 2000) believe that the short hydroperiod wetlands provide a more important pre-nesting foraging food source and a greater early nestling survivor value for wood storks than the foraging base (grams of fish per square meter) than long hydroperiod wetlands provide. Although the short hydroperiod wetlands may provide less fish, these prey bases historically were more extensive and met the foraging needs of the pre-nesting storks and the early-age nestlings. Nest productivity may suffer as a result of the loss of short hydroperiod wetlands. We believe that most wetland fill and excavation impacts permitted in south Florida are in short hydroperiod wetlands. Therefore, we believe that it is especially important that impacts to these short hydroperiod wetlands within CFAs are avoided, minimized, and compensated for by enhancement/restoration of short hydroperiod wetlands.

[8] For this Key, the Service requires an analysis of foraging prey base losses and enhancements from the proposed action as shown in the examples in Enclosure 3 for projects with greater than 2.02 hectares (5 acres) of wetland impacts. For projects with less than 2.02 hectares (5 acres) of wetland impacts, an individual foraging prey base analysis is not necessary although type for type wetland compensation is still a requirement of the Key.

to, or higher than, that of impacted wetlands. See Enclosure 3 for a detailed discussion of the hydroperiod foraging values, an example, and further guidance[8]..... *"NLAA[1]"*

Project does not satisfy these elements ..... *"may affect[4]"*

This Key does not apply to Comprehensive Everglades Restoration Plan projects, as they will require project-specific consultations with the Service.

Monitoring and Reporting Effects

For the Service to monitor cumulative effects, it is important for the Corps to monitor the number of permits and provide information to the Service regarding the number of permits issued where the effect determination was: "may affect, not likely to adversely affect." We request that the Corps send us an annual summary consisting of: project dates, Corps identification numbers, project acreages, project wetland acreages, and project locations in latitude and longitude in decimal degrees.

Thank you for your cooperation and effort in protecting federally listed species. If you have any questions, please contact Allen Webb at extension 246.

Sincerely yours,

Paul Souza
Field Supervisor
South Florida Ecological Services Office

Enclosures

cc: w/enclosures (electronic only)
Corps, Jacksonville, Florida (Stu Santos)
EPA, West Palm Beach, Florida (Richard Harvey)
FWC, Vero Beach, Florida (Joe Walsh)
Service, Jacksonville, Florida (Billy Brooks)

LITERATURE CITED

Ceilley, D.W. and S.A. Bortone. 2000. A survey of freshwater fishes in the hydric flatwoods of flint pen strand, Lee County, Florida. Proceedings of the 27th Annual Conference on Ecosystems Restoration and Creation, 70-91. Hillsborough Community College; Hillsborough County, Florida.

Flemming, D.M., W.F. Wolff, and D.L. DeAngelis. 1994. Importance of landscape heterogeneity to wood storks. Florida Everglades Management 18: 743-757.

Kahl, M.P., Jr. 1964. Food ecology of the wood stork (*Mycteria americana*) in Florida. Ecological Monographs 34:97-117.

Ogden, J.C. 1991. Nesting by wood storks in natural, altered, and artificial wetlands in central and northern Florida. Colonial Waterbirds 14:39-45.

Ogden, J.C., J.A. Kushlan, and J.T. Tilmant. 1976. Prey selectivity by the wood stork. Condor 78(3):324-330.

Ogden, J.C. 1996. Wood Stork *in* J.A. Rodgers, H. Kale II, and H.T. Smith, eds. Rare and endangered biota of Florida. University Press of Florida; Gainesville, Florida.

Rodgers, J.A. Jr., A.S. Wenner, and S.T. Schwikert. 1987. Population dynamics of wood storks in northern and central Florida, USA. Colonial Waterbirds 10:151-156.

Rodgers, J.A., Jr., S.T. Schwikert, and A. Shapiro-Wenner. 1996. Nesting habitat of wood storks in north and central Florida, USA. Colonial Waterbirds 19:1-21.

U.S. Fish and Wildlife Service. 1990. Habitat management guidelines for the wood stork in the southeast region. Prepared by John C. Ogden for the Southeast Region U.S. Fish and Wildlife Service; Atlanta, Georgia.

U.S. Fish and Wildlife Service. 1999. South Florida multi-species recovery plan. Fish and Wildlife Service; Atlanta, Georgia. Available from: http://verobeach.fws.gov/Programs/Recovery/vbms5.html.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Florida Ecological Services Office
1339 20th Street
Vero Beach, Florida 32960
October 22, 2019

Shawn Zinszer
U.S. Army Corps of Engineers
Post Office Box 4970
Jacksonville, Florida 32232-0019

Subject: Consultation Key for the Florida bonneted bat; 04EF2000-2014-I-0320-R001

Dear Mr. Zinszer:

This letter replaces the December 2013, Florida bonneted bat guidelines provided to the U.S. Army Corps of Engineers (Corps) to assist your agency with effect determinations within the range of the Florida bonneted bat (*Eumops floridanus*). This October 2019 revision supersedes all prior versions. The enclosed *Florida Bonneted Bat Consultation Guidelines* and incorporated *Florida Bonneted Bat Consultation Key* (Key) are provided pursuant to the U.S. Fish and Wildlife Service's (Service) authorities under the Endangered Species Act of 1973, as amended (Act) (87 Stat. 884; 16 U.S.C.1531 *et seq.*). This letter, guidelines, and Key have been assigned Service Consultation Code: 41420- 04EF2000-2014-I-0320-R001.

The purpose of the guidelines and Key is to aid the Corps (or other Federal action agency) in making appropriate effect determinations for the Florida bonneted bat under section 7 of the Act, and streamline informal consultation with the Service for the Florida bonneted bat when the proposed action is consistent with the Key. There is no requirement to use the Key. There will be cases when the use of the Key is not appropriate. These include, but are not limited to: where project specific information is outside of the scope of the Key, applicants do not wish to implement the identified survey or best management practices, or if there is new biological information about the species. In these cases, we recommend the Corps (or other Federal action agency) initiate traditional consultation pursuant to section 7 of the Act, and identify that consultation is being requested outside of the Key.

This Key uses type of habitat (*i.e*, roosting or foraging), survey results, and project size as the basis for making determinations of "may affect, but is not likely to adversely affect" (MANLAA) and "may affect, and is likely to adversely affect" (LAA). The Key is structured to focus on the type(s) of habitat that will be affected by a project. When proposed project areas provide features that could support roosting of Florida bonneted bats, it is considered roosting habitat. If evaluation of roosting habitat determines that roosting is not likely, then the area is subsequently evaluated for its value to the species as foraging habitat.

Roosting habitat

The guidelines describe the features of roosting habitat. When a project is proposed in roosting habitat, the likelihood that roosting is occurring is evaluated through surveys (*i.e.*, full acoustic or limited roost). When a roost is expected and the proposed activity will affect that roost, formal consultation is required. This is because the proposed activity is expected to take individuals through the destruction of the roost and the appropriate determination is that the project may affect, and is likely to adversely affect (LAA) the species. When roosting is expected, but all impacts to the roost can be avoided, and only foraging habitat (without roost structure) will be affected, the Service finds that it is reasonable to conclude that the proposed action is not likely to impair feeding, breeding, or sheltering. Thus, the proposed project may affect, but is not likely to affect the Florida bonneted bat (MANLAA).

The exception to this logic path is if the proposed action will affect more than 50 acres of foraging habitat in proximity to the roost. Under this scenario, we anticipate that the loss of the larger amount of foraging habitat near the roost could significantly impair feeding of young and overall breeding (*i.e.*, LAA). Consequently, these projects would require formal consultation to analyze the effect of the incidental take.

If the roost surveys demonstrate that roosting is not likely, the project is then evaluated for its effects to foraging habitat. Our evaluation of these actions is described below. The exception is for projects less than or equal to 5 acres if a limited roost survey is conducted. Limited roost surveys rely on peeping and visual surveys to determine whether roosting is likely. On these small projects, this survey strategy is believed to be more economical and is considered a reasonable effort to evaluate the potential for roosting. The Service acknowledges that this approach is less reliable in evaluating the likelihood of roosting when it is not combined with acoustic surveys. Therefore, when limited roost surveys are conducted for projects that are less than or equal to 5 acres in size and the determination is that roosting is not likely, we conclude that the proposed project may affect, but is not likely to adversely affect the species (MANLAA).

Foraging habitat

The guidelines describe the features of foraging habitat. Data informing the home range size of the Florida bonneted bats is limited. Global Positioning System (GPS) and radio-telemetry data for Florida bonneted bats documents that they move large distances and likely have large home ranges. Data from recovered GPS satellite tags on Florida bonneted bats tagged at Babcock-Webb Wildlife Management Area (BWWMA) found the maximum distance detected from a capture site was 24.2 mi (38.9 km); the greatest path length travelled in a single night was 56.3 mi (90.6 km) (Ober 2016; Webb 2018a-b). At BWWMA, researchers found that most individual locations were within one mile of the roost (point of capture) (Ober 2015). Additional data collected during the month of December documented the mean maximum distance Florida bonneted bats (n=8) with tags traveled from the roost was 9.5 mi (Webb 2018b).

The Service recognizes that the movement information comes from only one site (BWWMA and vicinity), and data are from small numbers (n=20) of tagged individuals for only short periods of time (Webb 2018a-b). We expect that across the Florida bonneted bat's range differences in

habitat quality, prey availability, and other factors will result in variable habitat use and home range sizes between locations. Foraging distances and home range sizes in high quality habitats are expected to be smaller while foraging distances and home range sizes in low quality habitat would be expected to be larger. Regardless, we use these studies as our best available information to evaluate when changes to foraging habitat may have an effect on the species ability to feed, breed, and shelter and subsequently result in incidental take. When considering where most of the nightly activity was observed, we calculate a foraging area centered on a roost with a 1 mile radius would include approximately 2,000 acres, and a foraging area centered on a 9.5 mile radius would encompass approximately 181,000 acres, on any given night.

