DRAFT NATURAL RESOURCES EVALUATION REPORT

Florida Department of Transportation

District One

S.R. 789 (Longboat Key) PD&E Study

Limits of Project: From North Shore Road to Coquina Park Entrance

Manatee County, Florida

Financial Management Number: 436676-1-22-01

ETDM Number: 14382

Date: February 2026

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 U.S.C. § 327 and a Memorandum of Understanding dated May 26, 2022 and executed by the Federal Highway Administration and FDOT.

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

EXECUTIVE SUMMARY

The Florida Department of Transportation (FDOT), District One, is conducting a Project Development and Environment (PD&E) Study to determine the alignment and conceptual design of improvements to State Road (S.R.) 789 over Longboat Pass—including an evaluation of replacing the existing bridge—from North Shore Road to north of the Coquina Beach Park south entrance in Longboat Key and Bradenton Beach, Manatee County, Florida. The project limits are approximately one (1) mile. The study was conducted to meet the requirements of the National Environmental Policy Act (NEPA) and other related federal and state laws, rules, and regulations.

This Natural Resources Evaluation (NRE) reviews the possible impacts to wetlands and surface waters, federally and state protected species and designated Critical Habitat (CH), and Essential Fish Habitat (EFH) relative to the proposed project improvements. Measures to avoid, minimize, and mitigate for potential impacts is also discussed. The Preferred Alternative, which includes replacement of the existing 17-foot vertical clearance bascule Longboat Key Bridge with a 78-foot vertical clearance fixed bridge and associated roadway realignment, was assessed in this NRE.

PROTECTED SPECIES AND HABITATS

The project study area was evaluated for potential occurrences of federally and state protected plant and animal species in accordance with Section 7 of the Endangered Species Act (ESA) of 1973, as amended, and Chapters 5B-40 and 68A-27 of the Florida Administrative Code (F.A.C).

Based on evaluation of collected data and field reviews, the federally and state listed species discussed in **Table ES1** and **Table ES2** were observed or were determined to have the potential to occur within or adjacent to the project area. An effect determination was made for each of these species based on an analysis of the potential impacts of the proposed project. The project was evaluated for impacts to multiple species which may occur in the project vicinity that are not listed as threatened or endangered but receive other legal protection. These include the bald eagle, osprey and bat species, including the Brazilian free-tail, evening, big brown, Rafinesque's big-eared, and northern yellow. The tricolored bat (*Perimyotis subflavus*) and monarch butterfly (*Danaus plexippus*) are proposed for listing and were also evaluated. Based on the FDOT Tricolored Bat Consultation Guidance (January 2025), the proposed project was determined to have "no effect" on the tricolored bat. A determination of effect was not made for the monarch butterfly. If the listing status for these species is elevated to threatened or endangered, FDOT commits to reinitiating consultation with the United States Fish and Wildlife Service (USFWS) during the design and permitting phase of the project.

Table ES1: Federally Protected Species Impact Determinations

Project Effect Determinations	Federally Listed Species
	BIRDS
No Effect	Florida scrub-jay (*Aphelocoma coerulescens)*
	Eastern black rail (*Laterallus jamaicensis ssp.*)
May Affect, Not Likely to Adversely Affect	Wood stork (*Mycteria americana)*
	Piping plover (*Charadrius melodus)*
	Rufa red knot (*Calidris canatus rufa)*
	REPTILES
No Effect	American crocodile (*Crocodylus acutus*)
May Affect, Not Likely to Adversely Affect	Hawksbill sea turtle (*Eretmochelys imbricata)*
	Loggerhead sea turtle (*Caretta caretta)*
	Green sea turtle (*Chelonia mydas)*
	Leatherback sea turtle (*Dermochelys coriacea)*
	Kemp's ridley sea turtle (*Lepidochelys kempii)*
	Eastern indigo snake (*Drymarchon corais couperi)*
	MAMMALS
No Effect	Tricolored bat (*Perimyotis subflavus*)*****
May Affect, Not Likely to Adversely Affect	West Indian manatee (*Trichechus manatus)*
	PLANTS
No Effect	Pygmy fringe-tree (*Chionanthus pygmaeus)*
	LICHENS
No Effect	Florida perforate cladonia (*Cladonia perforata*)
	FISH
May Affect, Not Likely to Adversely Affect	Gulf sturgeon (*Acipenser oxyrinchus desotoi)*
	Smalltooth sawfish (*Pristis pectinata)*
	Giant manta ray (*Mobula birostris*)

***** *The tricolored bat (Perimyotis subflavus) is currently proposed for federal listing and is given a "no effect" determination based on the January 2025 FDOT Tricolored Bat Consultation Guidance.*

Table ES2: State Protected Species Impact Determinations

Project Effect Determinations	State Listed Species
	BIRDS
No Effect Anticipated	Florida sandhill crane (*Grus canadensis pratensis)*
No Adverse Effect Anticipated	Black skimmer (*Rynchops niger*)
	Snowy plover (*Charadrius nivosus)*
	Least tern (*Sternula antillarum)*
	Little blue heron (*Egretta caerulea)*
	Reddish egret (*Egretta rufescens)*
	Tricolored heron (*Egretta tricolor)*
	Roseate spoonbill (*Platalea ajaja)*
	American oystercatcher (*Haematopus palliates*)
	REPTILES
No Adverse Effect Anticipated	Gopher tortoise (*Gopherus polyphemus)*
	PLANTS
No Effect Anticipated	Sanibel lovegrass *(Eragrostis pectinacea var. tracyi)*
	Florida loosestrife (*Lythrum flagellare*)

CRITICAL HABITAT

The project study area was evaluated for CH as defined by Congress 50 CFR Chapter IV, Subchapter A, Part 424.

The project is located within the National Marine Fisheries Service (NMFS)-designated proposed CH for the green sea turtle (*Chelonia mydas*) and the USFWS-designated proposed CH for the rufa red knot (*Calidris canatus rufa*). The project area also falls within USFWS-designated nesting beach CH for the loggerhead sea turtle. The Preferred Alternative will impact 0.01 acres of nesting beach CH, which is approximately 0.009% of the total terrestrial CH in Longboat Key. This impact represents a very small fraction of the designated CH for this species in the project vicinity and does not diminish the overall value of the CH as a whole for the conservation of the loggerhead sea turtle. Therefore, the Preferred Alternative "will not result in destruction or adverse modification" of CH for the loggerhead sea turtle.

WETLANDS AND SURFACE WATERS

For this evaluation, wetlands and surface waters are defined pursuant to 62-340, F.A.C., Section 373.019 (21) and (27) Florida Statutes (F.S.), the 1987 Corps of Engineers Wetland Delineation Manual with Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Atlantic and Gulf Coastal Plain Region, and Executive Order (EO) 11990 – Protection of Wetlands.

For the Preferred Alternative, impacts include 0.11 acres of jurisdictional mangrove wetlands, consisting of 0.02 acres from pile installation and 0.09 acres from shading associated with the overhead bridge structure. Impacts to seagrass resources total 0.15 acres of continuous and discontinuous seagrass beds, with 0.01 acres from pile installation and 0.14 acres from shading. Additionally, 0.35 acres of surface waters, consisting of unconsolidated bottom and the water column within Longboat Pass and the tidal embayment south of Greer Island will be impacted by pile installation, and 1.34 acres will be affected by shading. A Uniform Mitigation Assessment Method (UMAM) analysis was conducted to evaluate functional losses associated with these impacts. The Preferred Alternative will result in 0.06 estuarine forested units of functional loss for mangrove wetlands and 0.05 functional units for seagrass habitat including the unconsolidated bottom and water column of Longboat Pass and the adjacent tidal embayment connected to Sarasota Bay. The project study area is within the service areas of the Nature Coast Mitigation Bank and the Long Bar Pointe Mitigation Bank, both of which provide compensatory mitigation for estuarine forested (mangrove) wetlands. It is anticipated that seagrass mitigation will be accomplished via permittee-responsible mitigation through District One's Skyway Wave Attenuation Devices (WADs) project.

There are no practicable alternatives to the proposed impacts due to the need to address existing bridge deficiencies and safety considerations. In accordance with Presidential Executive Order (EO) 11990, the FDOT has undertaken all actions to minimize the destruction, loss or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities. There are no practicable alternatives to construction impacts occurring in wetlands. The proposed project will have no significant short-term or long-term adverse impacts to wetlands.

ESSENTIAL FISH HABITAT

In accordance with the EFH chapter of the FDOT PD&E manual and the Magnuson-Stevens Fishery Conservation and Management Act (MSA) of 1996 (50 CFR Section 600.920), as amended though January 12, 2007, and as administered by the NOAA NMFS, an EFH assessment was conducted to describe how the Preferred Alternative may affect EFH within the study area.

Impacts to EFH from the Preferred Alternative are 0.61 acres. These include 0.02 acres of direct impacts from pile installation and 0.09 acres of indirect impacts from shading to mangroves; 0.01 acres of direct impacts from pile installation and 0.14 acres of indirect impacts from shading to continuous and discontinuous seagrass beds; and 0.35 acres of direct impacts from pile installation to unconsolidated sandy bottom. The proposed bridge will be constructed near the existing bridge, with a slight overlapping footprint ranging from approximately 25 feet west of, to directly adjacent to the existing structure. Because the proposed bridge is similar in size and alignment to the existing bridge, removal of the existing bridge is expected to offset impacts, resulting in minimal permanent impacts to EFH.

The Preferred Alternative will result in water quality improvements to EFH in the project area. Currently, there are no stormwater management facilities within the project limits. In the Preferred Alternative, runoff with be conveyed to the bridge approaches into a pond to the north or a swale to the south, thereby minimizing water quality impacts from stormwater discharges from roadway surfaces. Compensatory mitigation for mangrove and seagrass impacts will be provided through approved mitigation banks or other mechanisms meeting state and federal requirements. Mitigation requirements will be determined in consultation with NMFS during design. FDOT will also reinitiate EFH consultation with NMFS in the design and permitting phase once details for construction of the bridge are available. An EFH assessment is included as part of this NRE. With avoidance and minimization measures, best management practices (BMPs), and compensatory mitigation, adverse effects to EFH are expected to be **"minimal"**.

1.0 INTRODUCTION

The Florida Department of Transportation (FDOT), District One, is conducting a Project Development and Environment (PD&E) Study to determine the alignment and conceptual design of the proposed improvements to State Road (S.R.) 789 (Longboat Key) over Longboat Pass—including an evaluation of replacing the existing bridge—from North Shore Road to north of the Coquina Beach Park south entrance Manatee County, Florida. The total project length is approximately one (1) mile, and the project limits are shown in **Figure 1**.

The purpose of this Natural Resources Evaluation (NRE) is to document wetlands and surface waters, federal and state protected species and designated Critical Habitat (CH), and Essential Fish Habitat (EFH) involvement within the proposed project's study corridor, analyze potential impacts to these communities, and document potential mitigation and conservation alternatives to compensate for unavoidable impacts. This report has been prepared using the FDOT PD&E Manual guidelines and standard environmental assessment practices of reviewing records of regulatory agencies, site reconnaissance, and literature review. The goals of this study include addressing structural integrity and operational deficiencies, enhancing multimodal transportation options, and improving emergency evacuation and response times.

1.1 PROJECT DESCRIPTION

The S.R. 789 bridge (also known as Longboat Pass Bridge or Longboat Key Bridge) serves as the primary north-south connection from Longboat Key to Bradenton Beach and Anna Maria Island. The original Longboat Key Bridge was built in 1926. In 1932, it was washed away by a hurricane, severing the connection between Longboat Key and Anna Maria Island. The current Longboat Key Bridge (Structure Number 130057) is a bascule bridge built in 1957 slightly east of the original alignment and underwent major rehabilitation in 2005, including concrete and steel repairs, deck replacement, reconditioning of the Hopkins frame, refurbishment of the drive and span lock machinery, and replacement of the electrical power and control systems.

Longboat Key Bridge crosses Longboat Pass, a navigable waterway and federal channel managed by the United States Coast Guard (USCG) and designated as sovereign submerged land (SSL) by the Florida Department of Environmental Protection (FDEP) which serves as a northwestern entry point from the Gulf of Mexico to Sarasota Bay. The bridge has a main channel width of 45.9 feet with a minimum vertical clearance of approximately 17 feet with the bascule span in the closed position. With the planned replacement of the Cortez Bridge to the north with a 65-foot vertical clearance fixed bridge and the discontinued maintenance/dredging of the New Pass channel to the south, the Longboat Key Bridge could become the only viable access point for vessels with an air draft greater than 65 feet. The John Ringling Bridge to the south also provides less than 65 feet of clearance. If the Longboat Key Bridge is replaced with a structure providing less than 65 feet of vertical clearance, vessels exceeding this height would be unable to enter or exit Sarasota Bay. **Figure 2** is a map of the project area in relation to these key areas.

Figure 1: Project Location

S.R. 789 (Longboat Key) PD&E Study
From North Shore Road to Coquina Park Entrance
FPID No. 436676-1-22-01
Manatee County

Image Source: APLUS
Imagery Date: 2024

Figure 2: Project Area

S.R. 789 (Longboat Key) PD&E Study
From North Shore Road to Coquina Park Entrance
FPID No. 436676-1-22-01
Manatee County

Image Source: ESRI
Image Date: 2024

The project was evaluated through FDOT's Efficient Transportation Decision Making (ETDM) process (Project #14382). The Environmental Technical Advisory Team (ETAT) evaluated the project's effects on various natural, physical, and social resources. Comments were received from the U. S. Environmental Protection Agency (USEPA), U. S. Army Corps of Engineers (USACE), USCG, National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS), United States Fish and Wildlife Service (USFWS), FDEP, Florida Department of Agriculture and Consumer Services (FDACS), Florida Fish and Wildlife Conservation Commission (FWC), and Southwest Florida Water Management District (SWFWMD). All comments will be addressed through the submission of this NRE document as well as applicable permits.

1.2 PURPOSE AND NEED

The purpose of the project is to address structural integrity and operational deficiencies of the S.R. 789 (Longboat Key) Bridge [Structure Number 130057]. 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 will evaluate alternatives for the reconstruction/rehabilitation, with consideration of bicycle and pedestrian facilities, of approximately one (1) mile of roadway that provides a connection between nearby neighborhoods and recreational facilities (Longboat Key to Bradenton Beach). The need for the project is based on the following criteria:

BRIDGE DEFICIENCIES: Address Structural Integrity and Operational Deficiencies

The S.R. 789 (Longboat Key) Bridge was reconstructed in 2005; however, the original structure was built in 1957. Despite being less than fifty-years old, the typical expected design life for transportation infrastructure, the S.R. 789 (Longboat Key) Bridge between North Shore Road and the entrance to Coquina Park is operationally deficient.

Based on a February 2016 FDOT bridge inspection report, the S.R. 789 (Longboat Key) Bridge received a sufficiency rating of 43.9 (on a scale of 0-100). Sufficiency rating is an overall rating of a bridge's fitness to remain in service. A bridge with a sufficiency rating of 80 or less is eligible for bridge rehabilitation funding. A sufficiency rating below 50.0 qualifies a bridge for replacement funds. The bridge conditions are as follows:

- Overall Condition: Fair
- Deck: Satisfactory
- Superstructure: Satisfactory
- Substructure: Fair
- Deck Geometry Appraisal: High priority of replacement
- Pier and abutment protection: In place but in a deteriorated condition
- River control devices and embankment protection: Widespread minor damage
- Recommended work: Structural repairs, including hydraulic replacements

MODAL INTERRELATIONSHIPS: Improve Multimodal Transportation Options

S.R. 789 (Longboat Key) serves as the primary connection from Longboat Key to Bradenton Beach and Anna Maria Island and is frequently used by bicyclists and pedestrians due to the adjacent parks and recreational facilities [Greer Island Park, Coquina Bayside Park & Boat Ramp, and Coquina Beach Park, Coquina Beach Trail, Longboat Key Trail Corridor, Leffis Key, and the Florida Gulf Coast Trail SUN Trail]. While there are five-foot wide sidewalks on both sides of the bridge and a bicycle lane on each side of the roadway leading up to the bridge, there are no shoulders or dedicated bicycle facilities on the bridge itself. 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 one (1) mile of roadway on S.R. 789 (Longboat Key).

SAFETY: Improve Emergency Evaluation and Response Times

Serving as part of the emergency evacuation route network designated by the Florida Division of Emergency Management, S.R. 789 (Longboat Key) plays a critical role in facilitating traffic during emergency evacuation periods as the primary connection between Longboat Key, Bradenton Beach, and Anna Maria Island. The entire project corridor is located in Manatee County's Hurricane Storm Surge Category "A". The project will further enhance emergency evacuation efficiency leading to improved evacuation and responses times. Additionally, the potential reconstruction and/or rehabilitation of S.R. 789 (Longboat Key) bridge would make it more resilient to climate vulnerabilities.

1.3 EXISTING FACILITY AND PROPOSED IMPROVEMENTS

1.3.1 EXISTING FACILITY

S.R. 789 is classified as an Urban Major Collector and consists of a two-lane, undivided roadway between North Shore Road and the entrance to Coquina Park. The Longboat Key Bridge features a movable bascule span with steel-reinforced concrete main spans and a cast-in-place concrete deck. The bridge has a main channel width of 45.9 feet with a minimum vertical clearance of approximately 17 feet with the bascule span in the closed position. The bridge has two (2) 12-foot-wide travel lanes with no shoulders. Each lane is bordered by a small concrete barrier and a 5-foot-wide sidewalk. On the northbound approach, a 5-foot-wide sidewalk is located on the west side of S.R. 789, while no sidewalk is provided on the southbound approach. Bicycle lanes are present in both directions approaching the bridge but are not carried across the bridge structure.

1.3.2 PREFERRED ALTERNATIVE DETAILS

High Level Fixed Bridge Alternative – This includes the replacement of the existing Longboat Key Bridge with a 78-foot vertical clearance fixed bridge with 90 feet of horizontal clearance between fenders. The typical section includes: one (1) 12-foot-wide protected shared use path on the west side of the bridge, two (2) 8-foot-wide outside shoulders, two (2) 11-foot-wide travel lanes and one (1) 8-foot-wide protected sidewalk on the east side of the bridge. On the south approach, the 12-foot-wide shared use path and 8-foot sidewalk continue and transition into 6-foot sidewalks near the North Shore Road intersection. On the north approach, the 12-foot-wide shared use path connects to the existing 6-foot

sidewalk at the Coquina Beach south entrance, while the 8-foot sidewalk terminates at the north end of the Coquina Beach pedestrian crossing. The Preferred Alternative eliminates scuppers and incorporates stormwater conveyance systems directing roadway runoff to treatment facilities located within the bridge approaches and existing right-of-way (ROW). Runoff will be routed to a dry swale at the southern end of the project and to a dry retention pond at the northern end, allowing for infiltration and treatment prior to discharge. The alternative would require ROW acquisition from the north side of the bridge at the Manatee County Marine Rescue Facility (county-owned property), along with intersection and access management modifications at the north end of the bridge near the Coquina Beach entrance. Lighting improvements are limited to Coast Guard-compliant navigational lighting and pedestrian safety lighting at the proposed Coquina Beach Park midblock crossing. A Lighting Justification Report (LJR) will be prepared during the design phase to evaluate the need for corridor lighting and assess compliance with federal and state wildlife lighting regulations. The proposed typical section of the Preferred Alternative is shown in **Figure 3**. Rehabilitation is not considered a feasible alternative due to the degraded condition of the existing bridge.

Figure 3-1: Preferred Alternative – S.R. 789 at Coquina Beach Entrance

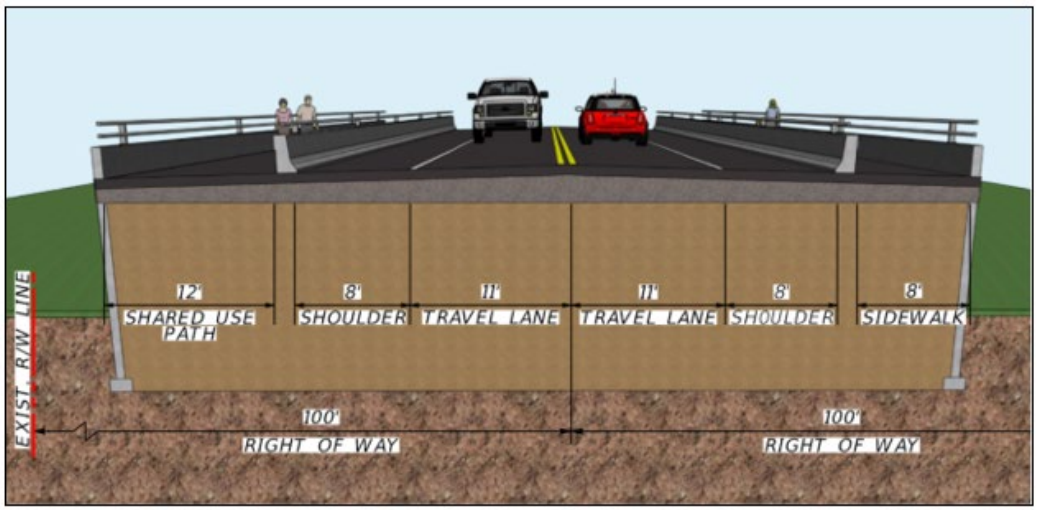


Figure 3-2: Preferred Alternative – S.R. 789 (Longboat Key) Bridge

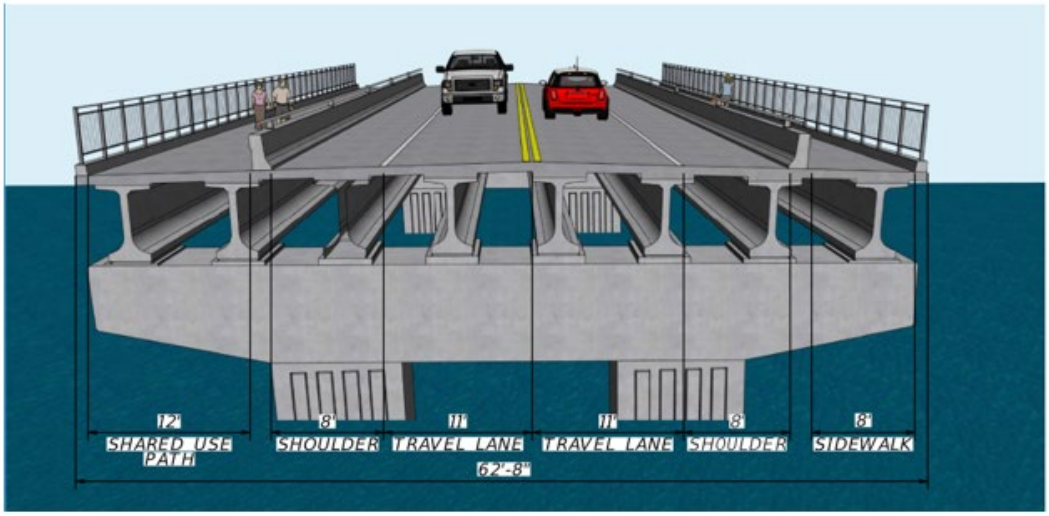
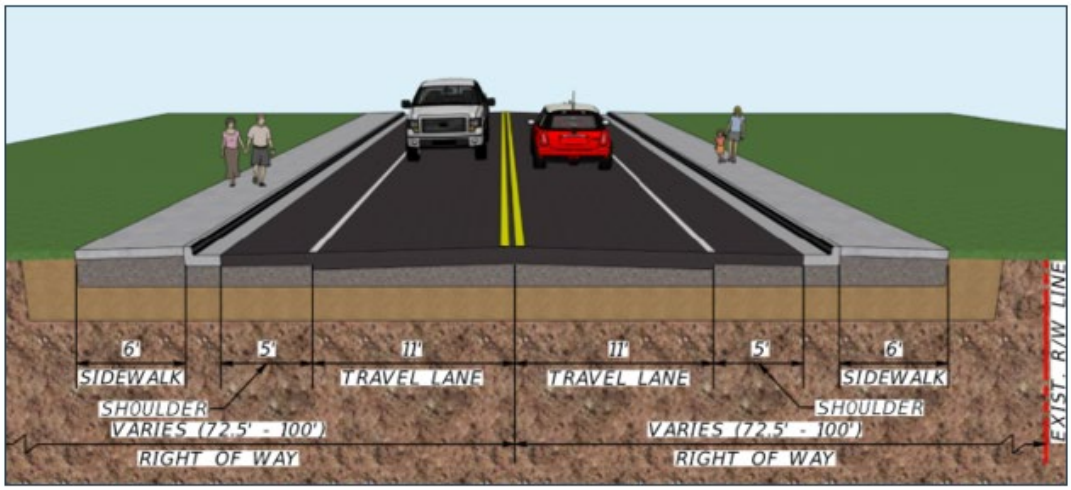


Figure 3-3: Preferred Alternative – S.R. 789 at North Shore Road



2.0 EXISTING ENVIRONMENTAL CONDITIONS

This section presents a description of existing conditions within the project study area, including soils and land use/land cover types within both upland and wetland communities. It also includes information on existing conservation lands and easements, as well as special designations such as Outstanding Florida Waters (OFW) and Aquatic Preserves (AP). For this report, the study area is defined as a 500-foot buffer extending 500 feet east and west of the Gulf of Mexico Drive (S.R. 789) centerline as well as 500 feet north and south of the project limits, including preferred pond sites.

2.1 METHODOLOGY

In order to assess the approximate locations and boundaries of existing soils, land use and cover, wetlands and surface waters, and special designation and conservation areas within the project area, the following site-specific data were collected and reviewed:

- Aerial photography: FDOT APLUS (2024);
- FDOT Environmental Screening Tool. Available online on the ETDM website: fla-etat.org.
- Florida Association of Environmental Soil Scientists, Hydric Soils of Florida Handbook, 4th ed., (Hurt et al. 2007);
- FWC's Cooperative Land Cover, Version 3.8. Dec. 2024;
- SWFWMD Florida Land Use, Cover and Forms Classification System (FLUCFCS) Geographic Information System (GIS) Database (SWFWMD 2023);
- U.S. Department of Agriculture (USDA), Natural Resource Conservation Service (NRCS), Web Soil Survey;
- USFWS, National Wetlands Inventory (NWI), Wetlands Online Mapper;
- Florida Natural Areas Inventory (FNAI), Florida Managed Areas, 2025;
- U.S. Geological Survey (USGS) topographical maps; and
- USFWS, Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979).

2.2 RESULTS

Based on site-specific data searches, a total of six (6) NRCS soil types (**Table 1**), four (4) upland habitat types (**Table 2**), and six (6) wetland and two (2) surface water habitat types (**Table 3**) were identified within the study area.

2.2.1 SOILS

The soil types that occur within the study area were determined using the NRCS GIS soil layer. **Table 1** provides a summary of these soil types, including the general hydric designation, soil identification (ID) and name, total area, and percent of the study area. A map of the 2024 NRCS soils within the project study area is provided in **Figure 4** – see **Appendix A** for descriptions of soil types.

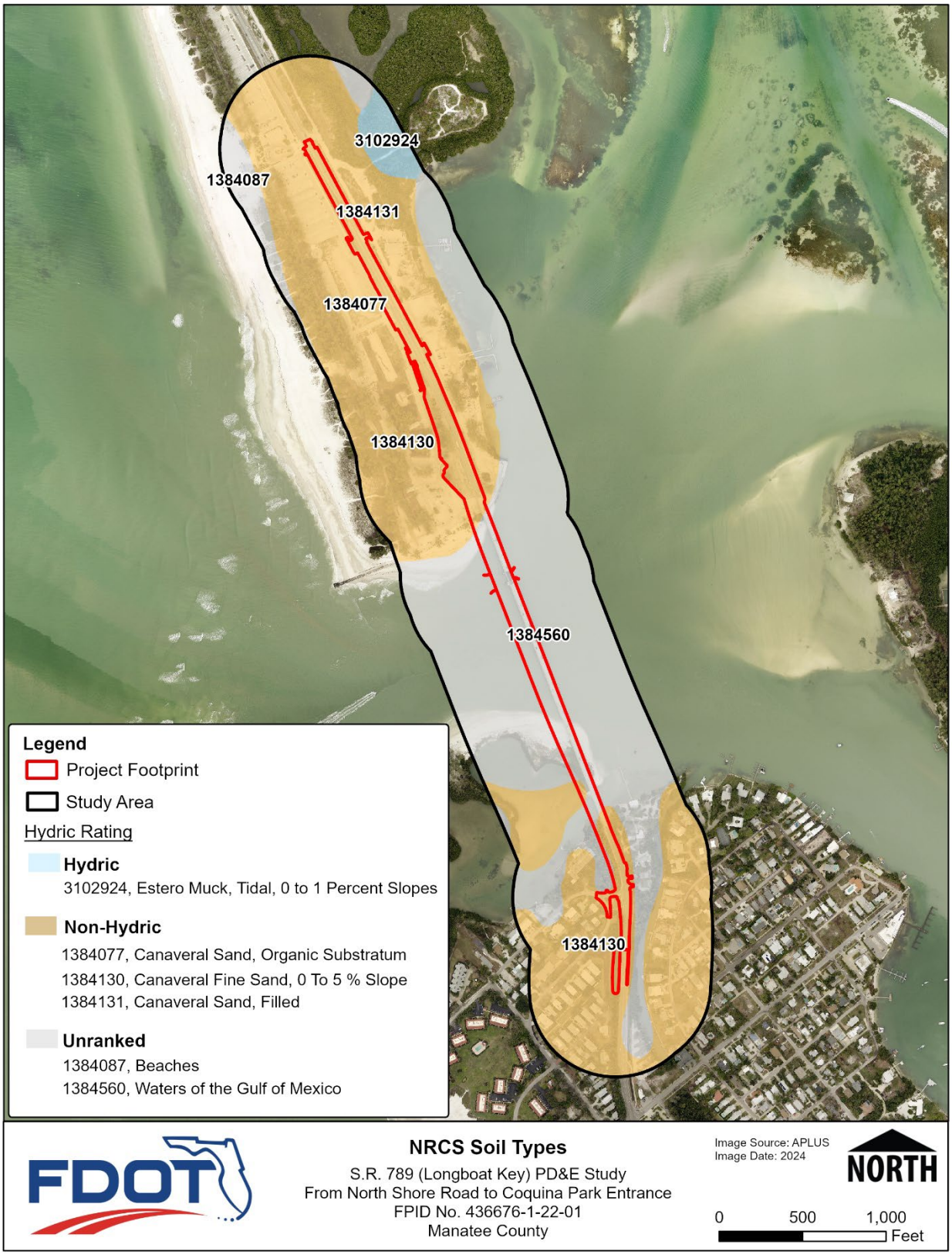

3102924
1384087
1384131
1384077
1384130
1384560
1384130
Legend
Project Footprint
Study Area
Hydric Rating
Hydric
3102924, Estero Muck, Tidal, 0 to 1 Percent Slopes
Non-Hydric
1384077, Canaveral Sand, Organic Substratum
1384130, Canaveral Fine Sand, 0 To 5 % Slope
1384131, Canaveral Sand, Filled
Unranked
1384087, Beaches
1384560, Waters of the Gulf of Mexico
FDOT
NRCS Soil Types
S.R. 789 (Longboat Key) PD&E Study
From North Shore Road to Coquina Park Entrance
FPID No. 436676-1-22-01
Manatee County
Image Source: APLUS
Image Date: 2024
NORTH
0
500
1,000
Feet

Table 1: NRCS Soil Types within Study Area

Soil Name	Soil ID	Hydric Soils	Total Area (Acres)	Percent of Study Area
Waters of the Gulf of Mexico	1384560	N/A	63.96	40.38%
Estero Muck, Tidal, 0 to 1 Percent Slopes	3102924	Yes	2.69	1.70%
Canaveral Fine Sand, 0 to 5 Percent Slopes	1384130	No	53.03	33.48%
Canaveral Sand, Filled	1384131	No	20.17	12.73%
Canaveral Sand, Organic Substratum	1384077	No	14.65	9.25%
Beaches	1384087	N/A	3.89	2.46%
		Total	**131.39**	**100%**

2.2.2 LAND USE AND LAND COVER

Existing land use within the study area was identified using the FLUCFCS GIS layer from the SWFWMD. A map of the 2025 Level 3 land use is provided in **Figure 5** – see **Appendix B** for a comprehensive list of land uses described in this document. **Table 2** summarizes the existing land use acreages in the project study area by FLUCFCS code.

Each approach to the bridge contains upland ROW sodded with bahia grass (*Paspalum notatum*) and landscaped with a mix of native and non-native plants. Native species include sea grapes (*Coccoloba uvifera*) and sabal palms (*Sabal palmetto*), while non-native species include Australian pine (*Casuarina equisetifolia*), beach naupaka (*Scaevola taccada*), and Brazilian pepper (*Schinus terebinthifolia*). Native habitat types are present under and adjacent to the bridge, including sand dunes, seagrass beds, and mangroves and are discussed in greater detail in **Section 4.0** and **Section 5.0**.

Table 2: Existing Land Use/Land Cover within Study Area

FLUCFCS Level 1 Description	FLUCFCS Code, Level 3 Description	Total Area (Acres)	Percent of Total Project Area
Urban and Built-Up	1300, Residential, High Density (Six or More Dwelling Units per Acre)	17.39	10.98%
Urban and Built-Up	1400, Commercial and Services	14.64	9.24%
Urban and Built-Up	1800, Recreational	50.69	31.99%
	Total	**82.73**	**52.21%**
Upland Forests	4200, Upland Hardwood Forests	12.25	7.73%
	Total	**12.25**	**7.73%**

FLUCFCS Level 1 Description	FLUCFCS Code, Level 3 Description	Total Area (Acres)	Percent of Total Project Area
Water	5400, Bays and Estuaries	60.54	38.20%
	Total	**60.54**	**38.20%**
Wetlands	6120, Mangrove Swamps	2.95	1.86%
	Total	**2.95**	**1.86%**
	Overall Total	**158.46**	**100%**

FLUCFCS codes and acreages as obtained directly from available SWFWMD FLUCFCS data.

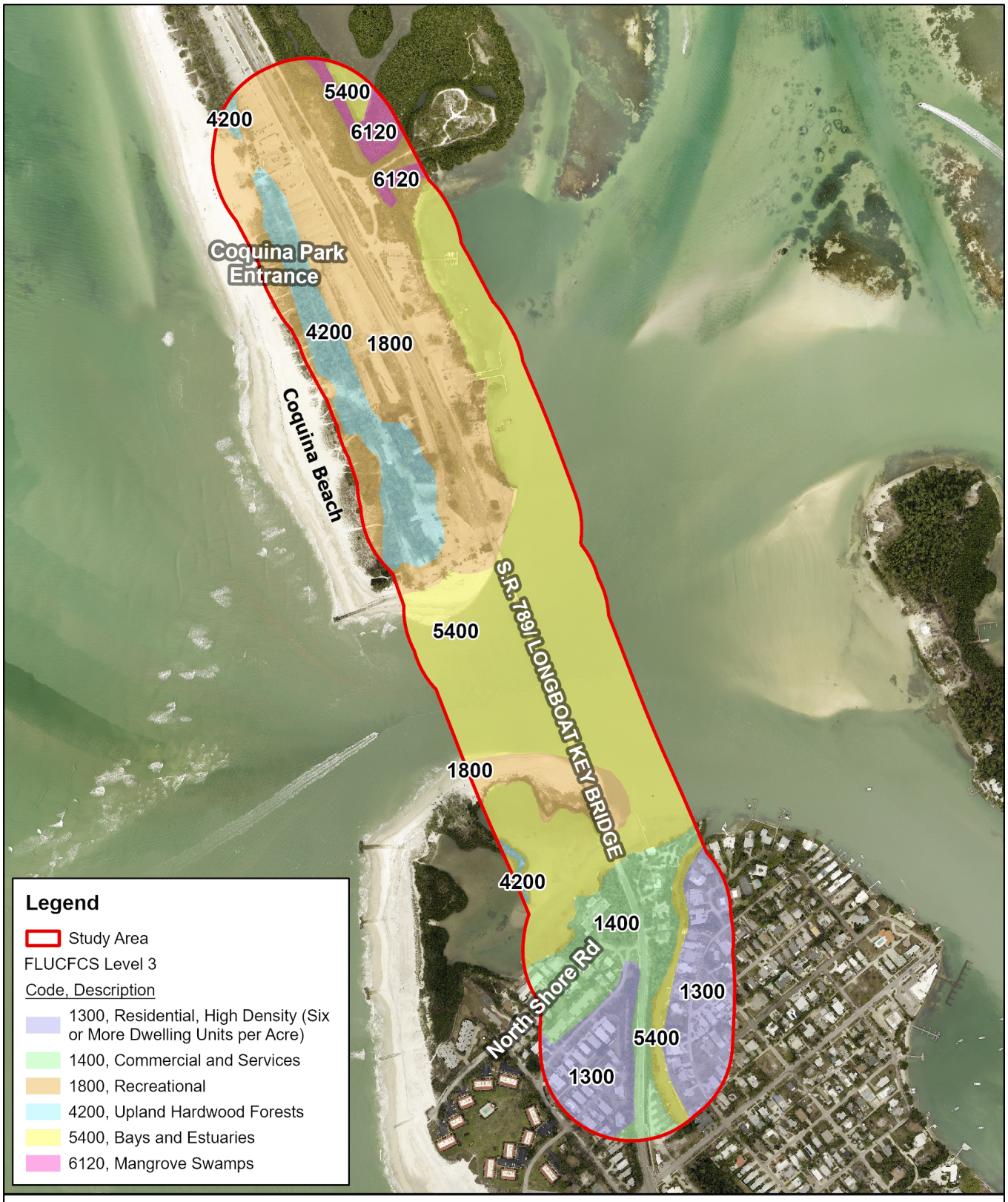


Figure 5: Existing Land Use

S.R. 789 (Longboat Key) PD&E Study
From North Shore Road to Coquina Park Entrance
FPID No. 436676-1-22-01
Manatee County

Data Source: SWFWMD
Image Source: APLUS
Image Date: 2024

NORTH

0 550 1,100 Feet

2.2.3 WETLANDS AND SURFACE WATERS

Surface waters in the study area consist primarily of Anna Maria Sound, Sarasota Bay, Longboat Pass, and Greer Island associated tidal embayment and wetlands. See **Appendix C** for comprehensive list of wetlands and surface waters described in this document. These features are tidally influenced and support estuarine habitats along the bayfront and shoreline margins of Longboat Key and Anna Maria Island. **Table 3** summarizes the wetland and surface water types identified and acreages within the study area based on NWI data. Wetlands and surface waters are discussed in greater detail in **Section 4.0** and **Section 5.0**.

Table 3: Existing Wetlands and Surface Waters within Study Area

Wetland System Type	FLUCFCS Code, Description	NWI Classification	Total Area (Acres)	Percentage of Total Project
Estuarine and Marine Wetland	5400, Bays and Estuaries	E2ABM	14.10	19.87%
Estuarine and Marine Wetland	5400, Bays and Estuaries	M2US2P	0.70	0.98%
Estuarine and Marine Wetland	5400, Bays and Estuaries	E2US2N	2.54	3.58%
Estuarine and Marine Wetland	5400, Bays and Estuaries	E2USN	0.10	0.14%
Estuarine and Marine Wetland	5400, Bays and Estuaries	E2US2P	2.08	2.93%
Estuarine and Marine Wetland	6120, Mangrove Swamps	E2SS3N	4.39	6.17%
		Total Wetlands	**23.91**	**33.69%**
Estuarine and Marine Deepwater	5400, Bays and Estuaries	E1UBL	46.86	66.03%
Riverine	6120, Mangrove Swamps	R5UBH	0.21	0.29%
		Total Surface Waters	**47.07**	**66.32%**
		Total Wetlands and Surface Waters	**70.97**	**100%**

FLUCFCS codes from available SWFWMD FLUCFCS data. NWI codes and acreages from available USFWS NWI data.
E2ABM: Estuarine, Intertidal, Aquatic Bed, Irregularly Exposed
E2SS3N: Estuarine, Intertidal, Scrub-Shrub, Broad-Leaved Evergreen, Regularly Flooded
E2US2N: Estuarine, Intertidal, Unconsolidated Shore, Mud, Regularly Flooded
E2USN: Estuarine, Intertidal, Unconsolidated Shore, Regularly Flooded
E2US2P: Estuarine, Intertidal, Unconsolidated Shore, Sand, Irregularly Flooded
E1UBL: Estuarine, Subtidal, Unconsolidated Bottom, Subtidal
M2US2P: Marine, Intertidal, Unconsolidated Shore, Sand, Irregularly Flooded
R5UBH: Riverine, Unknown Perennial, Unconsolidated Bottom, Permanently Flooded

2.2.4 SPECIAL DESIGNATIONS AND CONSERVATION AREAS

The project crosses Longboat Pass, part of Sarasota Bay, which is classified as a Class II Special OFW and holds a National Estuary Program (NEP) distinction. The NEP is a place-based program of the USEPA that protects and restores the water quality and ecological integrity of nationally significant estuaries. The USEPA provides funding, guidance, and technical assistance to local NEPs that manage individual estuaries. Conservation lands in the study area include Leffis Key Preserve, located approximately 500

feet northeast of the project limits, and an easement within Greer Island Park, located approximately 400 feet north of the existing ROW (**Figure 6**). Longboat Pass is a federal channel managed by the USCG and is considered sovereign submerged land (SSL) by the FDEP Division of State Lands. Structure Number 130057 is authorized under SSL Easement No. 21136. The project is also within a unit of the Coastal Barrier Resources System, a federally designated area that conserves coastal barriers and associated habitat.

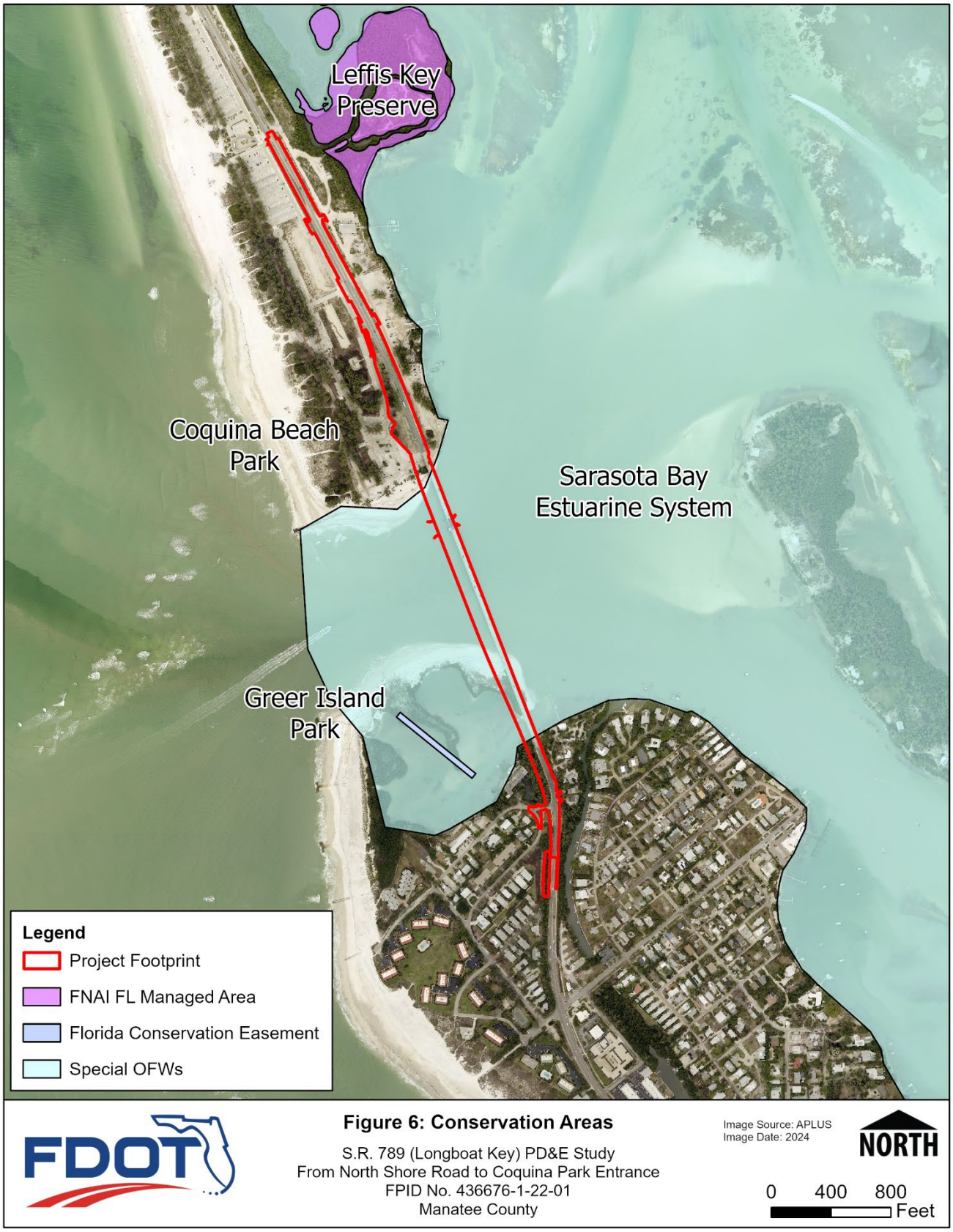


Figure 6: Conservation Areas

S.R. 789 (Longboat Key) PD&E Study
From North Shore Road to Coquina Park Entrance
FPID No. 436676-1-22-01
Manatee County

3.0 PROTECTED SPECIES AND HABITAT

Listed species are afforded special protective status by federal and state agencies. This protection is federally administered by the United States Department of the Interior–USFWS, and NOAA-NMFS pursuant to the Endangered Species Act (ESA) of 1973 (as amended). The USFWS administers the federal list of Endangered and Threatened Wildlife and Plants (50 CFR 17.11-12). Federal protection of marine species is the responsibility of the NOAA-NMFS. Impacts to CH were also evaluated per Section 3(5)(A) of the ESA. The study area was also evaluated for the occurrence of CH as defined by the ESA and 50 CFR Part 424.