Given the Service's limited understanding of how the Florida bonneted bat moves throughout its home range and selects foraging areas, we choose to use 50 acres of habitat as a conservative estimate to when loss of foraging habitat may affect the fitness of an individual to the extent that it would impair feeding and breeding. Projects that would remove, destroy or convert less than 50 acres of Florida bonneted bat foraging habitat are expected to result in a loss of foraging opportunities; however, this decrease is not expected to significantly impair the ability of the individual to feed and breed. Consequently, projects impacting less than 50 acres of foraging habitat that implement the identified best management practices in the Key would be expected to avoid take, and the appropriate determination is that the project may affect, but is not likely to adversely affect the species (MANLAA).

Next, the Service incorporated the level of bat activity into our Key to evaluate when a foraging area may have greater value to the species. When surveys document high bat activity, we deduce that this area has increased value and importance to the species. Thus, when high bat activity is detected in parcels with greater than 50 acres of foraging habitat, we anticipate that the loss, destruction, or conversion of this habitat could significantly impair the ability of an individual to feed and breed (*i.e.*, LAA); thus formal consultation is warranted.

If surveys do not indicate high bat activity, we anticipate that loss of this additional foraging habitat may affect, but is not likely to adversely affect the species (MANLAA). This is because although the acreage is large, the area does not appear to be important at the landscape scale of nightly foraging. Therefore, its loss is not anticipated to significantly impair the ability of an individual to feed or breed.

The exception to this approach is for projects greater than 50 acres when they occur in potential roosting habitat that is not found to support roosting or high bat activity. Under this scenario, the Service concludes that the loss of the large acreage of suitable roosting habitat has the potential to significantly impair the ability of an individual to breed or shelter (*i.e.*, LAA) because the species is cavities for roosting are expected to be limited range wide and the project will impair these limited opportunities for roosting.

Determinations

The Corps (or other Federal action agency) may reach one of several determinations when using this Key. Regardless of the determination, when acoustic bat surveys have been conducted, the Service requests that these survey results are provided to our office to increase our knowledge of

the species and improve our consultation process. Surveys results and reports should be transmitted to the Service at FBBsurveyreport@fws.gov or mail electronic file to U.S. Fish and Wildlife Service, Attention Florida bonneted bat surveys, 1339 20th Street, Vero Beach, Florida 32960. When formal consultation is requested, survey results and reports should be submitted with the consultation request to verobeach@fws.gov.

No effect: If the use of the Key results in a determination of "no effect," no further consultation is necessary with the Service. The Service recommends that the Corps (or other Federal action agency) documents the pathway used to reach the determination in the project record and proceeds with other species analyses as warranted.

May Affect, Not Likely to Adversely Affect (MANLAA): In this Key we have identified two ways that consultation can conclude informally, MANLAA-P and MANLAA-C.

> **MANLAA-P**: If the use of the Key results in a determination of "MANLAA- P," the Service concurs with this determination based on the rationale provide above, and no further consultation is necessary for the effects of the proposed action on the Florida bonneted bat. The Service recommends that the Corps (or other Federal action agency) documents the pathway used to reach the determination in the project record and proceeds with other species analyses as warranted.
>
> **MANLAA-C**: If the use of the Key results in a determination of MANLAA-C, further consultation with the Service is required to confirm that the Key has been used properly, and the Service concurs with the evaluation of the survey results. Survey results should be submitted with the consultation request.

May Affect, Likely to Adversely Affect (LAA) - When the determination in the Key is "LAA" technical assistance with the Service and modifications to the proposed action may enable the project to be reevaluated and conclude with a MANLAA-C determination. Under other circumstance, "LAA" determinations will require formal consultation.

Working with the Fish and Wildlife Foundation of Florida, the Service has established a fund to support conservation and recovery for the Florida bonneted bat. Any project that has the potential to affect the Florida bonneted bat and/or its habitat is encouraged to make a voluntary contribution to this fund. If you would like additional information about how to make a contribution and how these monies are used to support Florida bonneted bat recovery please contact Ashleigh Blackford, Connie Cassler, or José Rivera at 772-562-3909.

This revised Key is effective immediately upon receipt by the Corps. Should circumstances change or new information become available regarding the Florida bonneted bat and/or implementation of the Key, the determinations herein may be reconsidered and this Key further revised or amended. We have established an email address to collect comments on the Key and the survey protocols at: FBBguidelines@fws.gov.

Thank you for your continued cooperation in the effort to conserve fish and wildlife resources. If you have any questions regarding this Key, please contact the South Florida Ecological Services Office at 772-562-3909.

Sincerely,

Roxanna Hinzman
Field Supervisor
South Florida Ecological Services

Enclosure

Cc: electronic only
Corps, Jacksonville, Florida (Dale Beter, Muriel Blaisdell, Ingrid Gilbert, Alisa Zarbo, Melinda Charles-Hogan, Susan Kaynor, Krista Sabin, John Fellows)

LITERATURE CITED

Ober, H. 2015. Annual report to USFWS for calendar year 2015. Permit number TE23583B-1. University of Florida, Department of Wildlife Ecology and Conservation, North Florida Research and Education Center. Quincy, Florida.

Ober, H. 2016. Annual report to USFWS for calendar year 2016. Permit number TE23583B-1. University of Florida, Department of Wildlife Ecology and Conservation, North Florida Research and Education Center. Quincy, Florida.

Webb, E.N. 2018a. Email to Paula Halupa *et al.* University of Florida, Department of Wildlife Ecology and Conservation. Gainesville, Florida. April 1, 2018.

Webb, E.N. 2018b. Presentation given at Florida bonneted bat working group meeting at The Conservancy of Southwest Florida. University of Florida, Department of Wildlife Ecology and Conservation. Gainesville, Florida. May 24, 2016.

U.S. Fish and Wildlife Service
South Florida Ecological Services Office

FLORIDA BONNETED BAT CONSULTATION GUIDELINES

October - 2019

The U.S. Fish and Wildlife Service's South Florida Ecological Services Field Office (Service) developed the Florida Bonneted Bat Consultation Guidelines (Guidelines) to assist in avoiding and minimizing potential negative effects to roosting and foraging habitat, and assessing effects to the Florida bonneted bat (*Eumops floridanus*) from proposed projects. The Consultation Key within the Guidelines assists applicants in evaluating their proposed projects and identifying the appropriate consultation paths under sections 7 and 10 of the Endangered Species Act of 1973 (Act), as amended (87 Stat. 884; 16 U.S.C. 1531 *et seq.*). These Guidelines are primarily for use in evaluating regulatory projects where development and land conversions are anticipated. These Guidelines focus on conserving roosting structures in natural and semi-natural environments. The following Consultation Area map (Figure 1 and Figure 2, Appendix A), Consultation Flowchart (Figure 3), Consultation Key, Survey Framework (Appendices B-C), and **Best Management Practices (BMPs)** (Appendix D) are based upon the best available scientific information. As more information is obtained, these Guidelines will be revised as appropriate. If you have comments, or suggestions on these Guidelines or the Survey Protocols (Appendix B and C), please email your comments to FBBguidelines@fws.gov. These comments will be reviewed and incorporated in an annual review.

Terms in **bold** are further defined in the Glossary.

Wherever possible, proposed development projects within the Consultation Area should be designed to avoid and minimize take of Florida bonneted bats and to retain their habitat. Applicants are encouraged to enter into early technical assistance/consultation with the Service so we may provide recommendations for avoiding and minimizing adverse effects. Although these Guidelines focus on the effects of a proposed action (*e.g.*, development) on natural habitat, (*i.e.*, non-urban), Appendix E also provides Best Management Practices for Land Management Projects.

If you are renovating an existing artificial structure (*e.g.*, building) within the urban environment with or without additional ground disturbing activities, these Guidelines do not apply. The Service is developing separate guidelines for consultation in these situations. Until the urban guidelines are complete, please contact the Service for additional guidance.

The final listing rule for the Florida bonneted bat (Service 2013) describes threats identified for the species. Habitat loss and degradation, as well as habitat modification, have historically affected the species. Florida bonneted bats are different from most other Florida bat species because they are reproductively active through most of the year, and their large size makes them capable of foraging long distances from their roost (Ober *et al.* 2016). Consequently, this species is vulnerable to disturbances around the roost during a greater portion of the year and considerations about foraging habitat extend further than the localized roost.

Use of Consultation Area, Flowchart, and Key

Figure 1 shows the Consultation Area for the Florida bonneted bat where this consultation guidance applies. For information on how the Consultation Area was delineated see Appendix A. The Consultation Flowchart (Figure 3) and Consultation Key direct project proponents through a series of couplets that will provide a conclusion or determination for potential effects to the Florida bonneted bat. *Please Note: If additional listed species, or candidate or proposed species, or designated or proposed critical habitat may be affected, a separate evaluation will be needed for these species/critical habitats.*

Currently, the Consultation Flowchart (Figure 3) and Consultation Key cannot be used for actions proposed within the urban development boundary in Miami-Dade and Broward County. The urban development boundary is part of the Consultation Area, but it is excluded from these Guidelines because Florida bonneted bats use this area differently (roosting largely in artificial structures), and small natural foraging areas are expected to be important. Applicants with projects in this area should contact the Service for further guidance and individual consultation.

Determinations may be either "no effect," "may affect, but is not likely to adversely affect" (**MANLAA**), or "may affect, and is likely to adversely affect" (**LAA**). An applicant's willingness and ability to alter project designs could sufficiently minimize effects to Florida bonneted bats and allow for a **MANLAA** determination for this species (informal consultation). The Service is available for early technical assistance/consultation to offer recommendations to assist in project design that will minimize effects. When take cannot be avoided, applicants and action agencies are encouraged to incorporate compensation to offset adverse effects. The Service can assist with identifying compensation options (*e.g.,* conservation on site, conservation off-site, contributions to the Service's Florida bonneted bat conservation fund, *etc*.).