The State of Florida affords special protection to animal species designated as threatened or endangered, pursuant to Chapter 68A-27, F.A.C. Florida also affords protection to federally listed species, thus all federally listed species are considered state listed species pursuant to Rule 68A-27.003(b), F.A.C. The State of Florida also protects and regulates plant species designated as endangered, threatened, or commercially exploited as identified on the Regulated Plant Index (5B-40.0055, F.A.C.), which is administered by the FDACS, Division of Plant Industry, pursuant to Chapter 5B-40, F.A.C. This NRE document serves as a biological assessment for the project, and the analysis is consistent with the Protected Species and Habitat Chapter of the PD&E Manual. The following sections describe the methodology used to assess the potential for occurrence of protected species and to identify the effects that implementation of the Preferred Alternative may have on protected species in accordance with the PD&E Manual and with Federal Highway Administration's (FHWA) Management of the ESA Environmental Analysis and Consultation Process.

3.1 AGENCY COORDINATION

Reviewing agency comments from the ETDM Programming Screen Summary Report (#14382) regarding protected species included input from the USFWS, NMFS, FWC, and the SWFWMD. The potential presence of several federally listed species including the rufa red knot (*Calidris canutus rufa*), piping plover (*Charadrius melodus*), wood stork (*Mycteria americana*), and nesting sea turtle species were noted and a biological assessment was recommended to be prepared as part of the study. Concern was also expressed regarding potential loss of beach, seagrass, mangrove habitat and potential adverse effects to listed aquatic and shorebird species. It was also noted that the substrate under the bridge and potential bridge location supports habitats for the smalltooth sawfish (*Pristis pectinata*), Gulf sturgeon (*Acipenser oxyrinchus desotoi*), and the West Indian Manatee (*Trichechus manatus*).

3.2 METHODOLOGY

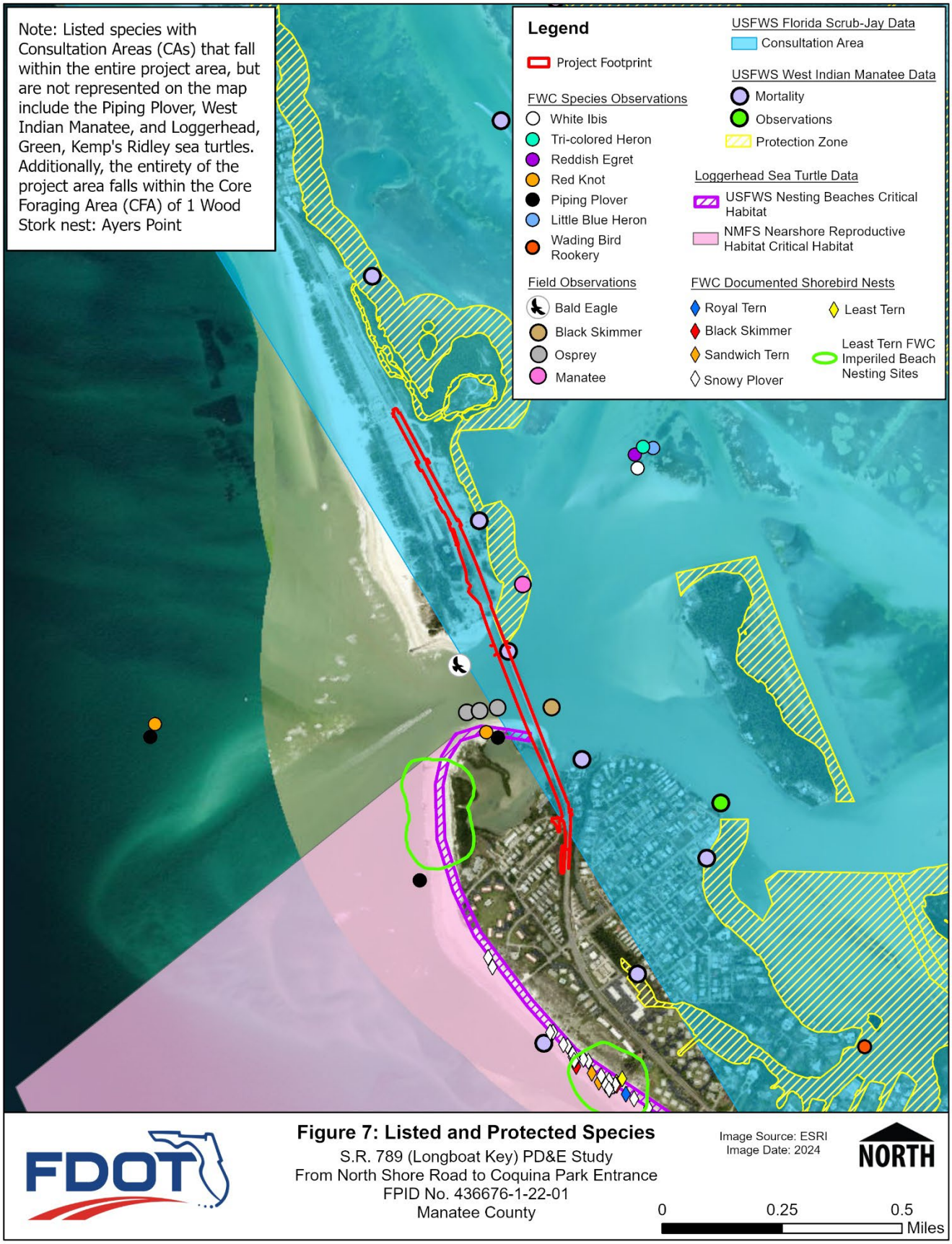
Literature reviews, agency database searches, and field reviews of potential habitat areas were conducted to identify state and federally protected species occurring or potentially occurring within the project area. The USDA NRCS Web Soil Survey, recent aerial imagery (2024), and SWFWMD land use/land cover mapping were reviewed to determine habitat types occurring within and adjacent to the project study area. The project was screened through the USFWS Information for Planning and Consultation (IPaC) website (Project Code: 2025-0120726). The USFWS IPaC Species Report is included in **Appendix D**.

Information sources and databases include the following:

- Audubon Florida – EagleWatch public nest application (2025 nesting data);
- Hansen, B.F., & Wunderlin, R.P. (2003). Guide to the vascular plants of Florida (2nd ed.). University Press of Florida;
- Florida Legislature – Florida Statutes (F.S.) Title XXVIII: Natural Resources; Conservation, Reclamation, and Use, Chapter 373: Water Resources;
- FDACS – Notes on Florida's Endangered and Threatened Plants;
- FDEP – Sarasota Bay Estuary Management Plan;
- FDOT
    - ETDM Summary Report April 2020;
    - Environmental Screening Tool (EST);
    - Tricolored Bat Avoidance and Minimization Measures (December 12, 2024);
- FWC
    - Bald Eagle (*Haliaeetus leucocephalus*) Management Plan;
    - Bald eagle nest locator (2017-2025) nesting season data;
    - Florida's Official Endangered and Threatened Species List (Updated July 2025);
    - Wading bird rookeries locator (1999);
- FNAI – Biodiversity Matrix Report (**Appendix E**);
- USACE – Effect Determination Keys for the Eastern indigo snake, wood stork, and West Indian manatee;
- USDA, NRCS – Web Soil Survey;
- USFWS
    - Central Florida wood stork Core Foraging Area (CFA) (18.6-mile radius);
    - CH for threatened and endangered species;
    - IPAC Project Code: 2025-0120726 – Species Report (**Appendix D**);
    - Species Profiles;
    - The Species Conservation Guidelines for the Florida scrub-jay (*Aphelocoma coerulescens*);
    - Wood stork active colonies (2010-2019) (USFWS, 2020).

Figure 7 depicts field observations as well as historic species occurrences from database searches. Based on the results of database searches, preliminary field reviews, and reviews of aerial photographs and soil surveys, field survey methods for specific habitat types and tables of potentially occurring protected fauna and flora were developed.

Project scientists conducted field surveys on September 18 and 19, 2023, January 30 to February 1, 2024, and June 26 and 27, 2025. At each field event, the field team consisted of ecologists with a minimum of bachelor's degrees in a biological science, and several years of field experience in Florida ecosystems. Using vehicular and meandering pedestrian transect survey methods during daylight hours, the appropriate habitat within the study area was visually scanned for evidence of listed species as well as general wildlife. All natural areas were considered as appropriate wildlife habitat and protected floral species habitat. All occurrences of wildlife in the study area were recorded and observation locations were depicted on project aerials. These occurrence records include observations of the actual species, or signs of their presence including tracks, burrows, dens, scat, nests, or calls.


Note: Listed species with Consultation Areas (CAs) that fall within the entire project area, but are not represented on the map include the Piping Plover, West Indian Manatee, and Loggerhead, Green, Kemp's Ridley sea turtles. Additionally, the entirety of the project area falls within the Core Foraging Area (CFA) of 1 Wood Stork nest: Ayers Point
Legend
Project Footprint
FWC Species Observations
White Ibis
Tri-colored Heron
Reddish Egret
Red Knot
Piping Plover
Little Blue Heron
Wading Bird Rookery
Field Observations
Bald Eagle
Black Skimmer
Osprey
Manatee
USFWS Florida Scrub-Jay Data
Consultation Area
USFWS West Indian Manatee Data
Mortality
Observations
Protection Zone
Loggerhead Sea Turtle Data
USFWS Nesting Beaches Critical Habitat
NMFS Nearshore Reproductive Habitat Critical Habitat
FWC Documented Shorebird Nests
Royal Tern
Black Skimmer
Sandwich Tern
Snowy Plover
Least Tern
Least Tern FWC Imperiled Beach Nesting Sites
FDOT
Figure 7: Listed and Protected Species
S.R. 789 (Longboat Key) PD&E Study
From North Shore Road to Coquina Park Entrance
FPID No. 436676-1-22-01
Manatee County
Image Source: ESRI
Image Date: 2024
NORTH
0
0.25
0.5
Miles

3.3 PROTECTED WILDLIFE SPECIES EVALUATION

A review of USFWS, FWC, and FNAI data indicates thirty (30) protected wildlife species are known to occur in Manatee County. Of these protected species, sixteen (16) of the species are federally listed as endangered or threatened. Although the entire project limits are located within the Florida scrub-jay Consultation Area (CA), the species was determined to have no probability of occurrence due to the lack of suitable scrub habitat within the project study area. Therefore, the proposed project will have "no effect" on the Florida scub-jay and is not discussed further in this report. The tricolored bat (*Perimyotis subflavus*) and monarch butterfly (*Danaus plexippus*) are not listed at this time; however, they are proposed for federal listing and are therefore evaluated in this NRE. Of the protected wildlife species, ten (10) are state listed threatened by FWC. In accordance with F.A.C. Title 68A-27.0012, Procedures for Listing and Removing Species from Florida's Endangered and Threatened Species List, federally endangered or threatened species under the ESA are listed by the FWC by their federal designation.

All federally and state listed plant and lichen species evaluated have a low or no probability of occurrence in the project study area, and none were observed during field reconnaissance; therefore, the proposed project will have "no effect" or "no effect anticipated" on these species. Species reviewed include pygmy fringe-tree (*Chionanthus pygmaeus*), perforate cladonia (*Cladonia perforata*), Sanibel lovegrass (*Eragrostis pectinacea var. tracyi*), and Florida loosestrife (*Lythrum flagellare*). FDOT will notify FDACS if any listed plant species are observed during future surveys.

Each potentially occurring species was assigned a likelihood of occurrence of "no", "low", "moderate", or "high" based on the types of habitats found along the project study area. Definitions of species presence probability and habitat proximity are provided below.

Probability of Species Presence

No – The species has been documented in Manatee County or the bio-region, but due to complete absence of suitable habitat and lack of observations within one (1) mile of the project, could not be naturally present within the project corridor.

Low – The species is known to occur in Manatee County or the bio-region, but suitable habitat is limited along the project corridor and no documented observations are within one (1) mile of the project.

Moderate – The species is known to occur in Manatee County or the bio-region, suitable habitat is represented along the project corridor, and the species has been documented within one (1) mile of the project or is expected to occasionally occur within the project corridor given suitable habitat.

High – The species is known to occur in Manatee County or the bio-region, suitable habitat is represented along the project corridor, and the species has recently been documented within the project corridor.

Table 4 lists the federal and state wildlife species known to occur within Manatee County that could potentially occur near the project area based on potential availability of suitable habitat and known ranges.

Table 4: Potentially Occurring and Observed Protected Wildlife Species

Species	Common Name	FWC	USFWS	Suitable Habitat	Probability of Occurrence
REPTILES					
Caretta caretta	Loggerhead sea turtle	-	T	Marine/estuarine waters and sandy beaches	High
Chelonia mydas	Green sea turtle	-	T	Marine/estuarine waters and sandy beaches	High
Dermochelys coriacea	Leatherback sea turtle	-	E	Marine/estuarine waters and sandy beaches	Low
Eretmochelys imbricata	Hawksbill sea turtle	-	E	Marine/estuarine waters and sandy beaches	Low
Lepidochelys kempii	Kemp's ridley sea turtle	-	E	Marine/estuarine waters and sandy beaches	Moderate
Drymarchon corais couperi	Eastern indigo snake	-	T	Hydric hammock, palustrine, sandhill scrub, upland pine forest, mangrove swamp	Low
Crocodylus acutus	American crocodile	-	T	Coastal and brackish environments	Low
Gopherus polyphemus	Gopher tortoise	T	-	Old field, sandhill, scrub, xeric hammock, ruderal, dry prairie, pine flatwood	Low
FISH					
Acipenser oxyrhynchus desotoi	Gulf sturgeon	-	T	Marine/estuarine waters	Low
Mobula birostris	Giant manta ray	-	E	Marine/estuarine waters	Low
Pristis pectinata	Smalltooth sawfish	-	E	Marine/estuarine waters	Low
BIRDS					
Aphelocoma coerulescens	Florida scrub-jay	-	T	Relict dune ecosystems or scrub on well drained sandy soils	No
Calidris canutus rufa	Rufa red knot	-	T	Sandy beaches, saltmarshes, lagoons, mudflats of estuaries and bays, and mangrove swamps	Moderate
Charadrius melodus	Piping plover	-	T	Sandy upper beaches, sparsely vegetated shores of shallow lakes, ponds, rivers	Moderate
Charadrius nivosus	Snowy plover	T	-	Beaches, dry mud or salt flats, sandy shores of rivers, lakes, and ponds	High
Egretta caerulea	Little blue heron	T	-	Estuarine, lacustrine, riverine, tidal marsh, tidal swamp	Moderate
Egretta rufescens	Reddish egret	T	-	Estuarine, lacustrine, riverine, tidal marsh, tidal swamp	Moderate
Egretta tricolor	Tricolored heron	T	-	Estuarine, lacustrine, riverine, tidal marsh, tidal swamp	Moderate
Antigone canadensis pratensis	Florida sandhill crane	T	-	Basin marsh, depression marsh, dry prairies, marl prairie, pastures	No
Haliaeetus leucocephalus	Bald eagle	-	NL[1]	Estuarine, lacustrine, riverine, tidal marsh, tidal swamp	High
Laterallus jamaicensis ssp.	Eastern black rail	-	T	Grasslands, coastal, and wetlands but usually near freshwater marshes that are both tidal and nontidal.	No
Mycteria americana	Wood stork	-	T	Estuarine tidal swamps/marshes, lacustrine, seepage stream, ditches, ruderal	Moderate
Pandion haliaetus	Osprey	-	NL[1]	Open water; areas of cypress, mangrove, pine and swamp hardwoods for nesting	High
Platalea ajaja	Roseate spoonbill	T	-	Estuarine, lacustrine, riverine, tidal marsh, tidal swamp	Low
Rynchops niger	Black skimmer	T	-	Open sand on beaches, sandbars, and dredge material islands	High
Sternula antillarum	Least tern	T	-	Coastal beaches, estuaries, and bays, occasional use of rooftops	High
Haematopus palliates	American oystercatcher	T	-	Beaches, sandbars, salt marsh, oyster reefs	Moderate
MAMMALS					
Perimyotis subflavus	Tricolored bat	-	P	Cavities in structures, trees, and land formations	No
Trichechus manatus	West Indian manatee	-	T	Coastal waters, bays, rivers	High
INVERTEBRATES					
Danaus plexippus	Monarch butterfly	-	P	Diversity of blooming nectar plants, specifically milkweed	Low

*T = Threatened, E = Endangered, NL = Not Listed

USFWS Notations:

[1]The Bald Eagle and Osprey are not listed but are afforded federal protection through the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA).

P = The tricolored bat and monarch butterfly are proposed species for federal listing.

FWC Notations:

In accordance with F.A.C. Title 68A-27.0012, Procedures for Listing and Removing Species from Florida's Endangered and Threatened Species List, federally endangered or threatened species under the ESA will be listed by the FWC by their federal designation.

3.4 FEDERALLY LISTED WILDLIFE SPECIES AND DESIGNATED CRITICAL HABITAT

3.4.1 REPTILES

Loggerhead Sea Turtle (*Caretta caretta*)

The loggerhead sea turtle, federally listed as threatened, utilizes inshore waters such as bays, lagoons, and river mouths, and nests primarily on sandy beaches and dunes. Suitable loggerhead sea turtle habitat in the project study area includes the surface waters of Longboat Pass, beaches at Greer Island and Coquina Beach, and seagrass beds in the tidal embayment south of Greer Island. As a result, there is a high probability of occurrence for this species. The project lies within the NMFS CA for the loggerhead sea turtle. Beach areas within the project study area are designated as terrestrial (nesting beach) CH by USFWS, while NMFS-designated Nearshore Reproductive Habitat CH is located approximately 750 feet west of Greer Island and along the shores of Longboat Key. Nesting occurs along the north and south shores of Longboat Pass, including Anna Maria Island and Longboat Key, both classified by FWC as medium-density nesting areas. Nesting typically occurs between April and September, with the official FWC sea turtle nesting season extending from May to October, during which coastal construction activities are restricted.

During a field visit on June 26, 2025, six (6) sea turtle nests were observed on Greer Island and three (3) sea turtle nests were observed on Coquina Beach. Based on correspondence with the Mote Marine Sea Turtle Conservation and Research Program and the Anna Maria Island Sea Turtle Watch, all of the nests were confirmed to be loggerhead sea turtle nests. **Figure 8** depicts the Preferred Alternative footprint in relation to the observed loggerhead sea turtle nests. In addition to sandy beaches, potential nesting habitat consisting of native dune vegetation, including sea oats (*Uniola paniculata*) and morning glories *(Ipomoea imperati),* were also observed. **Figure 9** depicts the location of field observed dune nesting habitat and vegetation in relation to the Preferred Alternative footprint.

Potential direct, indirect, and temporary construction impacts were evaluated for both nesting and swimming sea turtle habitat. Anticipated impacts include dredging and shading of continuous and discontinuous seagrass beds, as well as impacts to swimming habitat from altered light penetration, behavioral disruption during nesting and foraging, and in-water noise. Nesting habitat may also be indirectly impacted by artificial lighting, which can disorient nesting females and hatchlings and lead to avoidance or stress responses. Lighting improvements are limited to Coast Guard-compliant navigational lighting and pedestrian safety lighting at the proposed Coquina Beach Park midblock crossing approximately 1,600 feet from the nesting beach. An LJR will be prepared during the design phase to evaluate the need for corridor lighting and assess compliance with FDEP and FWC. Within the project study area, approximately 0.01 acres of direct impacts from pile installation and 0.14 acres of indirect impacts from shading are anticipated to seagrass beds. All impacts to seagrass will be offset through the purchase of appropriate mitigation bank credits. In addition, 0.45 acres of potential nesting habitat would be affected by pile installation and shading combined, including 0.01 acres of USFWS-designated nesting beach CH as seen in **Figure 9**.