Using the Key and Consultation Flowchart

- "No effect" determinations do not need Service concurrence.
- "May affect, but is not likely to adversely affect" **MANLAA**. Applicants will be expected to incorporate the appropriate BMPs to reach a **MANLAA** determination.
    - **MANLAA-P** (in blue in Consultation Flowchart) have programmatic concurrence through the transmittal letter of these Guidelines, and therefore no further consultation with the Service is necessary unless assistance is needed in interpreting survey results.
    - **MANLAA-C** (in black in Consultation Flowchart) determinations require further consultation with the Service.
- "May affect, and is likely to adversely affect" (**LAA**) determinations require consultation with the Service. Project modifications could change the **LAA** determinations in numbers 5, 8, 9, 11, 12, and 17 to **MANLAA**. When take cannot be avoided, **LAA** determinations will require a biological opinion.
- The Service requests copies of surveys used to support all determinations. If a survey is required by the Consultation Key and the final determination is "no effect" or "MANLAA-P", send the survey to FBBsurveyreport@fws.gov , or mail electronic file to U.S. Fish and Wildlife Service, Attention Florida bonneted bat surveys, 1339 20th Street, Vero Beach, Florida 32960. If a survey is required by the Consultation Key and the determination is "MANLAA-C" or "LAA", submit the survey in the consultation request.

For the purpose of making a decision at Couplet 2: If any potential roosting structure is present, then the habitat is classified as **potential roosting habitat**, and the left half of the flowchart should be followed (see Figure 3). We recognize that roosting habitat may also be used by Florida bonneted bats for foraging. If the project site only consists of **foraging habitat** (*i.e.*, no suitable roosting structures), then the right side of the flowchart should be followed beginning at step 13.

For couplets 11 and 12: **Potential roosting habitat** is considered **Florida bonneted bat foraging habitat** when a determination is made that roosting is not likely.

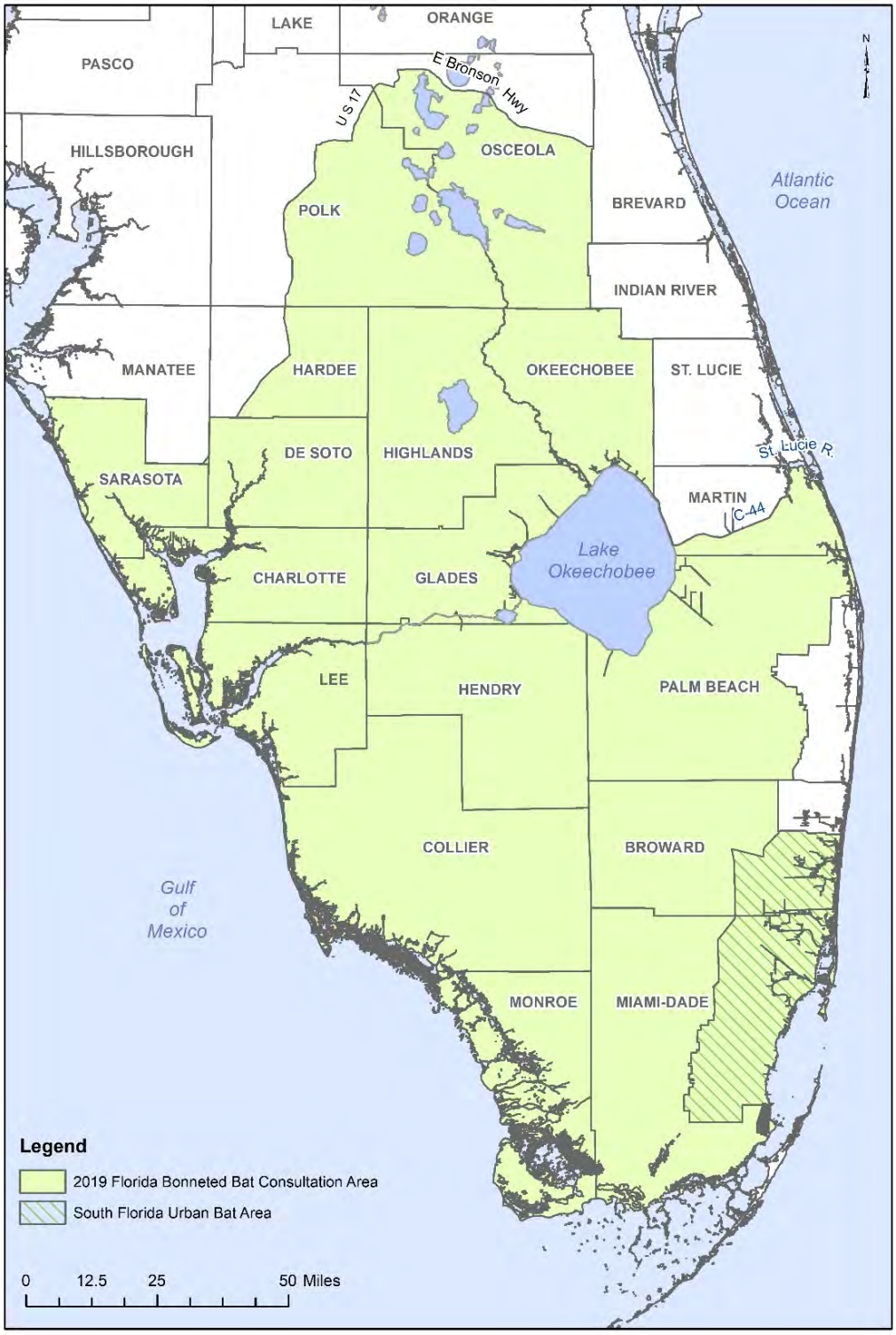

Figure 1. Florida Bonneted Bat Consultation Area. Hatched area (Figure 2) identifies the urban development boundary in Miami-Dade and Broward County. Applicants with projects in this area should contact the Service for specific guidance addressing this area and individual consultation. The Consultation Key should not be used for projects in this area.

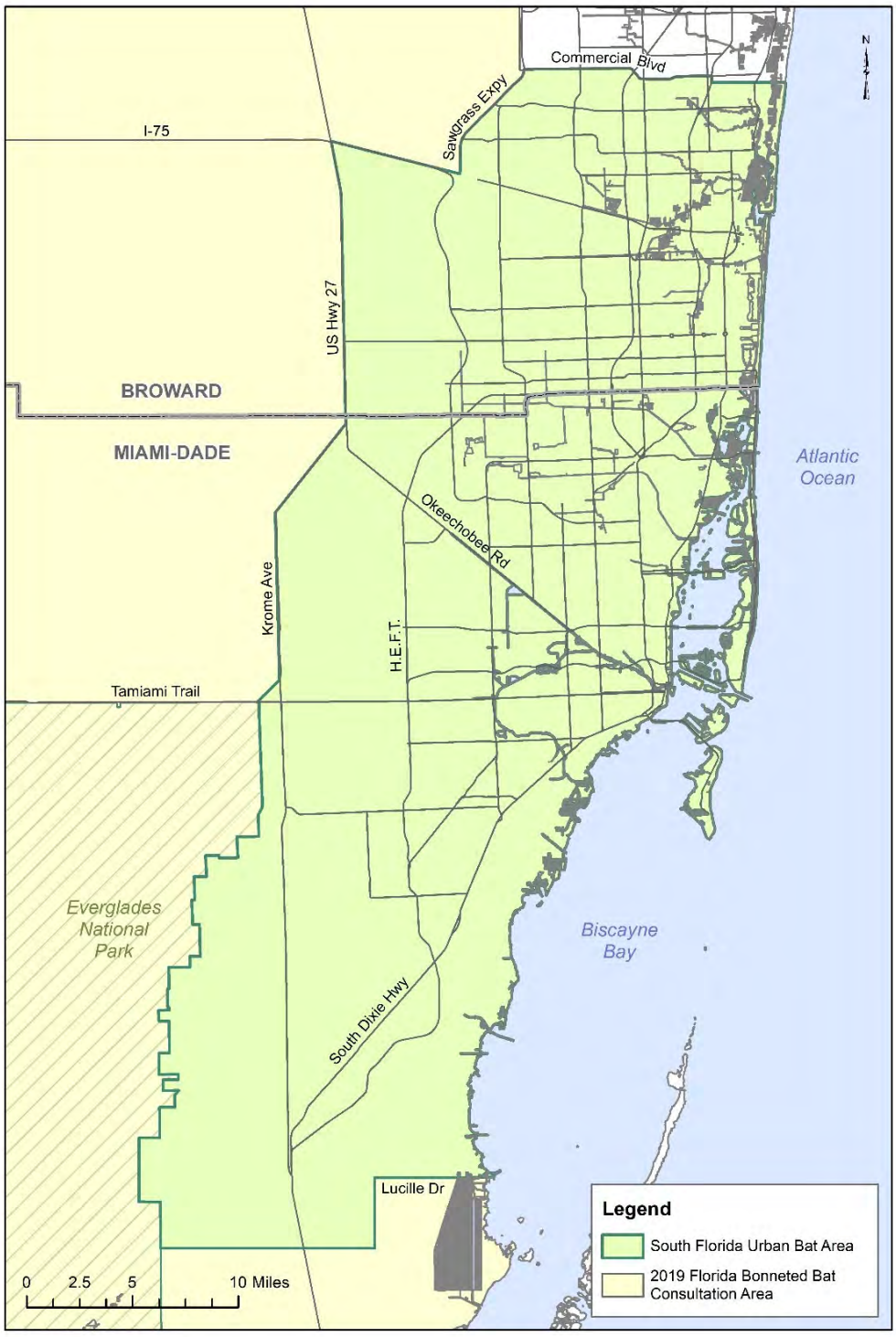

Figure 2. Urban development boundary in Miami-Dade and Broward County. The Consultation Key should not be used for projects in this area. Applicants with projects in this South Florida Urban Bat Area should contact the Service for specific guidance addressing this area and individual consultation.

Florida Bonneted Bat Consultation Key[#]

Use the following key to evaluate potential effects to the Florida bonneted bat (FBB) from the proposed project. Refer to the Glossary as needed.

1a. Proposed project or land use change is partially or wholly within the Consultation Area (Figure 1).....**Go to 2**
1b. Proposed project or land use change is wholly outside of the Consultation Area (Figure 1).....**No Effect**

2a. Potential FBB roosting habitat exists within the project area.....**Go to 3**
2b. No potential FBB roosting habitat exists within the project area.....**Go to 13**

3a. Project size/footprint* ≤ 5 acres (2 hectares)..... **Conduct Limited Roost Survey (Appendix C)** then **Go to 4**
3b. Project size/footprint* > 5 acres (2 hectares).....**Conduct Full Acoustic/Roost Surveys (Appendix B)** then **Go to 6**

4a. Results show FBB roosting is likely .....**Go to 5**
4b. Results do not show FBB roosting is likely.....**MANLAA-P if BMPs (Appendix D) used and survey reports are submitted. Programmatic concurrence.**

5a. Project will affect roosting habitat.....**LAA$^+$ Further consultation with the Service required.**
5b. Project will not affect roosting habitat..... **MANLAA-C with required BMPs (Appendix D). Further consultation with the Service required.**

6a. Results show some FBB activity.....**Go to 7**
6b. Results show no FBB activity.....**No Effect**

7a. Results show FBB roosting is likely.....**Go to 8**
7b. Results do not show FBB roosting is likely.....**Go to 10**

8a. Project will not affect roosting habitat.....**Go to 9**
8b. Project will affect roosting habitat.....**LAA$^+$ Further consultation with the Service required.**

9a. Project will affect* > 50 acres (20 hectares) (wetlands and uplands) of foraging habitat.....**LAA$^+$ Further consultation with the Service required.**
9b. Project will affect* ≤ 50 acres (20 hectares) (wetlands and uplands) of foraging habitat..... **MANLAA-C with required BMPs (Appendix D). Further consultation with the Service required.**

10a. Results show high FBB activity/use.....**Go to 11**
10b. Results do not show high FBB activity/use.....**Go to 12**

11a. Project will affect* > 50 acres (20 hectares) (wetlands and uplands) of FBB habitat (roosting and/or foraging).....**LAA$^+$ Further consultation with the Service required.**
11b. Project will affect* ≤ 50 acres (20 hectares) (wetlands and uplands) of FBB habitat (roosting and/or foraging)..... **MANLAA-C with required BMPs (Appendix D). Further consultation with the Service required.**

12a. Project will affect* > 50 acres (20 hectares) (wetlands and uplands) of FBB habitat.....**LAA$^+$ Further consultation with the Service required.**
12b. Project will affect* ≤ 50 acres (20 hectares) (wetlands and uplands) of FBB habitat..... **MANLAA-P if BMPs (Appendix D) used and survey reports are submitted. Programmatic concurrence.**

13a. FBB foraging habitat exists within the project area and foraging habitat will be affected…..……..**Go to 14**

13b. FBB foraging habitat exists within the project area and foraging habitat will not be affected **OR** no FBB foraging habitat exists within the project area…..……..**No Effect**

14a. Project size* > 50 acres (20 hectares) (wetlands and uplands) ……..…….....**Go to 15**

14b. Project size* ≤ 50 acres (20 hectares) (wetlands and uplands) ……...….. **MANLAA-P if BMPs (Appendix D) used. Programmatic concurrence.**

15a. Project is within 8 miles (12.9 kilometers) of high quality potential roosting areas^……..……**Conduct Full Acoustic Survey (Appendix B) and Go to 16**

15b. Project is not within 8 miles (12.9 kilometers) of high quality potential roosting area^…….....….**MANLAA-P if BMPs (Appendix D) used. Programmatic concurrence.**

16a. Results show some FBB activity……...…….....**Go to 17**

16b. Results show no FBB activity……..…….…....**No Effect**

17a. Results show high FBB activity/use……...…...…....**LAA[+] Further consultation with the Service required.**

17b. Results do not show high FBB activity/use……..……... **MANLAA-P if BMPs (Appendix D) used and survey reports submitted. Programmatic concurrence.**

[#] If you are within the urban environment and you are renovating an existing artificial structure (with or without additional ground disturbing activities), these Guidelines do not apply. The Service is developing separate guidelines for consultation in these situations. Until the urban guidelines are complete, please contact the Service for additional guidance

*****Includes wetlands and uplands that are going to be altered along with a 250- foot (76.2- meter) buffer around these areas if the parcel is larger than the altered area.

[+]Project modifications could change the **LAA** determinations in numbers 5, 8, 9, 11, 12, and 17 to **MANLAA** determinations.

^Determining if **high quality potential roosting areas** are within 8 mi (12.9 km) of a project is intended to be a desk-top exercise looking at most recent aerial imagery, not a field exercise.

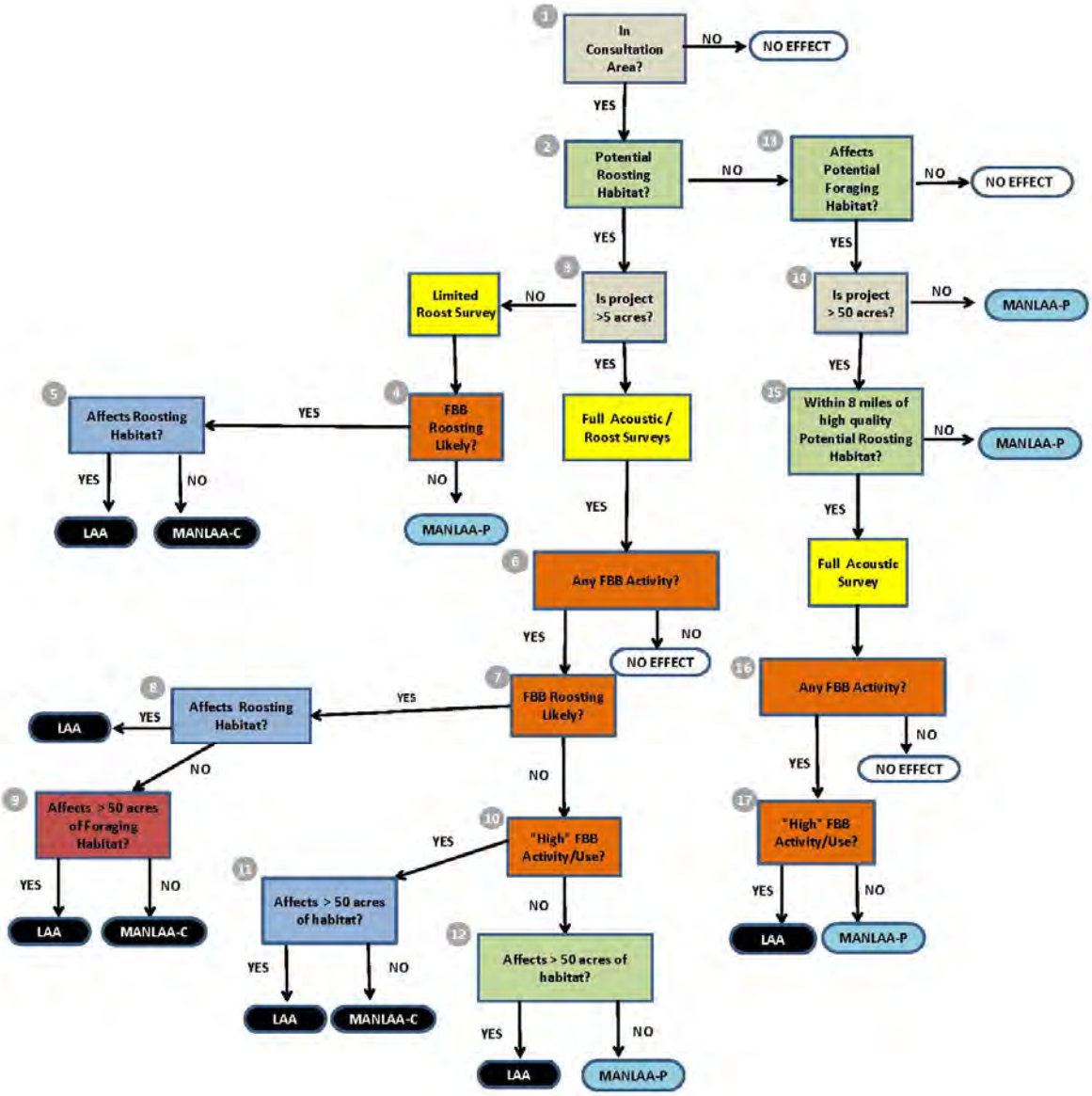

Figure 3. Florida bonneted bat Consultation Flowchart. "**No effect**" determinations do not need Service concurrence. "May affect, but not likely to adversely affect", **MANLAA-P,** in blue have programmatic concurrence through the transmittal letter of these Guidelines, and therefore no further consultation with the Service is necessary unless assistance is needed in interpreting survey results. **MANLAA-C** determinations in black require further consultation with the Service. Applicants are expected to incorporate the appropriate **BMPs** to reach a **MANLAA** determination. "May affect, and is likely to adversely affect", **LAA, (**also in black) determinations require consultation with the Service. Further consultation with the Service may identify project modifications that could change the **LAA** determinations in numbers 5, 8, 9, 11, 12, and 17 to **MANLAA** determinations. The Service requests Florida bonneted bat survey reports for all determinations.

Literature Cited

Bailey, A.M., H.K. Ober, A.R. Sovie, and R.A. McCleery. 2017. Impact of land use and climate on the distribution of the endangered Florida bonneted bat. Journal of Mammalogy. 98:1586-1593.

Braun de Torrez, E. 2019. Email from biologist E. Braun de Torrez, Florida Fish and Wildlife Conservation Commission to biologist, S. Sneckenberger, U.S. Fish and Wildlife Service. July 24, 2019. Gainesville, Florida.

Keeley, B.W., and M.D. Tuttle. 1999. Bats in American bridges. Bat Conservation International, Inc. Austin, Texas.

Ober, H.K., E.C. Braun de Torrez, J.A. Gore, A.M. Bailey, J.K. Myers, K.N. Smith, and R.A. McCleery. 2016. Social organization of an endangered subtropical species, Eumops floridanus, the Florida bonneted bat. Mammalia 2016:1-9.