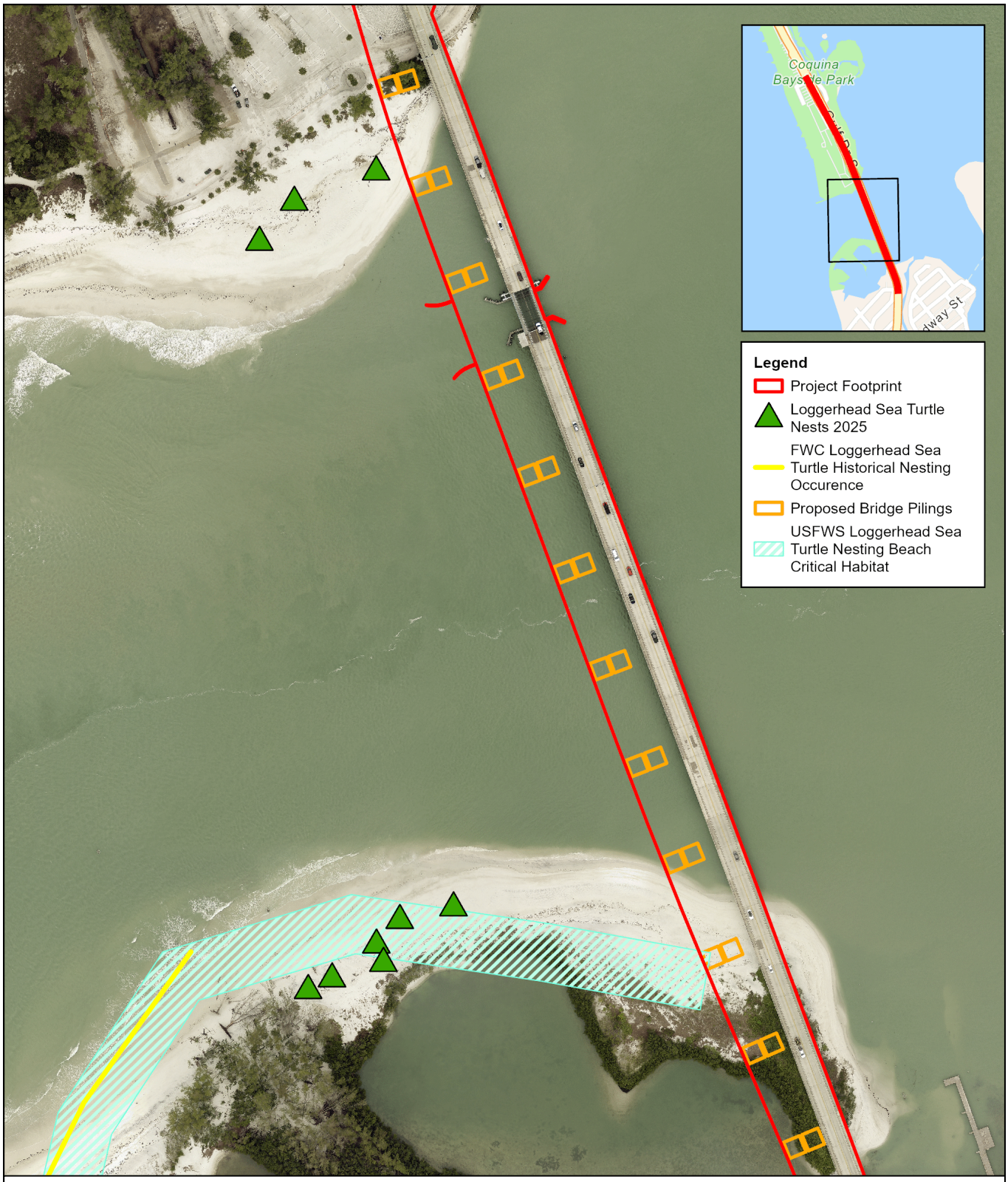


Figure 8: Field Observed Sea Turtle Nests

S.R. 789 (Longboat Key) PD&E Study
From North Shore Road to Coquina Park Entrance
FPID No. 436676-1-22-01
Manatee County

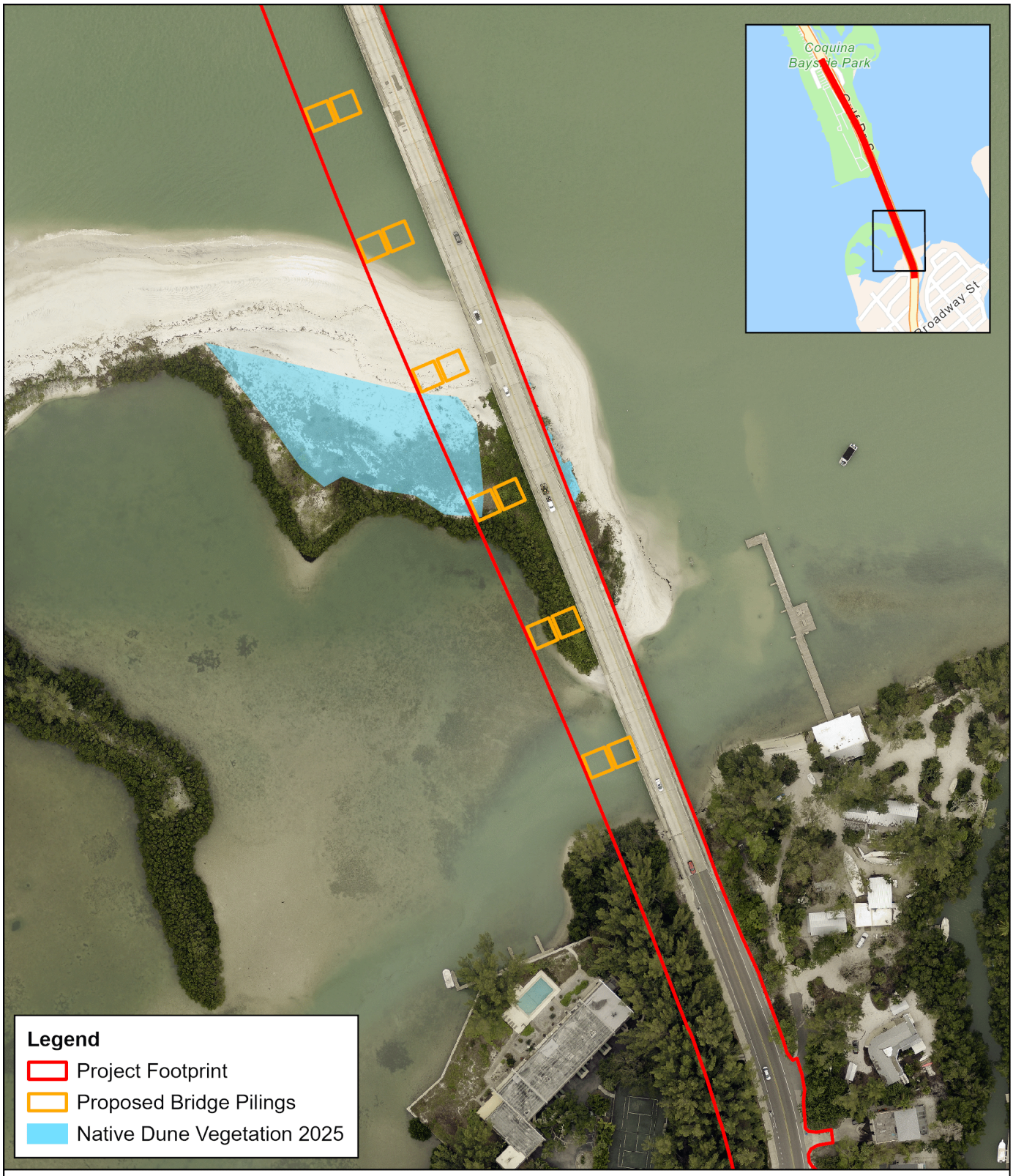


Figure 9: Field Observed Dune Vegetation

S.R. 789 (Longboat Key) PD&E Study
From North Shore Road to Coquina Park Entrance
FPID No. 436676-1-22-01
Manatee County

Image Source: APLUS
Image Date: 2024

NORTH

0 100 200 Feet

To minimize these impacts, permanent sea turtle–friendly lighting—such as fully shielded, low-wavelength amber Light Emitting Diodes (LEDs)—will be implemented in accordance with the FWC wildlife lighting guidelines to avoid disorientation of sea turtles. If necessary, temporary construction lighting will be minimized, shielded, and directed downward, using long-wavelength bulbs where practicable. Illumination of open surface waters and nesting habitat will be avoided through appropriate shielding, positioning, and turning off lights when not in use. There is also potential for this species to enter the project study area during construction and become entrapped or entangled in in-water construction equipment, turbidity curtains, anchor lines, or other temporary structures. All work will follow the NMFS Southeast Regional Office (SERO) Protected Species Construction Conditions (**Appendix F**) and the NMFS SERO Vessel Strike Avoidance Measures (**Appendix G**).

Construction activities are limited to the removal of the existing bridge and pilings and the construction of a new high level bridge and pilings. A total of 624 4-square feet concrete piles will be installed for the proposed new bridge. Potential effects from noise created by piledriving activities could result in physical injury or a change in behavior in the affected area. Best Management Practices (BMPs) will be implemented during construction to avoid and minimize potential impacts to loggerhead sea turtles. Ramp up pile driving will be utilized at the start of each day. The square footage of the proposed footprint bridge pilings within the beach areas will be very similar to that of the existing bridge pilings. Therefore, no direct loss of suitable sea turtle nesting beach habitat is anticipated. Additionally, shading effects are also expected to be comparable to existing conditions. As a result, the determination of effect for the loggerhead sea turtle is "may affect, not likely to adversely affect".

The existing Longboat Key Bridge is directly adjacent to, but outside of, USFWS-designated nesting beach CH for the loggerhead sea turtle. The Preferred Alternative is approximately 20 feet west of the existing structure on Greer Island (**Figure 8**). As a result, the proposed project footprint would impact 0.01 acres of nesting beach CH, which is approximately 0.009% of the total terrestrial CH in Longboat Key. This impact represents a very small fraction of the designated CH for this species in the project vicinity and does not diminish the overall value of the CH as a whole for the conservation of the loggerhead sea turtle. Therefore, the Preferred Alternative "will not result in destruction or adverse modification" of CH for the loggerhead sea turtle.

Green Sea Turtle (*Chelonia mydas*)

The green sea turtle, federally listed as threatened, occurs in shallow coastal waters (except when migrating) such as reefs, bays, and inlets. This species utilizes lagoons and shoals as resting areas that provide protection from currents and predators and as foraging areas with abundant seagrass and algae. Open beaches and dunes are required for nesting, which occurs from June through late September. Foraging habitat for this species within the project study area includes the surface waters of Longboat Pass and the seagrass beds of the tidal embayment south of Greer Island. Potential nesting habitat includes the beaches and dunes of Greer Island and Coquina Beach. As a result, the probability of occurrence for the green sea turtle is high. **Figure 9** depicts field observed dune vegetation in relation to the Preferred Alternative footprint.

The project is within the NMFS CA for the species, and the beaches and nearshore waters in the vicinity are designated as proposed CH. Green sea turtle nesting is documented along the north and south shores

of Longboat Pass with 2020-2024 FWC data indicating medium-density nesting. In 2025, the Anna Maria Island Sea Turtle Watch recorded green sea turtle presence through false crawls on the adjacent shores, though no successful nesting was observed, and no nests were observed during field reviews.

Potential direct, indirect, and temporary construction impacts were evaluated for both nesting and swimming sea turtle habitat. Anticipated impacts include dredging and shading of continuous and discontinuous seagrass beds, as well as impacts to swimming habitat from altered light penetration, behavioral disruption during nesting and foraging, and in-water noise. Nesting habitat may also be indirectly impacted by artificial lighting, which can disorient females and hatchlings and lead to avoidance or stress responses. Lighting improvements are limited to Coast Guard-compliant navigational lighting and pedestrian safety lighting at the proposed Coquina Beach Park midblock crossing approximately 1,600 feet from the nesting beach. An LJR will be prepared during the design phase to evaluate the need for corridor lighting and assess compliance with NMFS. Within the project study area, approximately 0.01 acres of direct impacts from pile installation and 0.14 acres of indirect impacts from shading are anticipated to seagrass beds. All impacts to seagrass will be offset through the purchase of appropriate mitigation bank credits. In addition, 0.45 acres of potential nesting habitat would be affected by pile installation and shading combined but is expected to be offset by the removal of the existing bridge structure.

To minimize these impacts, permanent sea turtle–friendly lighting—such as fully shielded, low-wavelength amber LEDs—will be implemented in accordance with the FWC wildlife lighting guidelines to avoid disorientation of sea turtles. If necessary, temporary construction lighting will be minimized, shielded, and directed downward, using long wavelength bulbs were practicable. Illumination of open surface waters and nesting habitat will be avoided through appropriate shielding, positioning, and turning off lights when not in use. There is also potential for this species to enter the project study area during construction and become entrapped or entangled in in-water construction equipment, turbidity curtains, anchor lines, or other temporary structures. All work will follow the NMFS SERO Protected Species Construction Conditions (**Appendix F**) and the NMFS SERO Vessel Strike Avoidance Measures (**Appendix G**).

Construction activities are limited to the removal of the existing bridge and pilings and the construction of a new high level bridge with new pilings. A total of 624 4-square feet concrete piles will be installed for the proposed new bridge. Potential effects from noise created by piledriving activities could result in physical injury or a change in behavior in the affected area. BMPs will be implemented during construction to avoid and minimize potential impacts to green sea turtles. Ramp up pile driving will be utilized at the start of each day. The square footage of the proposed footprint bridge pilings within the beach areas will be very similar to that of the existing bridge pilings. Therefore, no direct loss of suitable sea turtle nesting beach habitat is anticipated. Shading impacts are also expected to be comparable to existing conditions, as nesting is unlikely to occur in areas directly beneath the bridge structure. As a result, the determination of effect for the green sea turtle is "may affect, not likely to adversely affect". Furthermore, because the new bridge will replace the existing structure rather than introduce additional development, minimal net impacts to suitable habitat are anticipated. Therefore, the project is not anticipated to adversely affect the proposed CH for the green sea turtle. FDOT will reinitiate consultation

with NMFS upon finalization of the green sea turtle CH if the Preferred Alternative falls within the designated area.

Leatherback Sea Turtle *(Dermochelys coriacea),* Hawksbill Sea Turtle (*Eretmochelys imbricata*), and Kemp's Ridley Sea Turtle (*Lepidochelys kempii*)

The leatherback sea turtle, hawksbill sea turtle, and Kemp's ridley sea turtle are listed as endangered by the USFWS and the NMFS. While each species is distinct, these three (3) species are discussed collectively since they occupy similar habitats and have similar nesting patterns. These sea turtles are all known to nest on sandy beaches along the Florida coastline. They will also occasionally utilize the waters of bays for swimming and foraging habitat. Sea turtles are known to occur in Manatee County, and suitable swimming and foraging habitat is present in the waters of Longboat Pass and Greer Island within the project study area. The project is also within the NMFS-designated CA for the Kemp's ridley sea turtle. The most recent documented occurrence of this species within one (1) mile of the project study area was in 2021. The proposed project is located outside of the NMFS-designated CA for the leatherback and hawksbill sea turtles; the CA for both of these species is located approximately 800 feet west of the project study area. No sea turtles were observed during field reviews. As a result, the potential for occurrence for the leatherback sea turtle and hawksbill sea turtle is low. The potential for occurrence for the Kemp's ridley sea turtle is moderate.

The primary concern for impacts to these species is the loss of nesting habitat and submerged aquatic vegetation (SAV). Nesting habitat (beaches and dunes) and foraging habitat (seagrass beds) for sea turtles has been documented in the project study area. Approximately 0.01 acres of direct pile installation impacts and 0.14 acres of indirect shading impacts are anticipated to continuous and discontinuous seagrass habitat. All impacts to seagrass will be offset through the purchase of appropriate mitigation bank credits. There are 0.45 acres of potential nesting habitat that is anticipated to be directly impacted by the installation of bridge pilings but is expected to be offset by the removal of the existing bridge structure. A total of 624 4-square feet concrete piles will be installed for the proposed new bridge. Potential effects from noise created by piledriving activities could result in physical injury or a change in behavior in the affected area. BMPs will be implemented during construction to avoid and minimize potential impacts to sea turtles. Ramp up pile driving will be utilized at the start of each day. Because the project would result only in minor shading impacts and temporary in-water noise to potential sea turtle swimming habitat, and with implementation of noise mitigation techniques, NMFS SERO Protected Species Construction Conditions (**Appendix F**), and the NMFS SERO Vessel Strike Avoidance Measures (**Appendix G**), the determination of effect for the leatherback, hawksbill, and Kemp's ridley sea turtles is "<u>may affect, not likely to adversely affect</u>".

Eastern Indigo Snake (*Drymarchon corais couperi*)

The Eastern indigo snake, federally listed as threatened by USFWS, may occur in a variety of natural habitats including forested and herbaceous uplands and wetlands. Based on FWC's Rare Snake Sightings data, no observations were documented within one (1) mile of the project study area. Habitat within and adjacent to the corridor is highly developed and dominated by marine and estuarine environments, providing little to no suitable conditions for the species. No Eastern indigo snakes were observed during project field reviews. As a result, the probability of occurrence for this species is low. The FDOT will

implement the USFWS Standard Protection Measures for the Eastern Indigo Snake (**Appendix H**). Using the USACE Effect Determination Key for the Eastern Indigo Snake (**Appendix I**, Steps A>B>C), the determination of effect is "may affect, not likely to adversely affect".

American Crocodile (*Crocodylus acutus*)

The American crocodile, federally listed as threatened by USFWS, inhabits mangrove swamps and low-energy, mangrove-lined bays, creeks, and inland swamps. The USFWS IPaC report (**Appendix D**) identified that the American crocodile may potentially be affected by activities in the project area. While the general project area contains suitable habitat, the species' current distribution is limited to South Florida. The CA for the species is 42 miles south of the project study area. Additionally, no crocodiles were observed during field reviews, and there are no recorded observations within one (1) mile of the project. As a result, the probability of occurrence for this species is low. Therefore, the determination of effect for the American crocodile is "no effect".

3.4.2 FISH

Gulf Sturgeon (*Acipenser oxyrinchus desotoi*)

The Gulf sturgeon is federally listed as threatened by USFWS and NMFS. The project study area is entirely within the NMFS-designated CA for the species. Habitat includes the benthic stratum of the Gulf of Mexico, bays, estuaries, and major rivers. Suitable conditions consist of large, free-flowing rivers with hard substrates (limestone, cobble, or gravel) used for spawning, as well as deep river channels and adjacent sandbars for resting. Juveniles and adults also occupy estuarine and nearshore marine habitats, generally within one (1) mile of shore and at depths of 15 to 40 feet, where they forage on benthic invertebrates. The project study area contains estuarine habitat features considered suitable for the species. However, no Gulf sturgeons were observed during field reviews, and there are no recorded observations within one (1) mile of the project. As a result, the probability of occurrence for this species is low. A total of 624 4-square feet concrete piles will be installed for the proposed new bridge. Potential impacts are limited to temporary in-water noise associated with construction. Potential effects from noise created by piledriving activities could result in physical injury or a change in behavior in the affected area. BMPs will be implemented during construction to avoid and minimize potential impacts to Gulf sturgeon. Ramp up pile driving will be utilized at the start of each day. With the implementation of the NMFS SERO Protected Species Construction Conditions (**Appendix F)** and the NMFS SERO Vessel Strike Avoidance Measures (**Appendix G**) by the FDOT, the determination of effect for the Gulf sturgeon is "may affect, not likely to adversely affect".

Giant Manta Ray (*Mobula birostris*)

The giant manta ray, federally listed as threatened by NMFS, occurs in nearshore and offshore marine waters, particularly warm, productive coastal areas. The giant manta ray is highly migratory and often found in waters with abundant zooplankton, its primary food source. It is a filter feeder that forages near the surface and at mid-water depths. Suitable habitat for the giant manta ray is present within the project study area; however, it has not been documented within one (1) mile of the project study area and was not observed during field reviews. As a result, the probability of occurrence for this species is low.

A total of 624 4-square feet concrete piles will be installed for the proposed new bridge. Potential impacts include temporary in-water noise and disturbance of the water column during construction. Potential effects from noise created by piledriving activities could result in physical injury or a change in behavior in the affected area. BMPs will be implemented during construction to avoid and minimize potential impacts to giant manta rays. Ramp up pile driving will be utilized at the start of each day. There is also potential for this species to enter the project study area during construction and become entrapped or entangled. To minimize potential adverse impacts to the giant manta ray, the NMFS SERO Protected Species Construction Conditions (**Appendix F**) and the NMFS SERO Vessel Strike Avoidance Measures (**Appendix G**) will be implemented during construction of the proposed project. Based on the lack of documented occurrences and the implementation of protective measures, the determination of effect for the giant manta ray is "may affect, not likely to adversely affect".

Smalltooth Sawfish (*Pristis pectinata*)

The smalltooth sawfish, federally listed as endangered by NMFS, inhabits shallow estuarine and coastal waters (typically less than three feet deep) such as bays, lagoons, rivers, and muddy or sandy bottom shorelines. Although this species prefers euryhaline conditions (fluctuating salinity), it can tolerate freshwater. Juveniles use shallow vegetated habitats, particularly red mangrove (*Rhizophora mangle*) forests, as nursery grounds. Within the project study area, suitable habitat includes the mangrove swamps of Greer Island and the surface waters of Longboat Pass. No observations of smalltooth sawfish have been recorded within one (1) mile of the project study area, and none were made during field reviews. As a result, there is a low probability of occurrence for the species.

Potential effects to the smalltooth sawfish due to construction of the proposed project include the risk of injury from land-based and in-water construction equipment and pile driving activities. A total of 624 4-square feet concrete piles will be installed for the proposed new bridge. Potential effects from noise created by piledriving activities could result in physical injury or a change in behavior in the affected area. BMPs will be implemented during construction to avoid and minimize potential impacts to smalltooth sawfish. Ramp up pile driving will be utilized at the start of each day.

During construction, workers will be required to watch for smalltooth sawfish entering within 50 feet of equipment and will cease construction activities until the fish has departed the construction area of their own volition. Additionally, no nighttime in-water work will be performed. The project will also impact mangrove swamps in the study area; however, mitigation will be provided for these impacts. With the implementation of these measures, the NMFS SERO Protected Species Construction Conditions (**Appendix F**) during construction, and mitigation, the determination of effect for the smalltooth sawfish is "may affect, not likely to adversely affect".

3.4.3 BIRDS

Rufa Red Knot (*Calidris canutus rufa*)

The rufa red knot, federally listed as threatened by USFWS, inhabits sandy beaches, saltmarshes, lagoons, estuarine mudflats, and mangrove swamps. In Florida, this species winters in coastal areas but does not breed locally. Its primary food source is horseshoe crab eggs, but it also forages on invertebrates such as mussels, clams and small crustaceans. Within the project study area, suitable habitat includes the beaches

of Greer Island and Coquina Beach. USFWS-proposed CH for the species is located directly adjacent to the existing Longboat Key Bridge and overlaps the proposed footprint. The rufa red knot was not observed during project surveys; however, FWC has documented occurrences within one (1) mile of the project. As a result, the probability of occurrence for this species is moderate. Because the species does not nest in Florida and foraging habitat is abundant in the surrounding area, the determination of effect for the rufa red knot is "may affect, not likely to adversely affect". Because there will be no net loss in suitable habitat, the project is not anticipated to adversely affect the proposed CH for the rufa red knot. FDOT will reinitiate consultation with USFWS upon finalization of the rufa red knot CH if the Preferred Alternative falls within the designated area.

Piping Plover (*Charadrius melodus*)

The piping plover is federally listed threatened by USFWS and the project study area falls within the CA of this species. This species primarily inhabits intertidal sandy beaches with little or no vegetation but may also use coastal sand flats and mudflats. In Florida, piping plovers are winter residents, migrating here after nesting in northern breeding territories. Survival during the wintering period depends on the availability of quality foraging and roosting habitat to support successful return migration and reproduction. Within the project study area, suitable habitat includes the beaches of Greer Island and Coquina Beach. Piping plovers were not observed during field reviews; however, FWC has documented occurrences within one (1) mile of the project. As a result, the probability of occurrence for this species is moderate. Because this species does not nest in Florida and foraging habitat is abundant in the surrounding area, the determination of effect for the piping plover is "may affect, not likely to adversely affect".

Eastern Black Rail (*Laterallus jamaicensis ssp.*)

The Eastern black rail, a subspecies federally listed threatened by USFWS, inhabits coastal areas along the western coast of Florida year-round, typically within brackish, salt, and freshwater wetlands. This wetland-dependent marsh bird requires moist to saturated soils with gentle slopes that allow for shallow inundation for foraging, as well as dense vegetation for cover from predators. This species was not observed during field reviews, and no recorded observations within one (1) mile of the project. The project study area lacks the marsh vegetation necessary to support this species; As a result, there is no probability of occurrence for this species. Based on the absence of suitable habitat, the determination of effect for the Eastern black rail is "no effect".

Wood Stork (*Mycteria americana*)

The wood stork, federally listed as threatened by USFWS, uses a variety of habitats including freshwater marshes, swamps, lagoons, ponds, flooded fields, brackish wetlands, and manmade wetlands (i.e., ditches, canals, and stormwater retention ponds). They are colonial nesters, typically constructing nests in medium to tall trees within wetlands or on islands, and may forage up to 40 miles from a colony. For central Florida, USFWS defines the CFA for a wood stork colony as the area within a 15-mile radius from the colony location. The project study area is located within the CFA of one (1) active wood stork colony (No. 615113 - Ayers Point) located approximately 10.5 miles northeast of the project footprint. No wood storks were observed during project field reviews.

According to USFWS, suitable foraging habitat (SFH) includes wetlands and surface waters that are relatively calm, free of dense aquatic vegetation, and have permanent or seasonal water depth between 2 and 15 inches. Wetlands and surface waters within the project footprint on Greer Island generally provide such conditions. As a result, the probability of occurrence for the wood stork is moderate. The project proposes 0.11 acres of permanent impacts to wetlands, with mitigation anticipated to exceed the amount required to offset potential effects to wood stork SFH. Using the USACE Effect Determination Key for the Wood Stork in Central Florida (**Appendix J**, Steps A>B>C), the determination of effect for the wood stork is "may affect, not likely to adversely affect".

3.4.4 MAMMALS

Tricolored bat (*Perimyotis subflavus*)

The tricolored bat was proposed for federal listing as endangered by USFWS on September 13, 2022; however, it is not currently a federally listed species, and no CA has been designated. This species hibernates in caves during the winter and roosts in tree foliage, palm fronds, and man-made structures during the summer. Potential roosting habitat is present within and adjacent to the project study area. During field surveys, visual inspections of potential roosting trees, cavities, and the existing bridge were conducted.

While the IPaC report did not list the tricolored bat as potentially occurring within the project area, during the June 2025 field review, guano was observed (**Appendix O**) and smelled beneath the bridge, and unidentified bats were heard within the bridge crevices. However, consistent with the IPaC report, the tricolored bat is not known to occur in the region and as a result, the probability of occurrence for the species is none. Based on the FDOT Tricolored Bat Consultation Guidance (January 2025), the proposed project was determined to have "no effect" on the tricolored bat.

West Indian Manatee (*Trichechus manatus*)

The West Indian manatee, federally listed as threatened by USFWS and also protected under the Marine Mammal Protection Act (MMPA), inhabits both marine and freshwater habitats, seeking warm-water refuges during the winter months. The project falls within the CA and an FWC-specified slow-speed protection zone. Manatees were observed within and adjacent to the project study area during the September 2023 field review (**Figure 7**). As a result, the probability of occurrence for this species is high. Approximately 0.15 acres of potential seagrass foraging habitat are anticipated to be impacted, including 0.01 acres of direct impacts from pile driving and 0.14 acres of indirect impacts from shading of both continuous and discontinuous seagrass beds. Additional potential impacts include temporary in-water noise during construction, the presence of construction vessels, and temporary obstruction of portions of the waterway. BMPs will be implemented during construction to avoid and minimize potential impacts to West Indian manatees. Ramp up pile driving will be utilized at the start of each day. FDOT will follow the Standard Manatee Conditions for In-Water Work (**Appendix L**). Using the USACE Manatee Effect Determination Key (**Appendix M**, Steps A>B>C>G>N>O>P), the determination of effect for the West Indian manatee is "may affect, not likely to adversely affect".

3.4.5 INVERTEBRATES

Monarch Butterfly (*Danaus plexippus*)

The monarch butterfly was proposed for federal listing as threatened by USFWS on December 12, 2024, but is not currently a federally listed species. In North America, the monarch is a highly migratory butterfly that typically overwinters in Mexico. This species requires a diversity of blooming nectar sources, but milkweed (*Asclepias spp*.) is of particular importance as it serves both as the sole larval food plant and as the substrate for egg deposition. Milkweed was not observed during field reviews; however, it occurs sporadically along roadsides and in open areas where mowing or other maintenance activities are infrequent. No monarch butterflies were observed during field reviews, and no observations have been documented within one (1) mile of the project study area. As a result, the probability of occurrence for this species is low. Because the monarch butterfly is only proposed for federal listing at this time, consultation is not required. If its status is elevated to threatened or endangered and the project may affect the species, FDOT commits to re-initiating consultation with the USFWS to determine appropriate avoidance and minimization measures for protection of the newly listed species.

3.5 STATE LISTED WILDLIFE SPECIES

3.5.1 REPTILES

Gopher Tortoise (*Gopherus polyphemus*)

The gopher tortoise is listed by FWC as threatened. Its burrows provide habitat for many commensal species. Gopher tortoises typically occur in xeric, well-drained soils such as sandhills, scrub, pine flatwoods, coastal dunes, pastures, and other disturbed sites. Suitable habitat within the project study area includes dune habitat on Greer Island and Coquina Beach. **Figure 9** depicts field observed dune vegetation in relation to the Preferred Alternative footprint. No individuals or burrows were observed during field reviews, and there are no recorded observations within one (1) mile of the project. As a result, the probability of occurrence for this species is low. During the design phase, surveys for gopher tortoise burrows and commensal species will be conducted, and relocation permits will be obtained from FWC as appropriate. All activities will follow FWC Gopher Tortoise Permitting Guidelines. The project will have "no adverse effect anticipated" on the gopher tortoise.

3.5.2 BIRDS

Shorebirds – Snowy Plover (*Charadrius nivosus)*, Black Skimmer (*Rynchops niger)*, Least Tern (*Sternula antillarum)*, American Oystercatcher (*Haematopus palliates*)

Four (4) FWC-listed imperiled beach-nesting bird species—snowy plover, black skimmer, least tern, and American oystercatcher—occur or have potential to occur within suitable shoreline habitat at Greer Island and Coquina Beach. All four (4) species are listed as Threatened by FWC and protected under FWC's Species Conservation Measures & Permitting Guidelines for Imperiled Beach-Nesting Birds (IBNB; effective October 1, 2024). Nesting in the region generally occurs from February through August, with some colony use extending into early September.

Snowy plovers, least terns, and black skimmers have been documented nesting within 0.5 miles of the project, including records from Whitney Beach/Longboat Key (2013–2018; **Figure 7**). Black skimmers were observed flying over the project area during 2023–2024 field reviews. American oystercatchers were not observed during project field reviews and have not been documented within one (1) mile of the project study area. None of these shorebird species were observed nesting within the project footprint. As a result, the probability of occurrence is considered high for snowy plover, black skimmer, and least tern, and low for American oystercatcher.

Approximately 0.45 acres of potential nesting habitat may be temporarily affected by the installation of bridge pilings; however, impacts are expected to be offset by removal of the existing bridge structure. Prior to construction, FDOT will conduct pre-construction surveys in suitable habitat to identify any active nests or flightless chicks. If present, FDOT will comply with Rule 68A-27.003, F.A.C., and the IBNB Guidelines by coordinating with FWC's Protected Species Permitting Office to avoid take (harm/harassment or significant habitat modification). If avoidance is not feasible, FDOT will obtain an FWC Incidental Take Permit before construction. With these commitments, the proposed project will have "no adverse effect anticipated" on snowy plover, black skimmer, least tern, or American oystercatcher.

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

Wading birds such as the little blue heron, reddish egret, tricolored heron, and roseate spoonbill are state listed threatened species and also receive protection under the Migratory Bird Treaty Act (MBTA) (16 United States Code (U.S.C.) 703-712). These species forage in wetlands and shallow surface waters. The roseate spoonbill was not observed during field reviews, and no observations have been documented within one (1) mile of the project study area. However, the little blue heron, reddish egret, and tricolored heron have been documented to occur within one (1) mile of the project study area by the FWC (**Figure 7**). As a result, the roseate spoonbill has a low probability of occurrence, whereas the little blue heron, reddish egret, and tricolored heron have a moderate probability of occurrence. The primary concern for these species is the potential loss of wetland foraging habitat. The project proposes to impact wetlands and surface waters which provide foraging habitat for wading birds. All wetland impacts will be mitigated to prevent a net loss of wetland functions and values. Therefore, the project will have "no adverse effect anticipated" on state listed wading birds.

Florida Sandhill Crane (*Grus canadensis pratensis*)

The Florida sandhill crane is listed as threatened by FWC. This species nests in shallow freshwater marshes, prairies, and pastures, and forages in a variety of open habitats. No suitable nesting or foraging habitat occurs within the project area. The Florida sandhill crane has not been documented within one (1) mile of the project study area and was not observed during field reviews. As a result, there is no probability of occurrence for this species. Therefore, the project will have "no effect anticipated" on the Florida sandhill crane.

3.6 PROTECTED NON-LISTED WILDLIFE SPECIES

Bald Eagle (*Haliaeetus leucocephalus*)

This species receives federal protection under the MBTA and BGEPA. Protection buffers of eagle nests include a 330-foot buffer, in which construction activity cannot occur during the eagle nesting season (October 1 – May 15), and a 660-foot buffer, in which construction during the nesting season can only occur if monitored by a biologist and confirmed that no nest disturbance results. A desktop review using FWC data and Audubon EagleWatch 2025 nesting data indicates that the closest documented nest is approximately 1.6 miles south of the project study area. During a January 2024 field review, one (1) bald eagle was observed flying over the project study area (**Figure 7**), but no nests were observed. As a result, the probability of occurrence for this species is high. Surveys to update nest locations will be conducted during the design phase, and permits will be obtained if construction may impact nests. Coordination with USFWS and FWC will occur as needed. Therefore, the project will have no anticipated impact on the bald eagle.

Osprey (*Pandion haliaetus*)

The osprey is federally protected under the MBTA and may occur within the project study area. Ospreys forage on fish in open fresh and saltwater habitats, including coasts, lakes, rivers, and swamps. Several ospreys were observed during field surveys (**Figure 7**), but no nests were observed within the project study area. As a result, the probability of this species is high. Surveys to update nest locations will be conducted during the design phase, and permits will be obtained if construction may impact nests. Coordination with USFWS and FWC will occur as needed. With these measures in place, the project will have no anticipated impact on the osprey.

Non-Listed Bat Species

All bat species are protected in Florida under Chapter 68A of the F.A.C. The following bat species are known to occur in the region: Brazilian free-tailed, evening (*Nycticeius humeralis*), big brown (*Eptesicus fuscus*), northern yellow (*Dasypterus intermedius*), and Rafinesque's big-eared (*Corynorhinus rafinesquii*) bats.

Bats utilize structures such as bridges and tree cavities for roosting habitat. A field review conducted in June 2025 confirmed the presence of bat exclusionary devices within cavities of the existing bridge structure (**Appendix O**), which were installed as part of an FDOT bat exclusion project conducted in coordination with FWC during a prior bridge repair project in 2019. The 2019 project documented a colony of Brazilian free-tailed bats inhabiting the expansion joints of the bridge. Despite the installation of exclusion materials, the June 2025 field review confirmed continued bat activity beneath the bridge, with at least one (1) colony audibly detected and guano visibly observed on the Coquina Beach side of the structure (**Appendix O**).

Bat surveys will be conducted during the design phase prior to construction to determine the status of bat utilization of the bridge structure. If bats are present, exclusion will be implemented in accordance with applicable FWC guidelines. In compliance with F.A.C. Rule 68A-4.001 (General Prohibitions) and Rule 68A-9.010 (Taking Nuisance Wildlife), exclusion must be completed prior to demolition of the existing Longboat Key Bridge. According to the FDOT Bat Exclusion Handbook, exclusion is not permitted during

the bat maternity season (April 15 through August 15). Devices must remain in place for a minimum of four (4) nights, and forecasted low temperatures must remain above 50 degrees Fahrenheit during that period. With adherence to these requirements, pre-construction surveys and exclusion measures will minimize potential impacts, and no adverse effects to roosting bats are anticipated, as individuals are expected to relocate to suitable alternate roosting sites.

3.7 PROTECTED PLANT AND LICHEN SPECIES EVALUATION

A total of four (4) federally and state protected plants are known to occur within Manatee County. Of these species, two (2) plants are federally listed species, and two (2) plants are state protected species. **Table 5** presents federally and state protected plant species descriptions, suitable habitat, and probability of occurrence within the project study area.

Table 5: Potentially Occurring and Observed Listed Plant and Lichen Species

Species	Common Name	FDACS – Division of Plant Industry*	USFWS	Suitable Habitat	Probability of Occurrence
Chionanthus pygmaeus	Pygmy fringe-tree	-	E	Excessively drained sandy soils; scrub, high pine, dry hammocks, and transitional habitats	No
Cladonia perforata[1]	Florida perforate cladonia	-	E	High dune white sand scrub	No
Eragrostis pectinacea var. tracyi	Sanibel lovegrass	E	-	Dunes, maritime hammock, coastal grassland, old fields	No
Lythrum flagellare	Florida loosestrife	E	-	Depressional marshes, wet prairies	No

*T = Threatened, E = Endangered, - = Not currently listed, but protected by Title XXVIII of the F.S.

[1] Florida perforate cladonia is the only lichen species identified.

3.7.1 FEDERALLY LISTED PLANT SPECIES

Pygmy fringe-tree (*Chionanthus pygmaeus*)

The pygmy fringe-tree is federally listed as endangered by USFWS. This small shrub or tree typically grows less than 3 meters tall, with upright stems, leathery yellow-green leaves with maroon leafstalks, and clusters of white flowers with long, narrow petals. This species is associated with xeric hammocks, scrub, and sandhill habitats. No individuals were observed during field reviews. As a result, there is no probability of occurrence in the project area. Given the coastal setting of the project area and relatively high salinity conditions unsuitable for this species, the determination of effect is "no effect" for the pygmy fringe-tree.

3.7.2 FEDERALLY LISTED LICHEN SPECIES

Florida Perforate cladonia (*Cladonia perforata*)

Florida perforate cladonia is federally listed as endangered by USFWS. This terrestrial lichen forms dense clusters with pale yellowish-gray stalks. This species is known to occur in high sand dune ridges associated with scrub habitats. This species is extremely rare; however, it has been documented in Manatee County. No clusters were observed during field reviews, and suitable habitat is absent from the project study area. As a result, there is no probability of occurrence in the project area. Therefore, the determination of effect is "no effect" for Florida perforate cladonia.

3.7.3 STATE LISTED PLANT SPECIES

Sanibel lovegrass (*Eragrostis pectinacean var. tracyi*)

Sanibel lovegrass is a state listed endangered grass species endemic to southwest Florida. It is a perennial bunchgrass with narrow, wiry leaves and delicate flowering stems that produce small, purplish spikelets. This species typically occurs in coastal uplands, including pine flatwoods, scrub, and disturbed sandy areas. No individuals were observed during field reviews, and suitable coastal upland habitat is absent from the project area. As a result, there is no probability of occurrence in the project area. Therefore, the determination of effect is "no effect anticipated" for Sanibel lovegrass.

Florida loosestrife (*Lythrum flagellare*)

Florida loosestrife is a state listed endangered wildflower endemic to the west-central Florida peninsula. This species is a low-growing plant with purple-pink flowers, each with six (6) petals marked by a dark purple midvein. It typically occurs along wet prairie edges, pond margins, and moist roadsides. No individuals were observed during field reviews, and suitable habitat is absent from the project footprint. As a result, the probability of occurrence for this species is none. Therefore, the project is anticipated to have "no effect anticipated" on the Florida loosestrife.

3.7.4 NON-LISTED RARE PLANTS

Non-listed native plant species are generally not afforded the type of protection that state or federally protected listed plant or wildlife species are. The FDOT Office of Environmental Management (OEM) partnered with the Florida Wildflower Foundation (FWF) and the Florida Native Plant Society (FNPS) to form the Native Florida Plants FDOT Working Group. Through the working group, the FWF and FNPS can engage and review projects early in the process so that their comments regarding potential plants of concern can be considered by FDOT. The working group also includes representatives from FDACS to ensure the procedures under 581.185 F.S. and Chapter 5B-40, F.A.C. are followed.

Included in the ETDM Summary Report No. 14382 published on April 2020, it was recommended that surveys for rare and listed plants be conducted, and if present, plants should be protected or translocated to a suitable alternative site by a qualified organization such as the FDOT working group. The Peninsular Florida Genera of Concern List (2021) provided by FNPS was reviewed and plants that were identified with the potential to occur within the study area were not documented during field reviews.

4.0 WETLAND EVALUATION

In accordance with Executive Order (EO) 11990 Protection of Wetlands, U.S. DOT Order 5660.1A, FHWA Technical Advisory T6640.8A, and the Wetlands and Other Surface Waters chapter of the FDOT PD&E Manual, the FDOT has undertaken all action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities. The FDOT has determined that there is no practicable alternative to construction occurring in wetlands. Unavoidable wetland impacts are necessary to meet transportation safety standards. However, wetland impacts have been minimized to the extent possible. Any unavoidable impacts to wetlands will be mitigated to achieve no net loss of wetland function.

4.1 AGENCY COORDINATION

Agency coordination has been initiated through the ETDM process. Reviewing agency comments from the ETDM programming screen review include the FDEP, NMFS, SWFWMD, USACE, USEPA, and USFWS. All agencies noted that jurisdictional wetlands as well as continuous and discontinuous seagrass beds are within the study area. They also stated that impacts to wetlands should be avoided to the greatest extent practicable and that full compensatory mitigation be provided if impacts to wetlands are unavoidable. It was stated that the resources of concern include seagrasses that occur adjacent to and beneath the existing Longboat Key Bridge spanning Longboat Pass, as well as other estuarine habitats at the southern end of Anna Maria Sound and the northern end of Sarasota Bay. It was also stated that mangroves, seagrasses, and salt marshes at the southern end of Anna Maria Sound and the northern end of Sarasota Bay may be indirectly affected by the project. A review of the Corps Regulatory In-lieu Fee and Bank Information Tracking System (RIBITS) indicated that the proposed project corridor is not within the service area of any mitigation banks and stated that permittee responsible mitigation may need to be considered for all unavoidable wetland impacts.

State water quality standards will be met during construction in accordance with the most current edition of the FDOT's Standard Specifications for Road and Bridge Construction, "Prevention, Control, and Abatement of Erosion and Water Pollution," and through the use of BMPs. Additionally, a new stormwater management system, which will be constructed as part of the project, will meet state water quality criteria and minimize water quality impacts from stormwater discharges of the roadway, thus protecting adjacent and downstream wetlands. Reviewing agency comments for water resources from the ETDM programming screen review include USEPA, FDEP, and SWFWMD. All agencies noted that the project should reduce/minimize impacts to water quality by considering stormwater quality treatment together with water quality impacts to wetlands and other surface waters when designing the stormwater water management components of this project implementing BMPs, and meeting criteria in the Environmental Resource Permit (ERP) Applicant's Handbook Volume I and II. Additionally, it was also stated that mangroves, seagrasses, and salt marshes at the southern end of Anna Maria Sound and the northern end of Sarasota Bay may be indirectly affected by the project. To prevent pollutants coming off the bridge from reaching nearby estuarine habitats utilized by marine fishery resources, it was recommended for the bridge's stormwater to be conveyed off the bridge for treatment before it is discharged into the estuarine environment.

4.2 METHODOLOGY

The extent and types of wetlands and surface waters in the project study limits were documented in accordance with EO 11990 Protection of Wetlands, U.S. DOT Order 5660.1A, FHWA Technical Advisory T6640.8A, and the FDOT PD&E Manual. Wetlands were identified through the review of GIS data and field verification. The following sources were reviewed prior to conducting the field review:

- ETDM #14382 Summary Report (April 2020);
- FDOT APLUS recent aerial imagery (2024);
- Land use and land cover maps (SWFWMD 2023);
- USDA, NRCS, Web Soil Survey;
- USFWS NWI Maps; and
- Cumulative Impact Basin (SWFWMD 2015).

Subsequent to the review of all available materials, field assessments were conducted on September 18 and 19, 2023, January 30 to February 1, 2024, and June 26 and 27, 2025, to identify the presence of wetland vegetation, evidence of hydrology, and hydric soil indicators. To determine benthic marine resources in the project study area, an in-water survey was conducted on September 18, 2023. A technical memorandum containing the methods and results of the in-water survey findings can be found in **Appendix N**. During field reviews of the project study area on January 30 and February 1, 2024, environmental scientists aerially-delineated the approximate boundaries of existing wetland, surface water, and other surface water communities. However, in response to reported coastline alterations resulting from storm surge associated with Hurricane Milton in October 2024, the approximate boundaries of existing wetlands were re-evaluated on June 26 and 27, 2025. Each system within the project study area was classified using FLUCFCS (SWFWMD 2023) and the USFWS Classification of Wetlands and Deepwater Habitats of the United States (Cowardin, et al. 1979). Approximate boundaries were identified in accordance with the Florida statewide unified wetland delineation methodology as adopted by the FDEP and the Water Management Districts (WMDs) per Chapter 62-340 of the F.A.C. and described in The Florida Wetlands Delineation Manual, the USACE 1987 Corps of Engineers Wetland Delineation Manual (Y-87-1) and the 2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coast Plain Region (Version 2.0) (ERDC/EL TR-10-20). Formal wetland, or seagrass boundaries were not determined as part of this study and will be completed during the design and permitting phase of this project. In addition, project biologists evaluated wetland, surface water and other surface water systems using the Uniform Mitigation Assessment Method (UMAM) to estimate mitigation needs. Like the approximate wetland boundaries and in-water survey findings, these assessments are not binding and are to be used for estimation purposes. The results presented in this report are estimates and will be finalized during the design and permitting process. They represent a compilation of information collected from field assessments conducted by project biologists and from the data sources described above. **Figure 10** illustrates field observed wetland vegetation. **Appendix O** contains representative site photographs.