U.S. Fish and Wildlife Service. 2013. Endangered and threatened wildlife and plants; endangered species status for the Florida bonneted bat. Federal Register 78:61004-61043.

Appendix D: Best Management Practices (BMPs) for Development Projects

Ongoing research and monitoring will continue to increase the understanding of the Florida bonneted bat and its habitat needs and will continue to inform habitat and species management recommendations. These BMPs incorporate what is known about the species and also include recommendations that are beneficial to all bat species in Florida. These BMPs are intended to provide recommendations for improving conditions for use by Florida bonneted bats, and to help conserve Florida bonneted bats that may be foraging or roosting in an area.

The BMPs required to reach a "may affect, but is not likely to adversely affect" (MANLAA) determination vary depending on the couplet from the Consultation Key used to reach that particular MANLAA. The requirements for each couplet are provided below followed by the list of BMPs. If the applicant is unable or does not want to do the required BMPs, then the Corps (or other Action Agency) will not be able to use this Guidance and formal consultation with the Service is required.

Couplet Number for MANLAA from Consultation Key	Required BMPs
4b	BMP number 1 if more than 3 months has occurred between the survey and start of the project, and any 3 BMPs out of BMPs 4 through 13
5b	BMP number 2, and any 3 BMPs out of BMPs 3 through 13
9b	BMPs number 2 and 3, and any 4 BMPs out of BMPs 5 through 13
11b	BMPs number 1 and 4, and any 4 BMPs out of BMPs 5 through 13
12b	BMP number 1, and any 3 BMPs out of BMPs 3 through 13
14b	Any 2 BMPs out of BMPs 3 through 13
15b	Any 3 BMPs out of BMPs 3 through 13
17b	Any 4 BMPs out of BMPs 3 through 13

BMPs for development, construction, and other general activities:

1. If potential roost trees or structures need to be removed, check cavities for bats within 30 days prior to removal of trees, snags, or structures. When possible, remove structure outside of breeding season (*e.g.*, January 1 – April 15). If evidence of use by any bat species is observed, discontinue removal efforts in that area and coordinate with the Service on how to proceed.
2. When using heavy equipment, establish a 250 foot (76 m) buffer around known or suspected roosts to limit disturbance to roosting bats.
3. For every 5 acres of impact, retain a minimum of 1.0 acre of native vegetation. If upland habitat is impacted, then upland habitat with native vegetation should be retained.
4. For every 5 acres of impact, retain a minimum of 0.25 acre of native vegetation. If upland habitat is impacted, then upland habitat with native vegetation should be retained..
5. Conserve open freshwater and wetland habitats to promote foraging opportunities and avoid impacting water quality. Created/restored habitat should be designed to replace the function of native habitat.

6. Conserve and/or enhance riparian habitat. A 50-ft (15.2 m) buffer is recommended around water bodies and stream edges. In cases where artificial water bodies (*i.e.,* stormwater ponds) are created, enhance edges with native plantings especially in cases in which wetland habitat was affected.
7. Avoid or limit widespread application of insecticides (*e.g.,* mosquito control, agricultural pest control) in areas where Florida bonneted bats are known or expected to forage or roost.
8. Conserve natural vegetation to promote insect diversity, availability, and abundance. For example, retain or restore 25% of the parcel in native contiguous vegetation.
9. Retain mature trees and snags that could provide roosting habitat. These may include live trees of various sizes and dead or dying trees with cavities, hollows, crevices, and loose bark. See "Roosting Habitat" in "Background" above.
10. Protect known Florida bonneted bat roost trees, snags or structures and trees or snags that have been historically used by Florida bonneted bats for roosting, even if not currently occupied, by retaining a 250 foot (76 m) disturbance buffer around the roost tree, snag, or structure to ensure that roost sites remain suitable for use in the future.
11. Avoid and minimize the use of artificial lighting, retain natural light conditions, and install wildlife friendly lighting (*i.e.*, downward facing and lowest lumens possible). Avoid permanent night-time lighting to the greatest extent practicable.
12. Incorporate engineering designs that discourage bats from using buildings or structures. If Florida bonneted bats take residence within a structure, contact the Service and Florida Fish and Wildlife Conservation Commission prior to attempting removal or when conducting maintenance activities on the structure.
13. Use or allow prescribed fire to promote foraging habitat.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
1339 20th Street
Vero Beach, Florida 32960

May 13, 2019

Andrew D. Kelly, Jr., Colonel
District Commander
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232-0019

Dear Colonel Kelly:

The U.S. Fish and Wildlife Service (Service) and the U.S. Army Corps of Engineers (Corps) currently use a dichotomous key (Key) to assist in making effect determinations pursuant to the Endangered Species Act for in-water activities that may affect manatees. Recently, Corps and Service staff identified the need to make several revisions to the 2013 Key to address new issues and changed circumstances. Although a more complete revision is needed in the future, three issues need to be addressed as soon as possible: 1) requirements associated with clamshell dredge head operation; 2) locations and conditions related to impact hammer driven metal piles and/or sheet piles; and 3) incorporation of the current list of counties that have approved Manatee Protection Plans (MPPs).

For the purpose of continuing to use the Key on projects that involve clamshell dredging or impact driving of metal piles or sheet piles, the Service is issuing this letter as an addendum to the Key. The Service finds work that keys out as "not likely to adversely affect" the manatee or its critical habitat using the 2013 Key is still the appropriate determination provided there is adherence to the following additional conditions:

1) During clamshell dredging operations, the dredge operator shall gravity-release the clamshell bucket only at the water's surface, and only after confirmation that there are no manatees within the safety distance identified in the standard construction conditions (or a 75-foot buffer if dredging is authorized at night);

2) Installation of metal pilings or metal sheet piles by impact hammer – if not within Important Manatee Areas, Warm Water Aggregation Areas, or Federal manatee sanctuaries or state-designated No Entry Areas - may occur under the following conditions: a) Use of at least one dedicated manatee observer, with all work being stopped if a manatee is observed within 1000 feet; b) no work shall occur outside of daylight hours (defined as one-half hour after sunrise to one-half hour before sunset); and, c) no more than 5 piles/day may be installed. If within any of the above-described areas, an informal or formal project-specific consultation with the Service is required.

In addition, the following change will allow projects in Charlotte County and Flagler County to be properly handled using the Key:

3) Charlotte County and Flagler County shall be added to the list of counties that have an approved Manatee Protection Plan (couplet J of the 2013 Key) and removed from the list of counties included in couplet L and the second category of couplet P of the 2013 Key.

With the above-described changes, the Service affirms that such work would not likely adversely affect the West Indian manatee and no further consultation is required provided all other conditions of the 2013 Key are met. The above changes, and possibly others, will ultimately be reflected in an updated version of the Key. We hope this letter provides the Corps with the ability to continue to work with the 2013 Key and in-water construction conditions until a revised and updated Key is approved.

Thank you for your continued support to facilitate recovery of the West Indian manatee and other species protected under the Endangered Species Act. If you have any questions, please contact Mr. Scott Calleson by e-mail at charles_calleson@fws.gov or by phone at (904) 731-3326.

Sincerely,

Larry Williams

Larry Williams
State Supervisor

cc:
Service, Jacksonville, Florida (Jay Herrington)
Service, Vero Beach, Florida (Bob Progulske, Roxanna Hinzman)

THE CORPS OF ENGINEERS, JACKSONVILLE DISTRICT, AND THE STATE OF FLORIDA EFFECT DETERMINATION KEY FOR THE MANATEE IN FLORIDA
April 2013

Purpose and background of the key

The purpose of this document is to provide guidance to improve the review of permit applications by U.S. Army Corps of Engineers' (Corps) Project Managers in the Regulatory Division regarding the potential effects of proposed projects on the endangered West Indian manatee (*Trichechus manatus*) in Florida, and by the Florida Department of Environmental Protection or its authorized designee or Water Management District, for evaluating projects under the State Programmatic General Permit (SPGP) or any other Programmatic General Permits that the Corps may issue for administration by the above agencies. Such guidance is contained in the following dichotomous key. The key applies to permit applications for in-water activities such as, but not limited to: (1) dredging [new or maintenance dredging of not more than 50,000 cubic yards], placement of fill material for shoreline stabilization, and construction/placement of other in-water structures as well as (2) construction of docks, marinas, boat ramps and associated trailer parking spaces, boat slips, dry storage or any other watercraft access structures or facilities.

At a certain step in the key, the user is referred to graphics depicting important manatee areas or areas with inadequate protection. The maps can be downloaded from the Corps' web page at http://www.saj.usace.army.mil/Missions/Regulatory/SourceBook.aspx. We intend to utilize the most recent depiction of these areas, so should these areas be modified by statute, rule, ordinance and/or other legal mandate or authorization, we will modify the graphical depictions accordingly. These areas may be shaded or otherwise differentiated for identification on the maps.

Explanatory footnotes are provided in the key and must be closely followed whenever encountered.

Scope of the key

This key should only be used in the review of permit applications for effect determinations on manatees and should not be used for other listed species or for other aquatic resources such as Essential Fish Habitat (EFH). Corps Project Managers should ensure that consideration of the project's effects on any other listed species and/or on EFH is performed independently. This key may be used to evaluate applications for all types of State of Florida (State Programmatic General Permits, noticed general permits, standard general permits, submerged lands leases, conceptual and individual permits) and Department of the Army (standard permits, letters of permission, nationwide permits, and regional general permits) permits and authorizations. The final effect determination will be based on the project location and description; the potential effects to manatees, manatee habitat, and/or manatee critical habitat; and any measures (such as project components, standard construction precautions, or special conditions included in the authorization) to avoid or minimize effects to manatees or manatee critical habitat. Projects that key to a "may affect" determination equate to "likely to adversely affect" situations, and those projects should not be processed under the SPGP or any other programmatic general permit. For

all “may affect” determinations, Corps Project Managers shall refer to the Manatee Programmatic Biological Opinion, dated March 21, 2011, for guidance on eliminating or minimizing potential adverse effects resulting from the proposed project. If unable to resolve the adverse effects, the Corps may refer the applicant to the U.S. Fish and Wildlife Service (Service) for further assistance in attempting to revise the proposed project to a “may affect, not likely to adversely affect” level. The Service will coordinate with the Florida Fish and Wildlife Conservation Commission (FWC) and the counties, as appropriate. Projects that provide new access for watercraft and key to “may affect, not likely to adversely affect” may or may not need to be reviewed individually by the Service.