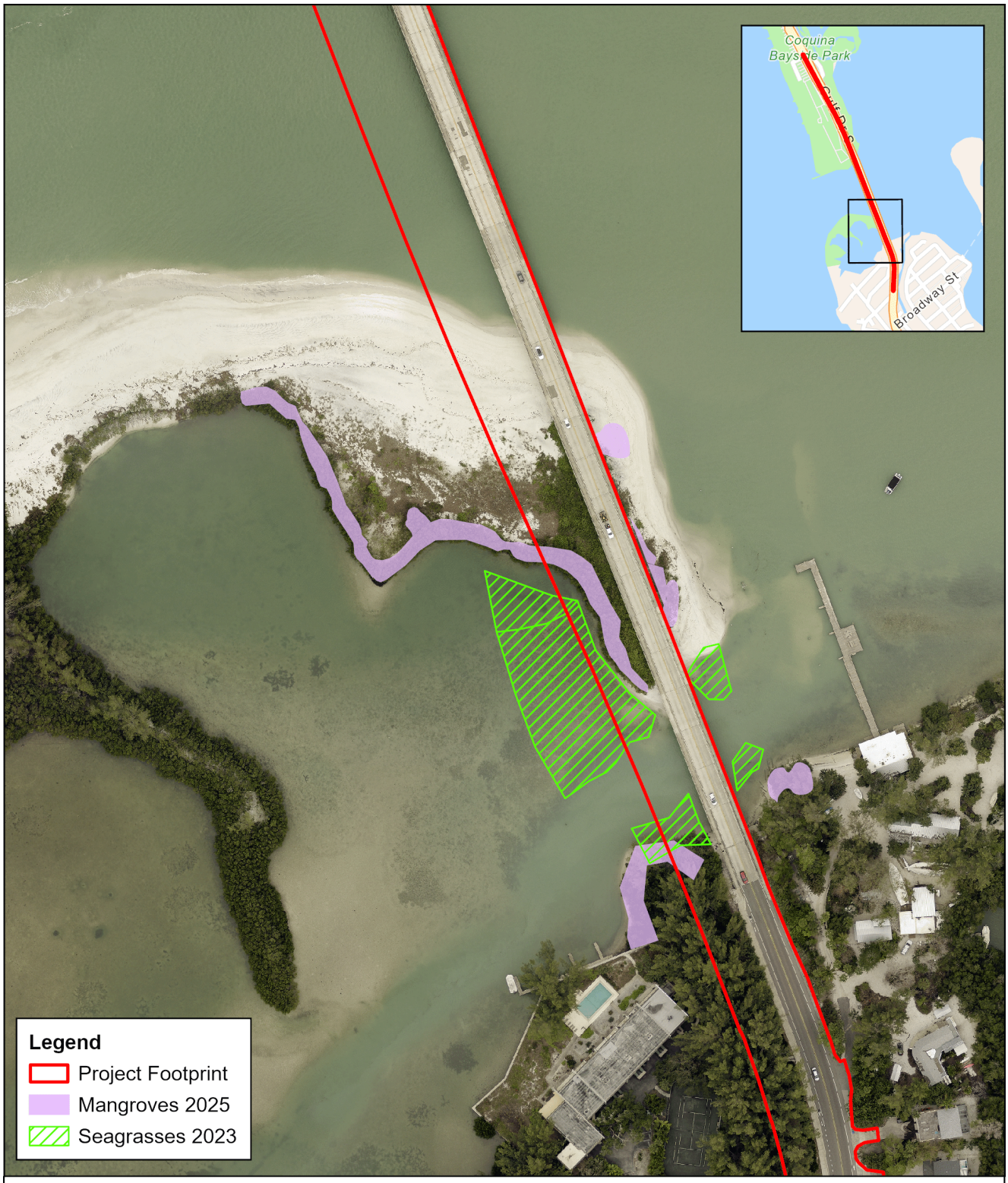


Figure 10a: Field Observed Wetland Vegetation

S.R. 789 (Longboat Key) PD&E Study
From North Shore Road to Coquina Park Entrance
FPID No. 436676-1-22-01
Manatee County

Image Source: APLUS
Image Date: 2024

NORTH

0 95 190 Feet

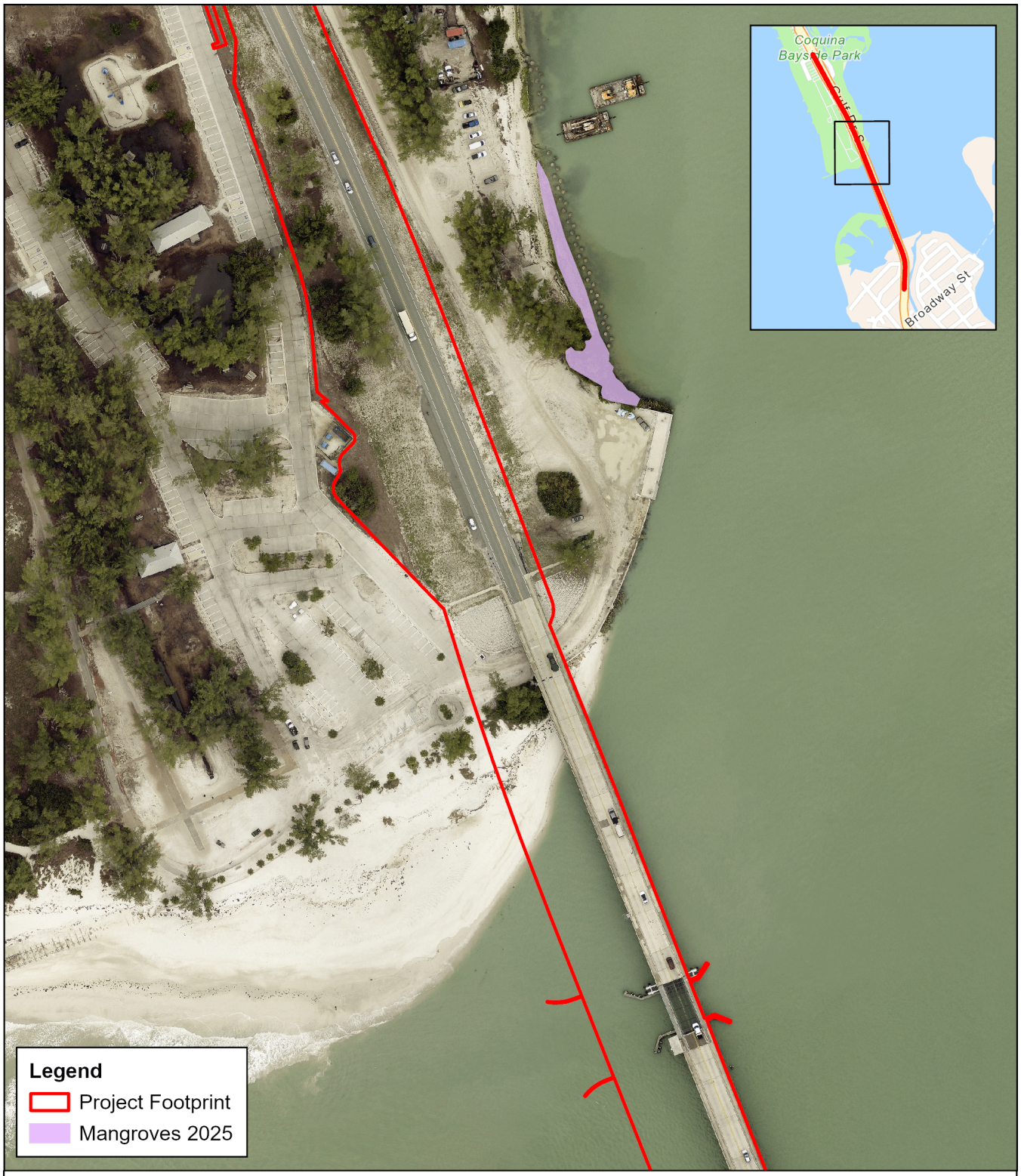


Figure 10b: Field Observed Wetland Vegetation

S.R. 789 (Longboat Key) PD&E Study
From North Shore Road to Coquina Park Entrance
FPID No. 436676-1-22-01
Manatee County

Image Source: APLUS
Image Date: 2024

NORTH

0 95 190 Feet

4.3 WETLAND AND SURFACE WATER IMPACTS

4.3.1 DIRECT IMPACTS

Table 6 summarizes the wetland and surface water resources impacted by the Preferred Alternative (high level fixed bridge). **Figure 11** is a map of the proposed wetland and surface water impacts. The Preferred Alternative is anticipated to directly impact 1.95 acres of mangrove wetlands (FLUCFCS 6120), surface waters (unconsolidated bottom), and seagrasses (FLUCFCS 9113 and FLUCFCS 9116). This includes 0.11 acres of impacts to jurisdictional wetlands, 1.69 acres to surface waters, and 0.15 acres of continuous and discontinuous seagrass beds. Seagrass beds do not fulfill the criteria for wetland delineation, but provide important ecological functions, and therefore are classified as surface waters under Chapter 62-340 of the F.A.C. For this evaluation, seagrasses are a subset of surface waters that will require mitigation.

4.3.2 INDIRECT IMPACTS

The Preferred Alternative is anticipated to result in approximately 0.23 acres of indirect impacts to wetland and seagrass habitats. This includes approximately 0.09 acres of indirect impacts to jurisdictional wetlands (mangroves), and 0.14 acres to continuous and discontinuous seagrass beds. This assessment represents a conservative estimate, as indirect shading impacts are anticipated to result in the loss of wetland and SAV function. It is assumed that mangroves and SAV would not persist beneath the proposed structure due to the extent of shading, consistent with conditions observed under the existing structure.

4.3.3 SECONDARY IMPACTS

Secondary effects are those impacts that are reasonably certain to occur later in time as a result of the proposed project. They may occur outside of the area directly affected by the proposed project. Potential secondary effects include increased contaminants such as trash or oil entering the wetlands or changes in light penetration. When a portion of wetland is directly impacted by new construction, the SWFWMD and USACE require an analysis of secondary impacts to the remaining portion of the wetland to assess reduced functions. Typically, if an upland buffer cannot be provided, a width of 25 feet of anticipated secondary impact is assumed to the wetland. During permitting, secondary wetland impacts and required mitigation will be assessed in accordance with Section 62-345, F.A.C.

Table 6: Proposed Wetland and Surface Water Impacts

ID	FLUCFCS Classification	NWI Classification	Preferred Alternative Direct Impacts (acres)	Preferred Alternative Indirect Impacts (acres)
SW-1	5400	E1UBL	0.35	1.34
WL-1	6120	E2FO3N	-	-
WL-2	6120	E2SS3P	-	-
WL-3	6120	E2SS3P	-	-
WL-4	6120	E2SS3P	-	-
WL-5	6120	E2SS3P	0.00	0.02
WL-6	6120	E2SS3P	0.02	0.07
DS-1	9113	E2ABM	0.00	0.05
DS-2	9113	E2ABM	-	-
DS-3	9113	E2ABM	-	-
DS-4	9113	E2ABM	-	-
CS-1	9116	E2ABM	0.01	0.09
Total Wetland Impacts			**0.02**	**0.09**
Total Impacts to Surface Waters (Non-SAV)			**0.35**	**1.34**
Total Impacts to Seagrasses			**0.01**	**0.14**
Total Overall Impacts			**0.38**	**1.57**

FLUCFCS codes and NWI Classifications are based on field verification.
E2ABM: Estuarine, Intertidal, Aquatic Bed, Irregularly Exposed
E2FO3N: Estuarine, Intertidal, Forested, Broad-Leaved Evergreen, Regularly Flooded
E2SS3P: Estuarine, Intertidal, Scrub-Shrub Wetland, Broad-Leaved Evergreen, Irregularly Flooded
E1UBL: Estuarine, Subtidal, Unconsolidated Bottom, Subtidal

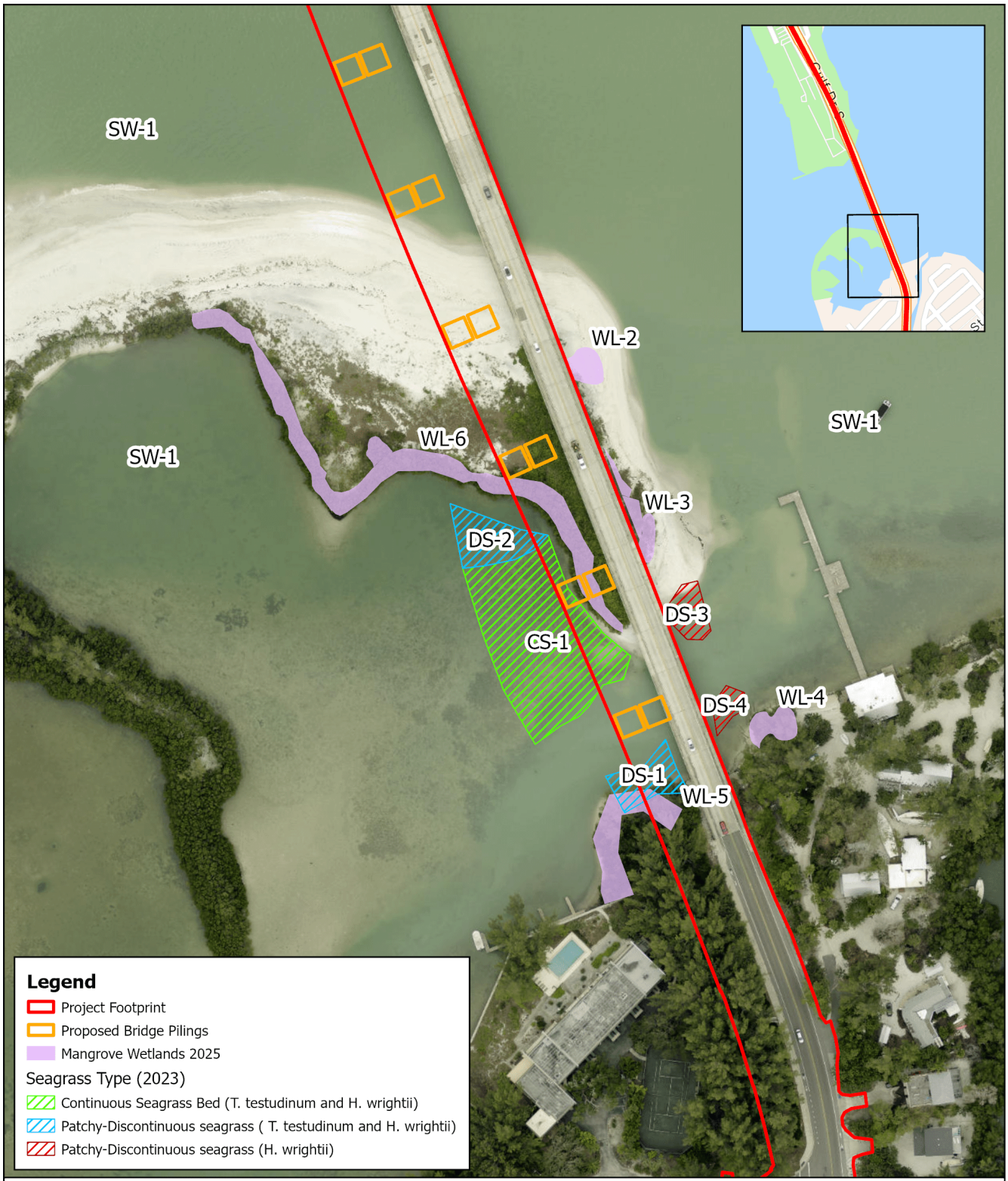


Figure 11a: Wetland and Surface Water Impacts

S.R. 789 (Longboat Key) PD&E Study
From North Shore Road to Coquina Park Entrance
FPID No. 436676-1-22-01
Manatee County

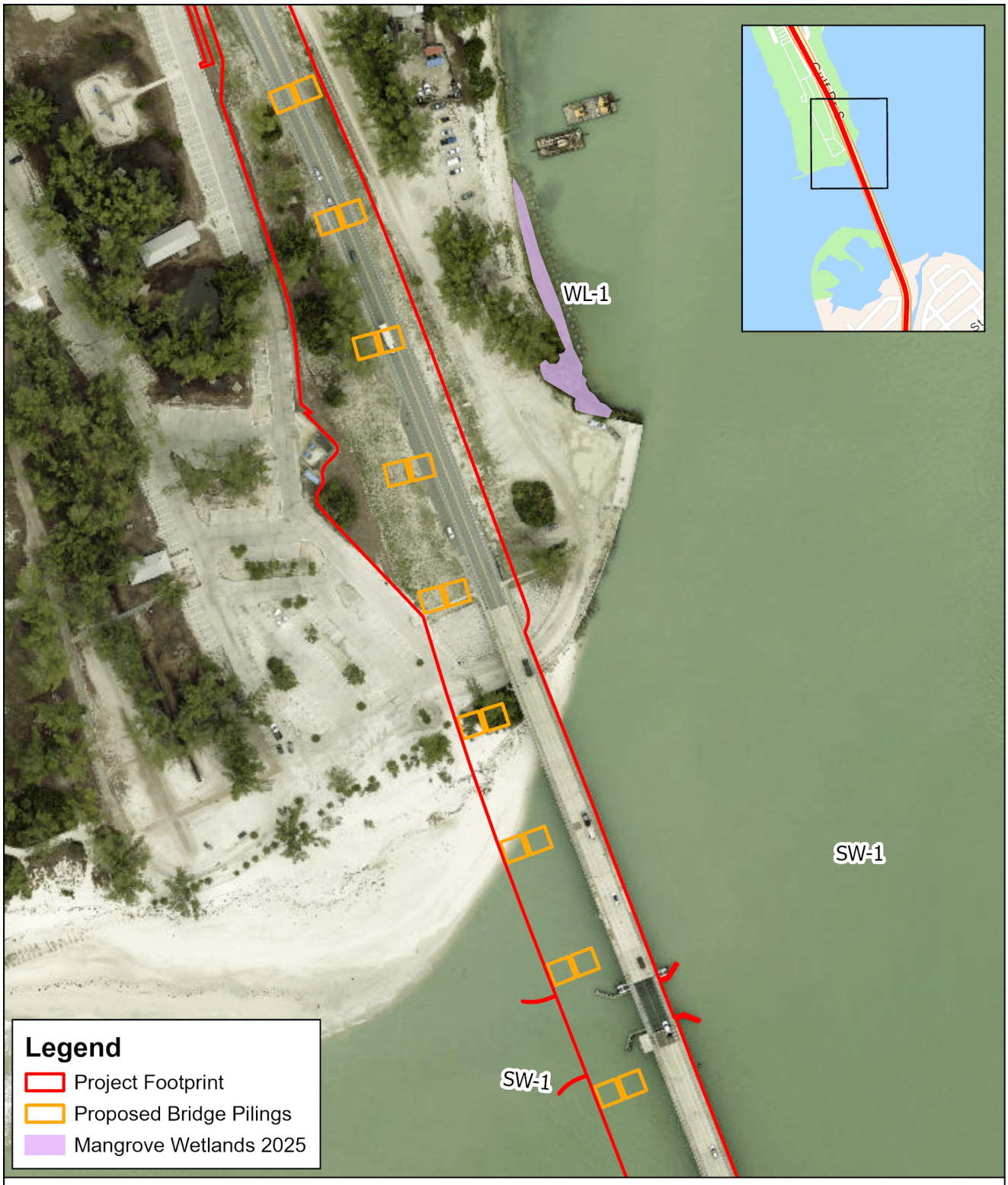


Figure 11b: Wetland and Surface Waters Impacts

S.R. 789 (Longboat Key) PD&E Study
From North Shore Road to Coquina Park Entrance
FPID No. 436676-1-22-01
Manatee County

Image Source: APLUS
Image Date: 2024

NORTH

0 175 350
Feet

4.4 Uniform Mitigation Assessment Methodology and Results

The UMAM, established under Chapter 62-345, F.A.C., is a state and federally approved method used to assess wetlands and to determine the amount of mitigation required to offset adverse impacts. UMAM was used to estimate functional loss of wetlands incurred by impacts as a result of the project. Functional loss is defined as the removal of ecosystem services such as wildlife habitat and flood attenuation that the impacted areas currently provide. To calculate functional loss, the difference between the existing condition function scores and the proposed condition function scores for each wetland was multiplied by the proposed project's impact acreage. Based on this analysis, the Preferred Alternative is estimated to result in a loss of 0.09 functional units. Indirect shading impacts are anticipated to result in the loss of wetland and SAV function. It is assumed that mangroves and SAV would not persist beneath the proposed structure due to the extent of shading, consistent with conditions observed under the existing structure. These calculations are preliminary and subject to agency review. The completed UMAM data sheets are provided in **Appendix P**, and the scores and values summarized in **Tables 7** and **8** may be revised during the state and federal permitting process.

Table 7: Representative UMAM Scores for Wetland and Surface Waters

FLUCFCS Code	FLUCFCS Code	Wetland Type	Representative Wetlands	Direct & Indirect Impact Delta
6120	Mangrove Swamp	Mangrove	WL-1, WL-2, WL-3, WL-4, WL-5, WL-6	0.47
9113	Patchy - Discontinuous Seagrass	Seagrass	DS-1, DS-2, DS-3, DS-4	0.17
9116	Continuous Seagrass	Seagrass	CS-1	0.30

Note: UMAM scores have not been approved by permitting agencies and are subject to change during the permitting process. All wetlands, surface waters, and other surface waters were assigned to UMAM analyses regardless of proposed impact or not.

Table 8: Estimated UMAM Functional Loss from Wetland and Seagrass Impacts

ID	FLUCFCS Classification	Direct & Indirect UMAM Delta	Preferred Alternative Direct & Indirect Impacts (acres)	Direct & Indirect Functional Loss for Preferred Alternative
WL-5	6120	0.47	0.02	0.01
WL-6	6120	0.47	0.09	0.04
DS-1	9113	0.17	0.05	0.01
CS-1	9113	0.30	0.10	0.03
			Total Wetland Functional Loss	0.05
			Total Seagrass Functional Loss	0.04
			Total Functional Loss	0.09

4.5 WETLAND IMPACT MITIGATION

All UMAM scores, UMAM calculations, preliminary surface water boundaries and determinations discussed are subject to revisions and approval by regulatory agencies during the permitting process. The exact type of mitigation, if needed, to offset impacts will be coordinated with the USACE and the SWFWMD during the permitting phase of this project. Details of proposed mitigation are discussed in **Section 4.5.1** and **Section 4.5.2**. Mitigation will be addressed pursuant to Chapter 373.4137, F.S. in order to satisfy all mitigation requirements of Part IV, Chapter 373, F.S. and 33 U.S.C. §1344. This project is in conformance with EO 11990, Protection of Wetlands. Consideration was given to avoiding and/or minimizing wetland impacts. The proposed project will not result in any significant short-term or long-term adverse impacts to wetlands. There is no practicable alternative to construction in wetlands, and all appropriate measures have been taken to avoid, minimize, and mitigate harm to these resources.

4.5.1 FLUCFCS 6120 MANGROVE SWAMP | ESTUARINE FORESTED WETLANDS | NWI E2ABM

Consistent with SWFWMD regulatory criteria, compensatory wetland mitigation will be required for impacts to mangrove communities resulting from fill and shading associated with project activities. A total of 0.05 credits will need to be purchased to mitigate for the loss of mangrove wetland function as a result of the project. The project study area is within the service areas of the Nature Coast Mitigation Bank and the Long Bar Pointe Mitigation Bank, both of which provide compensatory mitigation for estuarine forested (mangrove) wetlands. The project shares the South Coastal Drainage basin as defined by the SWFWMD cumulative impact basin, which encompasses both mitigation banks.

The USACE will require wetland mitigation for impacts to waters of the U.S. including SFH for the wood stork. The USACE does not consider drainage basins, but instead mitigation bank service areas and wood stork CFAs as part of the geographical component of the mitigation assessment. During the ETDM review, a review of the Corps RIBITS indicated that the proposed project corridor is not within the service area of any mitigation banks and stated that permittee responsible mitigation may need to be considered for all unavoidable wetland impacts. As of this NRE document, Nature Coast Mitigation Bank has sufficient federal estuarine forested credits available to fully offset the anticipated project impacts. The status of available mitigation banks and credits will be re-assessed as this project moves forward into design and permitting.

4.5.2 FLUCFCS 9113 PATCHY – DISCONTINUOUS SEAGRASS | 9116 CONTINUOUS SEAGRASS | SAV | NWI E2ABM

Consistent with SWFWMD regulatory criteria, compensatory mitigation will be required for impacts to seagrasses resulting from fill and shading from project activities. A total of 0.04 credits will need to be purchased to mitigate for the loss of SAV (seagrass) function as a result of the project The project study area is within the service areas of Northshore Park Seagrass Mitigation Bank and Long Bar Pointe Mitigation Bank, both of which provide compensatory mitigation for unavoidable SAV (seagrass) impacts. However, neither bank is federally permitted so only state credits are available. The project is located within the South Coastal Drainage Basin as defined by the SWFWMD cumulative impact basin. Both mitigation banks are also located within this same drainage basin.

The USACE will require mitigation for fill impacts to waters of the U.S. including seagrass impacts. The USACE does not use the boundaries of the WMD drainage basins but instead utilizes defined mitigation bank service areas as part of the geographical component of their mitigation assessment. Because the above-mentioned mitigation banks have not been federally authorized/accredited, it is anticipated that mitigation will be accomplished via permittee-responsible mitigation through District One's Skyway WADs project. The Skyway WADs project is permitted to provide mitigation for up to 0.2 units of functional loss associated with this project.

5.0 ESSENTIAL FISH HABITAT

In accordance with the Magnuson-Stevens Fishery Conservation and Management Act (MSA) of 1996 (50 CFR Section 600.920), as amended through January 12, 2007, and as administered by the NOAA NMFS, federal agencies must consult with NMFS regarding any of their actions authorized, funded, undertaken, or proposed to be authorized, funded, or undertaken that may adversely affect EFH. EFH is defined in the MSA as "those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity." The MSA set forth a mandate to NMFS and regional fishery management councils (FMC) to designate EFH for species managed under federal Fishery Management Plans (FMPs). FMPs are prepared by regional FMCs and contain information pertaining to conservation and management measures for each specific fisheries' resources as well as other provisions required by the MSA. Subsets of EFH that are designated based on ecological importance, susceptibility to human-induced environmental degradation, susceptibility to stress and development, or rarity of the habitat type are referred to as EFH Habitat Areas of Particular Concern (HAPC). HAPCs are identified by the region's FMC. The regional FMC that has jurisdiction over Western Florida where this project is located, is the Gulf of Mexico Fishery Management Council (GMFMC).

This EFH Assessment has been prepared in accordance with the MSA as well as the EFH chapter of the FDOT PD&E Manual. The objective of this EFH Assessment is to describe how the Preferred Alternative may affect EFH within the study area and to describe how the proposed Longboat Key Bridge replacement may affect EFH within Longboat Pass, the tidal embayment south of Greer Island, Sarasota Bay, and Anna Maria Sound. As noted by NMFS in the ETDM #14382 Summary Report, mangroves, seagrasses, salt marshes at the southern end of Anna Maria Sound and the northern end of Sarasota Bay may be indirectly affected by the project. To prevent pollutants coming off the bridge from reaching nearby estuarine habitats utilized by marine fishery resources, NMFS recommended for the bridge's stormwater to be conveyed off the bridge for treatment before it is discharged into the estuarine environment.

5.1 METHODOLOGY

In order to determine EFH that has potential to occur within the study area, available site-specific data was collected and evaluated. The project area has been reviewed to assess the potential occurrence of the highly migratory species during any stage of their life cycle.

Prior to a field review, scientists performed a GIS database and literature review to identify protected species, wetlands, and EFH documented within and adjacent to the study area. Referenced materials include the following data sources:

- USFWS NWI maps;
- ETDM #14382 Summary Report (2020);
- SWFWMD Seagrass Cover maps (2022);
- FWC Statewide Seagrass GIS data layer (2024); and
- NOAA EFH mapper (accessed 2025).

Environmental scientists familiar with Florida coastal communities conducted field reviews of the project area on June 26 and 27, 2025. During field reviews of the project study area, environmental scientists aerially-delineated the approximate boundaries of existing wetland, surface water, and other surface water communities. To determine benthic marine resources in the project study area, an in-water survey was conducted on September 18, 2023. A technical memorandum containing the methods and results of the in-water survey can be found in **Appendix N**. Based on the evaluation of collected data, field reviews, and database searches, the managed species and habitat discussed in **Section 5.2.2** were considered as having the potential to occur within or adjacent to the study area. The limits of these identified EFH resources were compared to the footprint of the Preferred Alternative to determine the potential for impacts to EFH from the project.

5.2 EFH INVOLVEMENT

Habitat Areas of Particular Concern

The GMFMC is responsible for the designation of HAPCs. HAPCs are specific areas within EFH that either play especially important ecological roles in the life cycles of managed species or are especially vulnerable to degradation from fishing or other human activities. There are no species-specific HAPCs designated within the study area. However, in the 1998 Generic Amendment, the GMFMC identified the following general HAPC for all FMP-managed species:

> "Nearshore areas of intertidal and estuarine habitats with emergent and submerged vegetation, sand and mud flats, shell and oyster reefs, and other substrates that may provide food and rearing for juvenile fish and shellfish managed by the GMFMC; and migration route areas for adult and juvenile fish and shellfish; and that are sensitive to natural or human-induced environmental degradation, especially in urban areas and in other areas adjacent to intensive human-induced developmental activities."

The seagrass and mangroves present within the study area would fall under this HAPC description.

The in-water survey identified approximately 0.37 acres of continuous seagrass beds and 0.20 acres of patchy, discontinuous seagrass beds of the same species. Mangrove wetlands were also identified within the project study area. These habitats are considered to provide EFH for species managed under the coastal migratory pelagics, red drum, reef fish, spiny lobster, and shrimp FMPs.

5.2.1 DESCRIPTION OF THE PROPOSED ACTION

Construction of the Preferred Alternative with the potential to impact EFH resources is limited to the removal of the existing low level drawbridge and pilings and the installation of a new high level bridge and pilings. The proposed bridge will be located near the existing bridge with a slight overlapping footprint, ranging from approximately 25 feet west of, to directly adjacent to the existing structure. The 20-span replacement bridge will require a total of 624 piles. Each of the nineteen (19) interior bents will include two (2) footings with sixteen (16) piles per footing, resulting in 608 piles. The two (2) end bents will each be supported by eight (8) piles, adding sixteen (16) piles. Each pile will have an approximate footprint of 4 square feet.

5.2.2 MANAGED SPECIES

EFH within the project area includes Longboat Pass under GMFMC jurisdiction supports EFH for fifty-five (55) representative managed species across six (6) FMPs: coastal migratory pelagic, red drum, reef fish, shrimp, spiny lobster, and stone crab management plans. Although not managed by the GMFMC, forty-eight (48) highly migratory species have NMFS-designated EFH requirements and occur within the Gulf of Mexico. The forty-eight (48) highly migratory species are broken into six (6) groups: billfish, large coastal sharks, pelagic sharks, small coastal sharks, swordfish, and tuna.

Potential EFH features that may be temporarily affected include mangrove fringe, continuous and discontinuous seagrass, and unconsolidated bottom substrate within the tidal embayment and Longboat Pass. These habitats provide EFH for species associated with the applicable FMPs; however, effects are anticipated to be minimal due to implementation of FDOT's Standard Specifications, construction BMPs, and required mitigation measures. No significant adverse impacts to EFH or managed species are expected. Further details on behavior patterns and life history for species within each FMP are provided in the sections below.

Red Drum (*Sciaenops ocellatus*) is found throughout Florida estuaries within the Gulf of Mexico in primarily euryhaline waters. Adults are common in Sarasota Bay and juveniles are common to abundant. Red drums are estuarine dependent. After hatching, larvae are carried into the shallow water of bays and estuaries with the tide. Once in an estuarine area, they seek the shelter of grassy covers, tidal flats, and lagoons for protection. Juveniles prefer shallow, protected, open estuarine waters with depths up to 10 feet. Adults are found in littoral and shallow nearshore waters off beaches and off-shore in depths from 130 to 230 feet. Seagrasses and unconsolidated sand bottom provide EFH for the red drum within this FMP. Proposed impacts to these habitats are anticipated to be minor with similar/equivalent benthic conditions persisting post-construction.

Shrimp (*Farfantepenaeus ssp.*) distribution is associated with seagrasses in general, and shoal grass in particular. They are distributed throughout the west coast of Florida. The juveniles occur in oligohaline to euryhaline estuaries and bays. They seek the shelter of dense seagrasses with smaller juveniles preferring shoal grass and the adults preferring the refuge of turtle grass. Adults inhabit deep offshore marine waters commonly nine to 44 meters (145 feet) deep and inhabit substrates including shell-sand, sand, coral-mud, and mud. Mangrove wetlands, seagrasses, and unconsolidated sand bottom provide EFH for the shrimp species within this FMP. Proposed impacts to these habitats are anticipated to be minor with similar/equivalent benthic conditions persisting post-construction.

Spiny Lobster (*Panulirus argus*) occurs throughout the Caribbean Sea, along the shelf waters of the southeastern United States north to North Carolina, in Bermuda, and south to Brazil and the Gulf of Mexico. They are found from just below the water surface to depths of 1,650 feet. The spawning season occurs from April through September in the southeastern U.S. and throughout the year in the Caribbean and the Florida Keys offshore reefs. Adults move along shore and offshore seasonally. Caribbean spiny lobsters migrate to deeper water in order to evade the stresses of the cold and turbid waters. Seagrasses, and unconsolidated sand bottom provide EFH for the spiny lobster within this FMP. Proposed impacts to these habitats are anticipated to be minor with similar/equivalent benthic conditions persisting post-construction

Stone Crab (*Menippe mercenaria*) occurs along the western Atlantic coast from North Carolina through the Gulf of Mexico, including the Florida Keys and parts of the Caribbean Sea. This species inhabits shallow coastal waters, bays, and estuaries, typically occupying areas with rocky substrates, shell rubble, hardbottom, and seagrass beds that provide refuge and foraging habitat. Stone crabs occur from the intertidal zone to depths approximately 200 feet. Spawning generally occurs from spring through early fall, with females migrating offshore to release larvae. EFH for the stone crab, as designated under the FMP for the Stone Crab Fishery of the Gulf of Mexico, includes seagrass beds, unconsolidated sand, and hardbottom areas that support various life stages. Proposed project activities may temporarily disturb these habitats; however, impacts are anticipated to be minor, with similar benthic conditions expected to persist following construction.

Coastal Migratory Pelagics EFH consists of Gulf of Mexico waters and substrates extending from the U.S./Mexico border to the boundary between the areas covered by the GMFMC and the South Atlantic Fishery Management Council (SAFMC) from estuarine waters out to depths of 600 feet. Cero (*Scomberomorus regalis*), cobia (*Rachycentron canadum*), king mackerel (*Scomberomorus cavalla*), little tunny (*Euthynnus alletteratus*), and Spanish mackerel (*Scomberomorus maculates*) are species managed by the SAFMC. Spanish mackerel is known to occur within or near the project area and are prevalent throughout Florida waters inshore, offshore, and nearshore. The species is frequently found over grass beds and reefs. Spanish mackerel are migratory fish that swim to the north in the spring and return to southern waters when the temperatures drop below 70 degrees Fahrenheit. Proposed impacts to these habitats are anticipated to be minor with similar/equivalent benthic conditions persisting post-construction.

Reef Fish EFH consists of Gulf of Mexico waters and substrates extending from the U.S./Mexico Border to the boundary between the areas covered by the GMFMC and the SAFMC from estuarine waters out to depths of 600 feet. The Gulf of Mexico reef fish primarily consists of grouper and snapper species. Gray Snapper (*Lutjanus griseus*) is a tropical, marine reef fish that occur from the U.S. mid-Atlantic south to Rio de Janeiro, Brazil. Juveniles are common to inshore waters throughout Florida, and adults are found in areas of moderate to high relief on the continental shelf. Spawning occurs during summer (June-September) in offshore waters around reefs, wrecks, and other bottom structures. Adult gray snappers are nocturnal predators that forage away from their reef habitats. Juveniles feed diurnally among seagrass beds and feed primarily on penaeid shrimp and crabs. Adult gray snappers feed on fish (largely grunts), shrimp, and crabs. Mangrove wetlands, seagrasses, and unconsolidated sand bottom provide EFH for the reef fish within this FMP. Proposed impacts to these habitats are anticipated to be minor with similar/equivalent benthic conditions persisting post-construction.

The EFH review indicates that several managed species have a medium potential for occurrence within the project study area due to the availability of suitable habitat and the project's location within designated EFH or within the species' known range. These include seven (7) Highly Migratory Species of Large Coastal Sharks, three (3) Highly Migratory Species of Small Coastal Sharks, and eleven (11) Reef Fish. Additionally, three (3) Coastal Migratory Pelagic fish, two (2) Highly Migratory Species of Small Coastal Sharks, one (1) Red Drum, thirteen (13) Reef Fish, one (1) Shrimp, and two (2) Stone Crabs were also identified as having a medium potential for occurrence.

5.3 ANALYSIS OF EFFECTS ON EFH

While the proposed project has incorporated practicable measures to avoid and minimize impacts to managed species and their habitats, unavoidable impacts may occur as a result of roadway construction for the Longboat Key Bridge. The Preferred Alternative involves replacing the existing low-level drawbridge with a fixed high level bridge spanning Longboat Pass, an estuarine system that connects to the Gulf of Mexico. The replacement bridge will span approximately 1.95 acres of wetlands, seagrasses, and open surface waters within Longboat Pass and adjacent areas of Greer Island.

Black mangrove communities were observed at the southern tip of Greer Island, beneath and west of the existing bridge structure, as well as along both sides of the Longboat Key Bridge. Additional mangrove habitat consisting of red and white mangroves was observed east of the bridge within the southeast corner of Coquina Beach Park. The in-water survey (**Appendix N**) documented five (5) seagrass beds between the southern tip of Greer Island and Longboat Key. These included one (1) continuous bed and two (2) patchy-discontinuous beds composed of turtlegrass and shoalweed west of the bridge, as well as two (2) patchy-discontinuous beds of shoalweed east of the bridge.

Direct and indirect impacts to EFH associated with the Preferred Alternative are discussed in the subsections below.

5.3.1 DIRECT AND INDIRECT IMPACTS

Table 9 summarizes the estimated permanent impacts to EFH with the Preferred Alternative. These impacts are expected to include direct permanent impacts to estuarine forested mangroves, seagrass beds, and unconsolidated bottom (silty-sand bottom) habitats. The impact estimates were calculated based on the full limits of construction and will be refined during the design phase once project-specific data are available. Because the method of bridge construction has not yet been determined, temporary construction-related impacts cannot be quantified at this time. Additional coordination with the regulatory agencies will occur during the design phase and prior to permitting, at which point temporary impacts will be identified and assessed.

Table 9: Impacts to EFH

System Type	Preferred Alternative Direct Impacts (acres)	Preferred Alternative Indirect Impacts (acres)
Mangrove Swamp (estuarine forested)	0.02	0.09
Seagrass Beds	0.01	0.14
Unconsolidated Bottom (silty-sand bottom)	0.35	1.34
Total	**0.38**	**1.57**

Potential EFH within the project study area includes mangrove wetlands (estuarine forested), seagrass beds, and unconsolidated bottom substrate (silty-sand bottom) within the tidal embayment south of Greer Island that connects Sarasota Bay and Longboat Pass. The Preferred Alternative is anticipated to result in 0.02 acres of direct impacts to mangroves from pile installation and 0.09 acres of indirect impacts from shading. Seagrass beds are anticipated to be impacted by 0.01 acres of direct impacts from pile installation and 0.14 acres of indirect impacts from shading. Unconsolidated silty-sand bottom is anticipated to be impacted by 0.35 acres of direct impacts from pile installation and 1.34 acres of indirect impacts from shading.

The remaining mangroves will not be impacted. Proposed seagrass impacts by the Preferred Alternative occur beneath the surface waters of the tidal embayment within Greer Island, totaling to 0.15 acres of continuous and discontinuous seagrass habitat. Temporary displacements for individuals of the species within these FMPs may occur during project construction; however, all the species within these FMPs would be expected to return post-construction as similar pre-construction conditions will persist in the project area post-construction regardless of the direct impacts to any of the EFH within the project area.

5.3.2 AVOIDANCE, MINIMIZATION MEASURES, AND POTENTIAL MITIGATION

The Preferred Alternative will provide water quality improvements to EFH within the project study area. Currently, no stormwater management facilities exist within the project limits. The existing bridge conveys runoff directly into Sarasota Bay through scuppers, resulting in untreated discharges to surrounding estuarine waters. In contrast, the Preferred Alternative eliminates scuppers and conveys runoff to stormwater facilities located within existing FDOT ROW. Runoff from the bridge will be directed to a pond to the north and a swale to the south, where it will infiltrate the ground or receive treatment prior to reaching the bay. A permanent stormwater management system will also be constructed to meet state water quality criteria, providing perpetual treatment of roadway runoff and reducing long-term pollutant loading to adjacent estuarine habitats.

Consistent with NMFS recommendations, stormwater will be conveyed off the bridge for treatment prior to discharge into the estuarine environment, thereby reducing potential effects on EFH and associated fishery resources. Additionally, impacts to water quality and estuarine/marine habitats from construction activities will be minimized through adherence to FDOT's Standard Specifications for Road and Bridge Construction and the implementation of BMPs designed to protect EFH resources.

At this point in the preliminary design phase of the Preferred Alternative, attempts to avoid and minimize impacts to EFH have not yet been fully examined. An updated in-water survey will be performed during design and prior to construction of the recommended alternative to determine seagrass presence within the proposed bridge footprint. The updated seagrass survey will include quantitative and qualitative assessment to better determine the functional loss due to potential impacts. This information shall be documented and coordination with the NMFS shall be conducted as part of the EFH Assessment. EFH 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 22 U.S.C. §1344. Compensatory mitigation for this project will be completed through the use of mitigation banks and any other mitigation options such as the Skyway WADS project, that satisfy state and federal requirements

and will be conducted in conjunction with wetland mitigation. Mitigation requirements for impacts to EFH will be determined through consultation with the NMFS during project design.

5.4 EFH DETERMINATION

Proposed impacts to EFH include: 0.02 acres of direct impacts from pile installation and 0.09 acres of indirect impacts from shading to mangroves; 0.01 acres of direct impacts from pile installation and 0.14 acres of indirect impacts from shading to continuous and discontinuous seagrass habitat; 0.35 acres of direct/permanent impacts to unconsolidated sandy bottom; and approximately 1.34 acres of indirect impacts from shading from the wider replacement bridge structure.

EFH within the project footprint of the existing Longboat Key Bridge is anticipated to return to pre-disturbance conditions following removal of the structure. All state and federal permitting requirements will be addressed in later phases, and appropriate compensatory mitigation 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 U.S.C § 134. Any unavoidable impacts to wetlands or seagrasses will be mitigated to achieve no net loss of wetland function. Mitigation requirements will be determined in consultation with NMFS during design. Based on the environmental review of the current design of the Preferred Alternative, it is anticipated that this project will have **Minimal** impacts to EFH. Additionally, due to the nature of the project, no populations of any of the fifty-five (55) managed species listed by the GMFMC are expected to be adversely affected by the proposed project.

6.0 PERMITTING AND REVIEW AGENCIES

Both the USACE and the SWFWMD regulate impacts to wetlands within the study area. Other agencies, including the USFWS, NMFS, USEPA, and the FWC, review and comment on wetland permit applications. In addition, the USCG regulates bridge construction, and the FDEP regulates activities seaward of the Coastal Construction Control Line (CCCL), as well as stormwater discharges from construction sites, and issues SSL authorizations. The FWC issues incidental take permits for imperiled beach-nesting shorebirds. Because a USCG Bridge Permit is required, the USCG has agreed to act as lead federal agency and will include Section 404 and Section 10 permit requirements within their review. The complexity of the permitting process will depend on the degree of impact to jurisdictional areas. It is anticipated that the following permits will be required for this project:

Permit	**Issuing Agency**
Section 404 and Section 10 Permit	USACE
Bridge Permit	USCG
Incidental Take Permit (as necessary)	FWC
Environmental Resource Permit	SWFWMD
Coastal Construction Control Line Permit	FDEP
National Pollutant Discharge Elimination System (NPDES)	FDEP
Sovereign Submerged Lands Authorization	FDEP

7.0 CONCLUSIONS

7.1 PROTECTED SPECIES AND HABITATS

Based on evaluation of collected data and field reviews in accordance with Section 7 of the Endangered Species Act (ESA) of 1973, as amended, and Chapters 5B-40 and 68A-27 of the Florida Administrative Code (F.A.C.) and in accordance with Protected Species and Habitat chapter of the FDOT PD&E Manual, the federally and state listed species discussed in **Table 10** and **Table 11** were observed or were determined to have the potential to occur within or adjacent to the project study area. An effect determination was made for each of these federally and state listed species based on an analysis of the potential impacts of the proposed project on each species.

The CH within the study area is for the loggerhead sea turtle; proposed impact to loggerhead CH is 0.01 acres from the Preferred Alternative which is approximately 0.009% of the total terrestrial CH along Longboat Key. This impact represents a very small fraction of the designated CH for this species in the project vicinity and does not diminish the overall value of the CH as a whole for the conservation of the loggerhead sea turtle. Therefore, the Preferred Alternative "will not result in destruction or adverse modification" of CH for the loggerhead sea turtle.