MANATEE KEY
Florida[1]
April 2013

The key is not designed to be used by the Corps' Regulatory Division for making their effect determinations for dredging projects greater than 50,000 cubic yards, the Corps' Planning Division in making their effect determinations for civil works projects or by the Corps' Regulatory Division for making their effect determinations for projects of the same relative scope as civil works projects. These types of activities must be evaluated by the Corps independently of the key.

A. Project is not located in waters accessible to manatees and does not directly or indirectly affect manatees (see Glossary).....*No effect*

Project is located in waters accessible to manatees **or** directly or indirectly affects manatees ..... B

B. Project consists of one or more of the following activities, all of which are *May affect*:

1. blasting or other detonation activity for channel deepening and/or widening, geotechnical surveys or exploration, bridge removal, movies, military shows, special events, etc.;

2. installation of structures which could restrict or act as a barrier to manatees;

3. new or changes to existing warm or fresh water discharges from industrial sites, power plants, or natural springs or artesian wells (but only if the new or proposed change in discharge requires a Corps permit to accomplish the work);

4. installation of new culverts and/or maintenance or modification of existing culverts (where the culverts are 8 inches to 8 feet in diameter, ungrated and in waters accessible, or potentially accessible, to manatees)[2];

5. mechanical dredging from a floating platform, barge or structure[3] that restricts manatee access to less than half the width of the waterway;

6. creation of new slips or change in use of existing slips, even those located in a county with a State-approved Manatee Protection Plan (MPP) in place and the number of slips is less than the MPP threshold, to accommodate docking for repeat use vessels, (*e.g.*, water taxis, tour boats, gambling boats, etc; or slips or structures that are not civil works projects, but are frequently used to moor large vessels (>100') for shipping and/or freight purposes; does not include slips used for docking at boat sales or repair facilities or loading/unloading at dry stack storage facilities and boat ramps); [Note: For projects within Bay, Dixie, Escambia, Franklin, Gilchrist, Gulf, Hernando, Jefferson, Lafayette, Monroe (south of Craig Key), Nassau, Okaloosa, Okeechobee, Santa Rosa, Suwannee, Taylor, Wakulla or Walton County, the reviewer should proceed to Couplet C.]

7. any type of in-water activity in a Warm Water Aggregation Area (WWAA) or No Entry Area (see Glossary and accompanying Maps[4]); [Note: For residential docking facilities in a Warm Water Aggregation Area that is not a Federal manatee sanctuary or No Entry Area, the reviewer should proceed to couplet C.]

8. creation or expansion of canals, basins or other artificial shoreline and/or the connection of such features to navigable waters of the U.S.; [Note: For projects proposing a single residential dock, the reviewer should proceed to couplet C; otherwise, project is a *May Affect*.]

9. installation of temporary structures (docks, buoys, etc.) utilized for special events such as boat races, boat shows, military shows, etc., but only when consultation with the U.S. Coast Guard and FWS has not occurred; [Note: See programmatic consultation with the U.S. Coast Guard on manatees dated May 10, 2010.].

Project is other than the activities listed above C

C. Project is located in an Important Manatee Area (IMA) (see Glossary and accompanying Maps[4]) ..... D

Project is not located in an Important Manatee Area (IMA) (see Glossary and accompanying Maps[4]) ..... G

D. Project includes dredging of less than 50,000 cubic yards ..... E

Project does not include dredging ..... G

E. Project is for dredging a residential dock facility or is a land-based dredging operation ..... N

Project not as above ..... F

F. Project proponent **does not elect** to follow all dredging protocols described on the maps for the respective IMA in which the project is proposed ..... *May affect*

Project proponent **elects** to follow all dredging protocols described on the maps for the respective IMA in which the project is proposed ..... G

G. Project provides new[5] access for watercraft, *e.g.*, docks or piers, marinas, boat ramps and associated trailer parking spaces, new dredging, boat lifts, pilings, floats, floating docks, floating vessel platforms, boat slips, dry storage, mooring buoys, or other watercraft access (residential boat lifts, pilings, floating docks, and floating vessel platforms installed in existing slips are not considered new access) or improvements allowing increased watercraft usage ..... H

Project does not provide new[5] access for watercraft, *e.g.*, bulkheads, seawalls, riprap, maintenance dredging, boardwalks and/or the maintenance (repair or rehabilitation) of currently serviceable watercraft access structures provided all of the following are met: (1) the number of slips is not increased; (2) the number of existing slips is not in question; and (3) the improvements do not allow increased watercraft usage ..... N

H. Project is located in the Braden River Area of Inadequate Protection (Manatee County) (see Glossary and accompanying AIP Map[4])
..... *May affect*

Project is not located in the Braden River Area of Inadequate Protection (Manatee County) (see Glossary and accompanying AIP Map[4]) I

I. Project is for a multi-slip facility (see Glossary) ..... J

Project is for a residential dock facility or is for dredging (see Glossary) ..... N

J. Project is located in a county that currently has a State-approved MPP in place (BREVARD, BROWARD, CITRUS, CLAY, COLLIER, DUVAL, INDIAN RIVER, LEE, MARTIN, MIAMI-DADE, PALM BEACH, ST. LUCIE, SARASOTA, VOLUSIA) or shares contiguous waters with a county having a State-approved MPP in place (LAKE, MARION, SEMINOLE)[6] ..... K

Project is located in a county not required to have a State-approved MPP L

K. Project has been developed or modified to be consistent with the county's State-approved MPP **and** has been verified by a FWC review (or FWS review if project is exempt from State permitting) **or** the number of slips is below the MPP threshold ..... N

Project has not been reviewed by the FWC or FWS **or** has been reviewed by the FWC or FWS **and** determined that the project is not consistent with the county's State-approved MPP ..... *May affect*

L. Project is located in one of the following counties: CHARLOTTE, DESOTO[7], FLAGLER, GLADES, HENDRY, HILLSBOROUGH, LEVY, MANATEE, MONROE[7], PASCO[7], PINELLAS ..... M

Project is located in one of the following counties: BAY, DIXIE, ESCAMBIA, FRANKLIN, GILCHRIST, GULF, HERNANDO, JEFFERSON, LAFAYETTE, MONROE (south of Craig Key), NASSAU, OKALOOSA, OKEECHOBEE, PUTNAM, SANTA ROSA, ST. JOHNS, SUWANNEE, TAYLOR, WAKULLA, WALTON ..... N

M. The number of slips does not exceed the residential dock density threshold (see Glossary) ..... N

The number of slips exceeds the residential dock density threshold (see Glossary) ..... *May affect*

N. Project impacts to submerged aquatic vegetation[8], emergent vegetation or mangrove will have beneficial, insignificant, discountable[9] or no effects on the manatee[10] ..... O

Project impacts to submerged aquatic vegetation[8], emergent vegetation or mangrove may adversely affect the manatee[10] ..... *May affect*

O. Project proponent **elects** to follow standard manatee conditions for in-water work[11] and requirements, as appropriate for the proposed activity, prescribed on the maps[4] ..... P

Project proponent **does not elect** to follow standard manatee conditions for in-water work[11] and appropriate requirements prescribed on the maps[4] ..... *May affect*

P. If project is for a new or expanding[5] multi-slip facility and is located in a county with a State-approved MPP in place **or** in Bay, Dixie, Escambia, Franklin, Gilchrist, Gulf, Hernando, Jefferson, Lafayette, Monroe (south of Craig Key), Nassau, Okaloosa, Okeechobee, Putnam, St. Johns, Santa Rosa, Suwannee, Taylor, Wakulla or Walton County, the determination of "*May affect, not likely to adversely affect*" is appropriate[12] and no further consultation with the Service is necessary.

If project is for a new or expanding[5] multi-slip facility and is located in Charlotte, Desoto, Flagler, Glades, Hendry, Hillsborough, Levy, Manatee, Monroe (north of Craig Key), Pasco, or Pinellas County, further consultation with the Service is necessary for "*May affect, not likely to adversely affect*" determinations.

If project is for repair or rehabilitation of a multi-slip facility and is located in an Important Manatee Area, further consultation with the Service is necessary for "*May affect, not likely to adversely affect*" determinations. If project is for repair or rehabilitation of a multi-slip facility and: (1) is not located in an Important Manatee Area; (2) the number of slips is not increased; (3) the number of existing slips is not in question; and (4) the improvements to the existing watercraft access structures do not allow increased watercraft usage, the determination of "*May affect, not likely to adversely affect*" is appropriate[12] and no further consultation with the Service is necessary.

If project is a residential dock facility, shoreline stabilization, or dredging, the determination of "*May affect, not likely to adversely affect*" is appropriate[12] and no further consultation with the Service is necessary. Note: For residential dock facilities located in a Warm Water Aggregation Area or in a No Entry area, seasonal restrictions may apply. See footnote 4 below for maps showing restrictions.

If project is other than repair or rehabilitation of a multi-slip facility, a new[5] multi-slip facility, residential dock facility, shoreline stabilization, or dredging, and does not provide new[5] access for watercraft or

improve an existing access to allow increased watercraft usage, the determination of "*May affect, not likely to adversely affect*" is appropriate[12] and no further consultation with the Service is necessary.

[1] On the St. Mary's River, this key is only applicable to those areas that are within the geographical limits of the State of Florida.

[2] All culverts 8 inches to 8 feet in diameter must be grated to prevent manatee entrapment. To effectively prevent manatee access, grates must be permanently fixed, spaced a maximum of 8 inches apart (may be less for culverts smaller than 16 inches in diameter) and may be installed diagonally, horizontally or vertically. For new culverts, grates must be attached prior to installation of the culverts. Culverts less than 8 inches or greater than 8 feet in diameter are exempt from this requirement. If new culverts and/or the maintenance or modification of existing culverts are grated as described above, the determination of "*May affect, not likely to adversely affect*" is appropriate[11] and no further consultation with the Service is necessary.

[3] If the project proponent agrees to follow the standard manatee conditions for in-water work as well as any special conditions appropriate for the proposed activity, further consultation with the Service is necessary for "*May affect, not likely to adversely affect*" determinations. These special conditions may include, but are not limited to, the use of dedicated observers (see Glossary for definition of dedicated observers), dredging during specific months (warm weather months vs cold weather months), dredging during daylight hours only, adjusting the number of dredging days, does not preclude or discourage manatee egress/ingress with turbidity curtains or other barriers that span the width of the waterway, etc.

[4] Areas of Inadequate Protection (AIPs), Important Manatee Areas (IMAs), Warm Water Aggregation Areas (WWAAs) and No Entry Areas are identified on these maps and defined in the Glossary for the purposes of this key. These maps can be viewed on the Corps' web page. If projects are located in a No Entry Area, special permits may be required from FWC in order to access these areas (please refer to Chapter 68C-22 F.A.C. for boundaries; maps are also available at FWC's web page).

[5] New access for watercraft is the addition or improvement of structures such as, but not limited to, docks or piers, marinas, boat ramps and associated trailer parking spaces, boat lifts, pilings, floats, floating docks, floating vessel platforms, (maintenance dredging, residential boat lifts, pilings, floating docks, and floating vessel platforms installed in existing slips are not considered new access), boat slips, dry storage, mooring buoys, new dredging, etc., that facilitates the addition of watercraft to, and/or increases watercraft usage in, waters accessible to manatees. The repair or rehabilitation of any type of currently serviceable watercraft access structure is not considered new access provided all of the following are met: (1) the number of slips is not increased; (2) the number of existing slips is not in question; and (3) the improvements to the existing watercraft access structures do not result in increased watercraft usage.

[6] Projects proposed within the St. Johns River portion of Lake, Marion, and Seminole counties and contiguous with Volusia County shall be evaluated using the Volusia County MPP.

[7] For projects proposed within the following areas: the Peace River in DeSoto County; all areas north of Craig Key in Monroe County, and the Anclote and Pithlachascotee Rivers in Pasco County, proceed to Couplet M. For all other locations in DeSoto, Monroe (south of Craig Key) and Pasco Counties, proceed to couplet N.

[8] Where the presence of the referenced vegetation is confirmed within the area affected by docks and other piling-supported minor structures and the reviewer has concluded that the impacts to SAV, marsh or mangroves would not adversely affect the manatee or its critical habitat, proceed to couplet O.

Where the presence of the referenced vegetation is confirmed within the area affected by docks and other piling-supported minor structures and the reviewer has concluded that the impacts to SAV, marsh or mangroves would adversely affect the manatee or its critical habitat, the applicant can elect to avoid/minimize impacts to that vegetation. In that instance, where impacts are unavoidable and the applicant elects to abide by or employ construction techniques that exceed the criteria in the following documents, the reviewer should conclude that the impacts to SAV, marsh or mangroves would not adversely affect the manatee or its critical habitat and proceed to couplet O.

- "Construction Guidelines in Florida for Minor Piling-Supported Structures Constructed in or over Submerged Aquatic Vegetation (SAV), Marsh or Mangrove Habitat," prepared jointly by the U.S. Army Corps of Engineers and the National Marine Fisheries Service (August 2001) [refer to the Corps' web page], and

- "Key for Construction Conditions for Docks or Other Minor Structures Constructed in or over Johnson's seagrass (*Halophila johnsonii*)," prepared jointly by the National Marine Fisheries Service and U.S. Army Corps of Engineers (October 2002), for those projects within the known range of Johnson's seagrass occurrence (Sebastian Inlet to central Biscayne Bay in the lagoon systems on the east coast of Florida) [refer to the Corps' web page],

Where the presence of the referenced vegetation is confirmed within the area affected by docks and other piling-supported minor structures and the reviewer has concluded that the impacts to SAV, marsh or mangroves would adversely affect the manatee or its critical habitat, and the applicant does not elect to follow the above Guidelines, the Corps will need to request formal consultation on the manatee with the Service as *May affect*.

For activities other than docks and other piling-supported minor structures proposed in SAV, marsh, or mangroves (*e.g.*, new dredging, placement of riprap, bulkheads, etc.), if the reviewer determines the impacts to the SAV, marsh or mangroves will not adversely affect the manatee or its critical habitat, proceed to couplet O, otherwise the Corps will need to request formal consultation on the manatee with the Service as *May affect*.

[9] See Glossary, under "is not likely to adversely affect."

[10] Federal reviewers, when making your effects determination, consider effects to manatee designated critical habitat pursuant to section 7(a)(2) of the Endangered Species Act. State reviewers, when making your effects determination, consider effects to manatee habitat within the entire State of Florida, pursuant to Chapter 370.12(2)(b) Florida Statutes.

[11] See the Corps' web page for manatee construction conditions. At this time, manatee construction precautions c and f are not required in the following Florida counties: Bay, Escambia, Franklin, Gilchrist, Gulf, Jefferson, Lafayette, Okaloosa, Santa Rosa, Suwannee, and Walton.

[12] By letter dated April 25, 2013, the Corps received the Service's concurrence with "*May affect, not likely to adversely affect*" determinations made pursuant to this key for the following activities: (1) selected non-watercraft access projects; (2) watercraft-access projects that are residential dock facilities, excluding those located in the Braden River AIP; (3) launching facilities solely for kayaks and canoes, and (4) new or expanding multi-slip facilities located in Bay, Dixie, Escambia, Franklin, Gilchrist, Gulf, Hernando, Jefferson, Lafayette, Monroe (south of Craig Key), Nassau, Okaloosa, Okeechobee, Santa Rosa, Suwannee, Taylor, Wakulla or Walton County.

Additionally, in the same letter dated April 25, 2013, the Corps received the Service's concurrence for "*May affect, not likely to adversely affect*" determinations specifically made pursuant to Couplet G of the key for the repair or rehabilitation of currently serviceable multi-slip watercraft access structures provided all of the following are met: (1) the project is not located in an IMA, (2) the number of slips is not increased; (3) the number of existing slips is not in question; and (4) the improvements to the existing watercraft access structures do not allow increased watercraft usage. Upon receipt of such a programmatic concurrence, no further consultation with the Service for these projects is required.

Appendix H
Project Wetland and Other Surface Water Locations and Impact Areas

FDOT

SR 789 (Little Ringling Bridge)
From Bird Key Drive
to Sarasota Harbor West
FPID No.: 436680-1-22-01
Project Development and Environment Study

Project Wetland and Other Surface Water Locations and Impact Areas

Sources:
ESRI, 2022; RK&K, 2020

0 100 200 400
Feet
1 inch = 100 feet

SR 789 (Little Ringling Bridge)
From Bird Key Drive
to Sarasota Harbor West
FPID No.: 436680-1-22-01
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SR 789 (Little Ringling Bridge)
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FPID No.: 436680-1-22-01
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Project Wetland and
Other Surface Water
Locations and Impact Areas

Sources:
ESRI, 2022; RK&K, 2020

0 100 200 400
Feet
1 inch = 100 feet

Appendix I

Project Site Photos

Photo 1: View from east end of existing NB bridge facing southwest

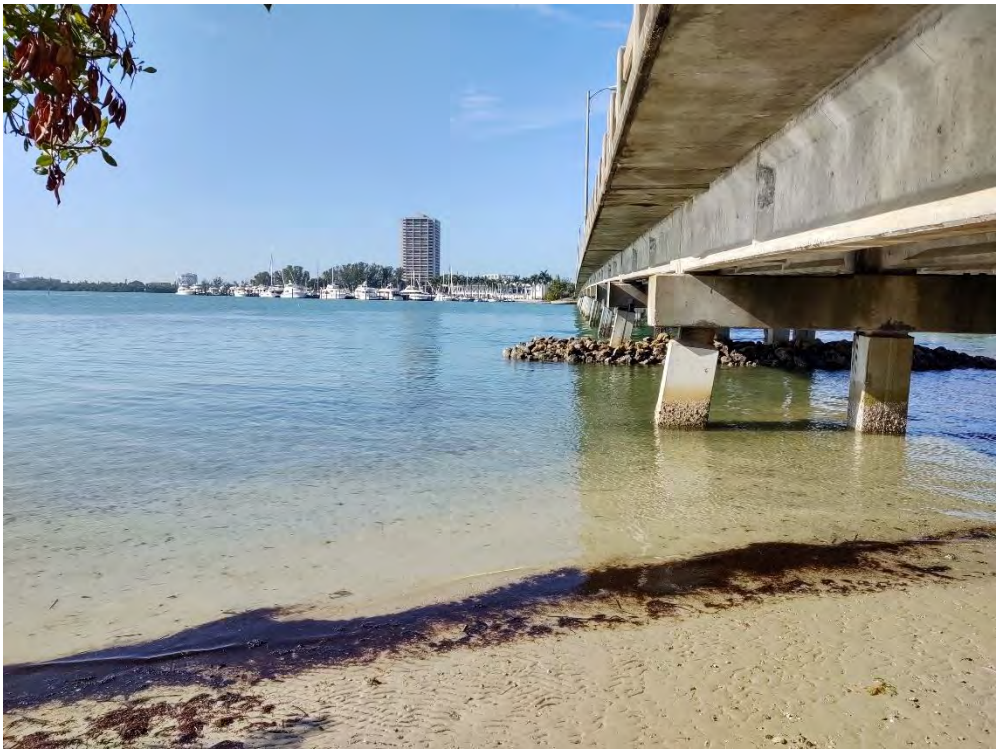


Photo 2: Bird Key Park intertidal area

Photo 3: Existing SB bridge facing southwest

Photo 4: Existing NB bridge approach facing northeast

Photo 5: SG-8 facing east

Photo 6: Manatee observed during SAV survey

Photo 7: SG-1 facing southwest

Photo 8: O-5 facing east

Photo 9: Existing SB bridge from water facing north

Photo 10: SG-5 facing west

Photo 11: WL-6 facing east

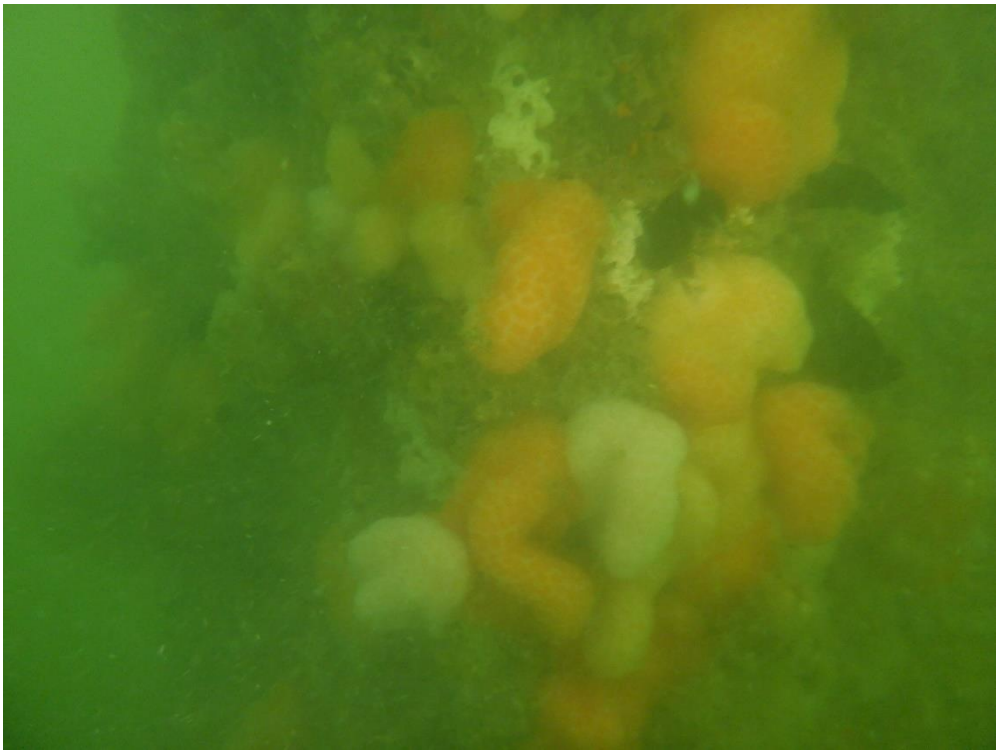
Photo 12: O-3 facing northeast

Photo 13: WL-2 facing northeast

Photo 14: SG-7 from NB bridge facing south

Photo 15: Typical live bottom on existing bridge piles

Photo 16: Typical live bottom on existing bridge piles



Appendix J

UniformMitigation Assessment Method (UMAM)

Data Sheets

PART I – Qualitative Description
(See Rule 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Little Ringling Bridge		6120: Mangroves

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
6120: Mangrove Swamps	E2FO3	Impact	0.07 (total acres) 0.03 (direct impacts)

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)
Sarasota Bay	Class III	Special Outstanding Florida Water (Sarasota Bay)

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

These sites are tidally influenced forested systems that are hydrologically contiguous with Sarasota Bay. Adjacent uplands contain SR 789, Bird Key Park, residential neighborhoods, and the Little Ringling Bridge.

Assessment area description

Areas containing mangroves.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
SR 789, Little Ringling Bridge, Bird Key Park, Bird Key Residential Community	Limited in abundance on-site, but similar to comparable habitats that are regionally common

Functions	Mitigation for previous permit/other historic use
Offers habitat and foraging for multiple species, enhances water quality, shoreline stabilization	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
These areas are anticipated to provide habitat and foraging for: fish, shellfish, mollusks, crustaceans	Gulf Sturgeon and smalltooth sawfish – potential refugia for juveniles Wood Stork – FT, possible foraging and roosting habitat Little Blue Heron, Roseate Spoonbill, and Tricolored Heron – ST, possible foraging and roosting habitat

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

Assessment conducted by:	Assessment date(s):
Brett Berube	10/6/2022

PART II – Quantification of Assessment Area (impact or mitigation)
(See Rules 62-345.500 and .600, F.A.C.)

Site/Project Name Little Ringling Bridge	Application Number	Assessment Area Name or Number 6120: Mangroves (WL-5)
Impact or Mitigation Impact	Assessment conducted by: Brett Berube	Assessment date: 10/6/2022

Scoring Guidance
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed

Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: 5	with: 0	These systems are able to provide optimal support for most wildlife species, but this support is limited by the surrounding bridges and riprap associated with the bridges. These features have isolated this system from nearby mangrove habitat and may inhibit support to and from this system.
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 8	with: 0	Most hydrologic indicators were consistent with the expectations for this system type. However, natural hydrology has been disrupted by the bridges and adjacent sea wall.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 5	with: 0	This system is notably small only contains one mature mangrove. Mangrove recruitment was not observed. Additionally, the system contains Brazilian pepper.

Score = sum of above scores/30 (if uplands, divide by 20)		
current or w/o pres: 0.6	with: 0	

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres = -0.6x 0.03= -0.018

Delta = [with-current]
-0.6

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

Form 62-345.300(2) [effective date 02-04-2004]
Incorporated by reference in paragraph 62-345.300(3)(b), F.A.C.

PART I – Qualitative Description
(See Rule 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Little Ringling Bridge		9110: Seagrass

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
9110: Seagrass	E2FO3	Impact	4.39 (total acres) 0.05 (direct impacts) 0.12 (temporary impacts)

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)
Sarasota Bay	Class III	Special Outstanding Florida Water (Sarasota Bay)

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

These sites area surveyed areas of submerged aquatic vegetation dominated by seagrass species within Sarasota Bay. Adjacent uplands contain SR 789, Bird Key Park, residential neighborhoods, and the Little Ringling Bridge.

Assessment area description

Areas of continuous and discontinuous seagrass.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
SR 789, Little Ringling Bridge, Bird Key Park, Bird Key residential community	Limited in abundance on-site, but similar to comparable habitats that are regionally common

Functions	Mitigation for previous permit/other historic use
Offers habitat and foraging for multiple species and enhances water quality	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
These areas are anticipated to provide habitat and foraging for: fish, shellfish, mollusks, crustaceans	Gulf Sturgeon and smalltooth sawfish – potential refugia for juveniles Eastern Indigo Snake – FT, possible foraging habitat Wood Stork – FT, possible foraging and roosting habitat Little Blue Heron, Roseate Spoonbill, and Tricolored Heron – ST, possible foraging and roosting habitat Manatee – FT, possible foraging habitat

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Manatees foraging

Additional relevant factors:

Assessment conducted by:	Assessment date(s):
Brett Berube	10/6/2022

PART II – Quantification of Assessment Area (impact or mitigation)
(See Rules 62-345.500 and .600, F.A.C.)

Site/Project Name Little Ringling Bridge	Application Number	Assessment Area Name or Number 9110: Seagrass (direct, SG-5)
Impact or Mitigation Impact	Assessment conducted by: Brett Berube	Assessment date: 10/6/2022

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current: 8 with: 0	This seagrass polygon lies between the two existing Little Ringling bridges. While it is able to provide and receive support with adjacent systems, the bridges are a barrier, although a minor one.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current: 8 with: 0	The flow between the two bridges was faster than expected and therefore this area was more turbid than expected. However, this does not appear to affect the density/continuousness of this seagrass.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current: 10 with: 0	The community structure is as expected for a Gulf coast seagrass bed.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres: 0.867	with: 0

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres = -0.867 x 0.05 = 0.05

Delta = [with-current]
-0.867

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART II – Quantification of Assessment Area (impact or mitigation)
(See Rules 62-345.500 and .600, F.A.C.)

Site/Project Name Little Ringling Bridge	Application Number	Assessment Area Name or Number 9110: Seagrass (temporary)
Impact or Mitigation Impact	Assessment conducted by: Brett Berube	Assessment date: 10/6/2022

Scoring Guidance	Optimal (10)	Moderate (7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

		w/o pres or current	with
.500(6)(a) Location and Landscape Support	The location and landscape support provided by these systems and that they receive from adjacent systems is anticipated to temporarily decrease during construction due to increased boat activity, sediment/turbidity barriers, and construction noise. However, it is anticipated to return to the area's normal levels post-construction.	8	7
.500(6)(b)Water Environment (n/a for uplands)	Turbidity may increase during project construction but is anticipated to return to the area's normal levels post-construction.	8	7
.500(6)(c) Community structure 1. Vegetation and/or 2. Benthic Community	Construction activities to these systems adjacent to the project area may result in reduction of seagrass continuousness due to factors such as increased turbidity and temporary shading/damage from construction barges.	10	9

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.867	0.77

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres = -0.097 x 0.12 = 0.01164

Delta = [with-current]
-0.097

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

Appendix K
Essential Fish Habitat (EFH) Impact Maps

FDOT

SR 789 (Little Ringling Bridge)
From Bird Key Drive
to Sarasota Harbor West
FPID No.: 436680-1-22-01
Project Development and Environment Study

EFH Impact Map

Sources:
ESRI, 2022; RK&K, 2020

N

0 100 200 400
Feet
1 inch = 100 feet

SR 789 (Little Ringling Bridge)
From Bird Key Drive
to Sarasota Harbor West
FPID No.: 436680-1-22-01
Project Development and Environment Study

EFH Impact Map

Sources:
ESRI, 2022; RK&K, 2020

0 100 200 400
Feet
1 inch = 100 feet

Project End

LEGEND

- Preferred Alternative Footprint
- EFH

SR 789 (Little Ringling Bridge)
From Bird Key Drive
to Sarasota Harbor West
FPID No.: 436680-1-22-01
Project Development and Environment Study

EFH Impact Map

Sources:
ESRI, 2022; RK&K, 2020

0 100 200 400
Feet
1 inch = 100 feet