Several species which may occur in the project vicinity are not listed as threatened or endangered but receive other legal protection. These include the bald eagle; osprey; bat species including the Brazilian free-tail, evening, big brown, Rafinesque's big-eared, and northern yellow; seagrasses including manateegrass, shoalweed, and turtlegrass; and mangroves including red, white, and black mangroves.

Table 10: Federally Protected Species Impact Determinations

Project Effect Determinations	Federally Listed Species	Listing
	BIRDS	
No Effect	Florida scrub-jay (*Aphelocoma coerulescens)*	T
	Eastern black rail (*Laterallus jamaicensis ssp.*)	T
May Affect, Not Likely to Adversely Affect	Wood stork (*Mycteria americana)*	T
	Piping plover (*Charadrius melodus)*	T
	Rufa red knot (*Calidris canatus rufa)*	T
	REPTILES	
No Effect	American crocodile (*Crocodylus acutus*)	T

Project Effect Determinations	Federally Listed Species	Listing
May Affect, Not Likely to Adversely Affect	Hawksbill sea turtle (*Eretmochelys imbricata)*	E
	Loggerhead sea turtle (*Caretta caretta)*	T
	Green sea turtle (*Chelonia mydas)*	T
	Leatherback sea turtle (*Dermochelys coriacea)*	E
	Kemp's ridley sea turtle (*Lepidochelys kempii)*	E
	Eastern indigo snake (*Drymarchon corais couperi)*	T
	MAMMALS	
No Effect	Tricolored bat (*Perimyotis subflavus*)	P
May Affect, Not Likely to Adversely Affect	West Indian manatee (*Trichechus manatus)*	T
	PLANTS	
No Effect	Pygmy fringe-tree (*Chionanthus pygmaeus)*	E
	LICHENS	
No Effect	Florida perforate cladonia (*Cladonia perforata*)	E
	FISH	
May Affect, Not Likely to Adversely Affect	Gulf sturgeon (*Acipenser oxyrinchus desotoi)*	T
	Smalltooth sawfish (*Pristis pectinata)*	E
	Giant manta ray (*Mobula birostris*)	E

Ranking: E – endangered, T – threatened, P – proposed

Table 11: State Protected Species Impact Determinations

Project Effect Determination	State Listed Species	Listing
	BIRDS	
No Effect Anticipated	Florida sandhill crane (*Grus canadensis pratensis)*	T
No Adverse Effect Anticipated	Black skimmer (*Rynchops niger*)	T
	Snowy plover (*Charadrius nivosus*)	T
	Least tern (*Sternula antillarum*)	T
	Little blue heron (*Egretta caerulea*)	T
	Reddish egret (*Egretta rufescens*)	T
	Tricolored heron (*Egretta tricolor*)	T
	Roseate spoonbill (*Platalea ajaja*)	T
	American oystercatcher (*Haematopus palliates*)	T
	REPTILES	
No Adverse Effect Anticipated	Gopher tortoise (*Gopherus polyphemus*)	T
	PLANTS	
No Effect Anticipated	Sanibel lovegrass (*Eragrostis pectinacea var.*)	E
	Florida loosestrife (*Lythrum flagellare*)	E

Ranking: E – endangered, T – threatened

7.2 WETLANDS AND SURFACE WATERS

Based on the type and location of project impacts, the FDOT has determined that there is no practicable alternative to the proposed wetland impacts due to the need to replace the bridge. In accordance with EO 11990, the FDOT has undertaken all actions to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities. Nonetheless, the FDOT has determined that there is no practicable alternative to construction impacts occurring in wetlands. Any unavoidable impacts to wetlands will be mitigated to achieve no net loss of wetland function. **Table 12** provides a summary of the anticipated impacts.

Table 12: Summary of Wetland, Surface Water, and Seagrass Impacts

System Type	Preferred Alternative Impacts (acres)
Total Wetland Impacts	0.11
Total Impacts to Surface Water (Non-SAV)	1.69
Total Impacts to Seagrasses	0.15
Total Impacts	**1.95**

The proposed project will have no significant short-term or long-term adverse impacts to wetlands because any unavoidable impacts to wetlands will be mitigated to achieve no net loss of wetland function. Furthermore, all wetland impacts will be avoided and minimized to the greatest extent possible and have been limited to those areas which are required to meet minimum safety requirements.

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 Chapter 373, F.S. and 33 U.S.C. §1344. A UMAM analysis (**Appendix P**) was performed to estimate the functional loss due to wetland impacts resulting from the Preferred Alternative. Mitigation for mangrove impacts (approximately 0.05 credits) is expected to be satisfied through the purchase of estuarine forested credits from an approved mitigation bank with available federal credits (e.g., Nature Coast Mitigation Bank). Mitigation for seagrass impacts (approximately 0.04 credits) will be coordinated with the USACE and SWFWMD. While state-credited seagrass banks exist within the drainage basin, federal authorization is not currently available; therefore, federal mitigation is anticipated to be met via permittee-responsible mitigation through District One's Skyway WADs project.

7.3 Essential Fish Habitat

The proposed project is within the GMFMC's area of jurisdiction. EFH within the project area includes Longboat Pass, an inlet connecting estuarine waters within Anna Maria Sound and Sarasota Bay to marine waters of the Gulf of Mexico. Seagrasses and mangroves are present within the project study area, but no shellfish habitat is identified within the study area. All wetland impacts will be mitigated to achieve no net loss of wetland and EFH function. Due to the nature of the project, no populations of any of the fifty-five (55) managed species listed by the GMFMC are expected to be adversely affected by the proposed project. The project is therefore anticipated to have "**minimal**" potential adverse effects on EFH. FDOT will reinitiate EFH consultation with NMFS in the design and permitting phase once details for construction of the bridge are available.

7.4 Implementation Measures

Based on the field and literature reviews outlines in this report, federally and state protected species have the potential to occur within the project area. In order to ensure that the proposed project will not

adversely impact state and federally protected species or habitat, the following measures will be taken during design and construction:

1. Surveys to update locations of active bald eagle and osprey nest sites will be conducted during the design phase, and permits will be acquired if there will be unavoidable impacts during construction. Coordination with USFWS and FWC will take place as necessary.
2. 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. For mitigation of wetland impacts, compensatory mitigation credits sufficient to offset project impacts will be purchased from a USFWS-approved mitigation bank. The specific conservation bank and exact number of credits to be purchased will be specified in the final permitting document.

7.5 COMMITMENTS

To minimize project impacts on protected species to the greatest extent practicable, the following project commitments will be adhered to:

1. FDOT will reinitiate consultation with NMFS upon finalization of the green sea turtle CH if the Preferred Alternative falls within the designated area.
2. The most recent version of USFWS' Standard Protection Measures for the Eastern Indigo Snake will be implemented during construction.
3. The NMFS Vessel Strike Avoidance Measures, NOAA Fisheries SERO will be utilized during construction.
4. The NMFS Protected Species Construction Conditions, NOAA Fisheries SERO will be utilized during construction.
5. All in-water construction activities will be limited to daylight hours only, and no nighttime in-water work will occur, in order to avoid and minimize potential impacts to marine species in the vicinity of the project area, including the smalltooth sawfish and sea turtles.
6. During construction, workers will be required to watch for smalltooth sawfish entering within 50 feet of equipment and will cease construction activities until the fish has departed the construction area of their own volition.
7. Ramp-up pile driving will be used at the start of each day
8. If the tricolored bat is listed by USFWS as threatened or endangered and the project may affect the species, FDOT commits to reinitiating consultation with USFWS to determine appropriate avoidance and minimization measures for protection of the newly listed species.
9. The USFWS and FWC Standard Manatee Construction Conditions for In-Water Work will be utilized during construction.
10. Permanent sea turtle–friendly lighting—such as fully shielded, low-wavelength amber LEDs—will be implemented in accordance with the FWC wildlife lighting guidelines to avoid disorientation of sea turtles. If necessary, temporary construction lighting will be minimized, shielded, and directed downward, using long-wavelength bulbs where practicable.
11. FDOT will provide mitigation for impacts to wood stork SFH within the service area of a USFWS-approved wetland mitigation bank or wood stork conservation bank.

12. If the monarch butterfly is listed by USFWS as threatened or endangered and the project may affect the species, FDOT commits to reinitiating consultation with USFWS to determine appropriate avoidance and minimization measures for protection of the newly listed species.
13. FDOT will reinitiate consultation with USFWS upon finalization of the rufa red knot CH if the Preferred Alternative falls within the designated area.
14. Prior to construction, presence/absence surveys for active breeding sites of IBNB will be conducted during the appropriate season to determine whether avoidance measures are necessary.
15. A minimum buffer of 300 feet will be maintained between project activities and any FWC identified Active or Recent Breeding Sites, Critical Brood-rearing Sites, or Critical Roosting Sites. Buffers will be clearly posted with Regulatory Boundary signs, and personnel will be instructed to remain outside of posted areas.
16. All construction, staging, and site preparation activities within 300 feet of potential shorebird nesting habitat will be avoided during the breeding (February 15 – September 1) unless FWC confirms no active or recent breeding sites are present.
17. Surveys to update locations of seagrass will be conducted during the design phase, and permits will be acquired if there will be unavoidable impacts during construction.
18. FDOT will reinitiate EFH consultation with NMFS in the design and permitting phase once details for construction of the bridge are available.
19. Prior to demolition of Bridge 130057, bat exclusion must be completed to comply with F.A.C. rule 68A-4.001 General Prohibitions; and rule 68A-9.010 Taking Nuisance Wildlife. Per the regulations, exclusion is not permitted during bat maternity season April 15 through August 15. Exclusion devices must be left up for a minimum of four (4) nights and low temperature must be forecasted to remain above 50 degrees Fahrenheit during that time period.

8.0 REFERENCES

Anderson, Patti J & Weaver, Richard E. 2010. Notes on Florida's Endangered and Threatened Plants. Florida Department of Agriculture and Consumer Services.

Cowardin, L. M., et al. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service Publication, Washington D.C.

Delany, M. F. 1996a. Letter. April 16, 1996. On file at U.S. Fish and Wildlife Service, South Florida Ecosystem Office; Vero Beach, Florida.

Florida Association of Environmental Soil Scientists. 2007. Hydric Soils of Florida Handbook, 4th Edition, Gainesville, Florida.

Florida Department of Agriculture and Consumer Services, Division of Plant Industry. (2010). *Notes on Florida's endangered and threatened plants* (5th ed.) Florida Department of Agriculture and Consumer Services. https://www.fdacs.gov/content/download/25089/file/notes-on-floridas-endangered-and-threatened-plants.pdf

Florida Department of Environmental Protection. (2025, July 11). *Florida Wetlands Delineation Manual*. https://floridadep.gov/sites/default/files/delineationmanual.pdf

Florida Department of Transportation. 2024. Aerial Photo Look up System (APLUS). Accessed at:

https://fdotewp1.dot.state.fl.us/AerialPhotoLookUpSystem/

Florida Department of Transportation. Tricolored Bat Consultation Guidance (January 2025).

Florida Department of Transportation. (2023, August 3). *Common Exclusion Techniques: Bat exclusion one-pager*. Retrieved from FDOT website.

Florida Department of Transportation. (2024, July 31). *Project Development and Environment Manual*. Florida Department of Transportation. https://www.fdot.gov/environment/pde-manual/pdeman-current

Florida Fish and Wildlife Conservation Commission. *Cooperative Land Cover, Version 3.8*. Dec. 2024

Florida Fish and Wildlife Conservation Commission. (2017, November). Species Action Plan for the Bald Eagle. Tallahassee, FL: FWC. Retrieved July 9, 2025, from https://myfwc.com/wildlifehabitats/wildlife/bald-eagle/management/

Florida Fish and Wildlife Conservation Commission. (2022). *Florida's official endangered and threatened species list*. Florida Fish and Wildlife Conservation Commission. https://myfwc.com/media/1945/threatened-endangered-species.pdf

Florida Fish and Wildlife Research Institute (FFWRI). 2019. Florida Sea Turtle Nesting Beach Monitoring Program. http://ocean.floridamarine.org/SeaTurtle/nesting/FlexViewer

Florida Legislature. (n.d.). *Florida Statutes, Title XXVIII: Natural Resources; Conservation, Reclamation, and Use, Chapter 373: Water Resources*. Retrieved June 2025, from http://www.leg.state.fl.us/statutes/index.cfm?App_mode=Display_Statute&URL=0300-0399/0373/0373ContentsIndex.html

Florida Natural Areas Inventory. (2025, May). *Florida Conservation Lands*. Florida Managed Areas. https://www.fnai.org/publications/gis-data

Florida Natural Areas Inventory. (2001). *Field guide to the rare animals of Florida*. FNAI. https://www.fnai.org/PDFs/FieldGuides/FieldGuide_RareAnimals_Florida.pdf

Hansen, B. F., & Wunderlin, R. P. (2003). *Guide to the vascular plants of Florida* (2nd ed.). University Press of Florida.

National Marine Fisheries Service. (2006, March 23). *Sea turtle and smalltooth sawfish construction conditions*. National Oceanic and Atmospheric Administration. https://media.fisheries.noaa.gov/dam-migration/sea_turtle_and_smalltooth_sawfish_construction_conditions_3-23-06.pdf

National Oceanic and Atmospheric Administration, National Marine Fisheries Service. (2007, May 1). *Magnuson–Stevens Fishery Conservation and Management Act*. NOAA Fisheries. https://www.fisheries.noaa.gov/resource/document/magnuson-stevens-fishery-conservation-and-management-act

National Oceanic and Atmospheric Administration. (2021). *Preparing essential fish habitat assessments: A guide for federal action agencies* (Version 1). NOAA Fisheries. https://www.fisheries.noaa.gov/resource/document/preparing-essential-fish-habitat-assessments-guide-federal-action-agencies

Sarasota Bay Estuary Program. (n.d.). *Comprehensive Conservation and Management Plan (CCMP) update*. Approved 2021; recognized by EPA March 2022. Retrieved July 10, 2025, from https://sarasotabay.org/wp-content/uploads/SBEP-CCMP-2022-Update.pdf

U.S. Army Corps of Engineers Environmental Laboratory. 1987. U.S. Army Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1. U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.

U.S. Army Corps of Engineers, Jacksonville District. (2013). *Effect determination key for the manatee in Florida* (May 2019 addendum included). U.S. Fish and Wildlife Service.

U.S. Army Corps of Engineers. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coast Plain Region (Version 2.0).

U.S. Department of Agriculture, Natural Resources Conservation Service. (n.d.). Web Soil Survey. Retrieved June 2025, from https://websoilsurvey.nrcs.usda.gov

U.S. Fish and Wildlife Service. 2010, Revised 2013. Eastern Indigo Snake Programmatic Effect Determination Key.

U.S. Fish and Wildlife Service. 2008. Effect Determination Key for the Wood Stork in Central and North Peninsular Florida.

U.S. Fish and Wildlife Service. (n.d.). *Endangered and Threatened Species Search*. Environmental Conservation Online System. Retrieved June 2025, from https://ecos.fws.gov/ecp0/reports/ad-hoc-species-report-input

U.S. Fish and Wildlife Service. (n.d.). *Listed species with spatial current range believed to or known to occur in Florida*. Environmental Conservation Online System. Retrieved June 2025, from https://ecos.fws.gov/ecp/report/species-listings-by-state?stateAbbrev=FL&stateName=Florida

U.S. Fish and Wildlife Service. (2025, July 11). *Official species list*. IPaC

U.S. Fish and Wildlife Service. (n.d.). Species profiles. Retrieved June 2025, from https://www.fws.gov/species/

U.S. Fish and Wildlife Service. (2011). *Standard manatee conditions for in-water work*. U.S. Fish and Wildlife Service.

U.S. Fish and Wildlife Service. (2013). *Standard protection measures for the Eastern indigo snake.* U.S. Fish and Wildlife Service.

U.S. Fish and Wildlife Service. 2004. The Species Conservation Guidelines for the Florida Scrub-jay (*Aphelocoma coerulescens*). South Florida Ecological Services Office, Vero Beach, Florida.

U.S. Fish and Wildlife Service. (n.d.). *Wetlands Mapper*. National Wetlands Inventory. Retrieved June 2025, from https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/

Appendix A: Project Area NRCS Soil Type Descriptions

Soils – Classifications and Descriptions

The following categories represent USDA NRCS soil classifications in the project area based on the NRCS Soil Survey of Manatee County, Florida - 1983.

2: Beaches

Beaches consist of nearly level to sloping, narrow strips of tide-washed sands and shell fragments. They are along the Gulf of Mexico shoreline and on the larger islands and keys. The most extensive areas are on Anna Maria and Longboat Keys. Beaches typically consist of loose, gray to white fine sand mixed with various quantities of broken shells. Beaches range from less than 100 feet to more than 500 feet in width. As much as half of the beach may be flooded daily by high tides, and all of the beach may be flooded by storm tides.

8: Canaveral Fine Sand, 0 to 5 Percent Slopes

Canaveral fine sands are moderately well drained to somewhat poorly drained, nearly level to gently sloping that occur in broad dunelike ridges on the larger islands and keys and in some places on the mainland. The most extensive areas are on Anna Maria and Longboat Keys. The water table is at a depth of 10 to 40 inches for 2 to 6 months out of the year and at a depth of 40 to 60 inches for 4 to 8 months out of the year. Permeability is very rapid throughout.

9: Canaveral Sand, Filled

Canaveral sand is moderately well drained to somewhat poorly drained, nearly level soils consisting of sand and shells that have been dredged or excavated from water areas and then leveled and smoothed, mainly for urban use. Slopes are less than 2 percent. The fill material varies within short distances. It ranges from about 20 to more than 80 inches in thickness. In wet seasons, the water table is at a depth of about 40 to 60 inches. The depth to the water table depends on the thickness of the fill material. Permeability is very rapid, and the available water capacity is very low.

10: Canaveral Sand, Organic Substratum

Canaveral sand, organic substratum is a moderately well drained to somewhat poorly drained, nearly level soil consisting of sand and shells overlying organic material. The sand and shells have been dredged or excavated from water areas and deposited on tidal swamps or marshes and then leveled and smoothed for urban use. Slopes are less than 2 percent. The fill material varies within short distances. It ranges from about 40 to 70 inches in thickness but commonly is 45 inches thick. In wet seasons, the water table is at a depth of about 30 to 60 inches. The depth to the water table depends on the thickness of the fill material. Permeability is very rapid in the fill material and moderately rapid in the organic layer. The available water capacity is very low in the fill material and very high in the organic layer.

21: Estero muck

Estero muck is a very poorly drained, nearly level soil occurring in tidal mangrove swamps with 0-1 percent slopes. The surface layer is typically about 14 inches thick, with the upper 6 inches consisting of black muck underlain by a 17-inch subsurface layer. The subsoil extends to approximately 56 inches. These areas are flooded daily by high tides. Permeability is moderately rapid in the subsoil and rapid in the other soil layers. Available water capacity is high in the muck layer, medium in the lower portion of the subsurface layer and the subsoil, and low to very low in the subsurface layer. Natural vegetation is dominated by black mangrove (*Avicennia germinans*), with associated species such as seashore saltgrass, batis, and oxeye daisy.

Appendix B: Project Area Land Use Classification Descriptions

Land Use and Habitat – Classifications and Descriptions

The following numeric codes represent FDOT-designated Land Use and Cover Classifications in the project area.

UPLANDS, LANDSCAPED OR SIGNIFICANTLY DISTURBED

1300 : Residential, High Density (Six or More Dwelling Units Per Acre)

> Urban residential areas with six or more dwelling units per acre. Typically includes multi-family buildings such as apartments, condominiums, and townhomes in compact urban or suburban settings.

1400 : Commercial and Services

> Areas used for commerce, trade, and services, including retail stores, offices, hotels, restaurants, warehouses, and entertainment facilities. Often found along major roads or in central business districts.

1800 : Recreational

> Public or private lands designated for recreational use, such as parks, golf courses, playgrounds, stadiums, marinas, and other outdoor activity areas.

UPLANDS, LANDSCAPED OR SIGNIFICANTLY DISTURBED

4200 : Upland Hardwood Forests

> Forests dominated by hardwood tree species occurring in upland (non-wetland) settings. Typically includes species such as oak, hickory, and maple, often with a dense canopy and understory.

SURFACE WATERS AND OTHER SURFACE WATERS

5400 : Bays and Estuaries

> Shallow coastal water bodies where freshwater mixes with saltwater, including inlets, estuaries, and bay systems. These areas are biologically productive and support diverse marine life and coastal ecosystems.

WETLANDS

6120 : Mangrove Swamps

Coastal wetlands dominated by mangrove species (e.g., *Rhizophora mangle, Avicennia germinans, Laguncularia racemosa*). These areas are found in tidal zones, offering critical habitat and shoreline protection.

Appendix C: Project Area Wetland and Surface Water Descriptions

Wetland and Surface Water – Classifications and Descriptions

Based on collected field data and GIS database reviews, a total of ten (10) wetland and surface water habitat types were identified within the project study area. Wetland and surface water habitats include bays/estuaries, mangrove communities, shorelines, and seagrass, as described below.

E1UBL (Estuarine, Subtidal, Unconsolidated Bottom, Subtidal)

This designation has been given to Longboat Pass, which connects Sarasota Bay with the Gulf of Mexico. Longboat Pass is considered part of the Sarasota Bay Estuary system, which is an OFW as defined by the State under Chapter 62-302.700, F.A.C. Longboat Pass inlet is a deepwater softbottom habitat flanked by sandy beaches. The depths across this inlet ranged from 3-10 feet around the shorelines and dropped to 10-25 feet deep around the existing bridge structures. The channel is dredged every eight (8) years.

E2US2P (Estuarine, Intertidal, Unconsolidated Shore, Sand, Irregularly Flooded)

This designation has been given to Greer Island on the north tip of Longboat Key. These shorelines consist of fine sand interspersed with shells and rafted debris, as well as dune vegetation including sea oats, beach morning glory, sea grapes, seaside heliotrope, railroad vine, scorpion tail, bushy seaside oxeye, samphire, seablite, and seaside purslane. It contributes to shoreline stability and sand deposition, while also supporting coastal wildlife such as nesting shorebirds and intertidal invertebrates.

E2US2N (Estuarine, Intertidal, Unconsolidated Shore, Regularly Flooded)

This designation has been given to Coquina Beach on the southern tip of Anna Maria Island, just north of the entrance to Coquina Park. This area lies between the open waters of Longboat Pass and the upland portions of Coquina Beach, forming part of the transitional zone between marine and terrestrial environments. The unconsolidated shore consists of natural sandy or muddy substrate that is regularly flooded by tidal waters. This shoreline zone contributes to the larger estuarine system by dampening wave energy, providing habitat for intertidal species, and helping maintain ecological connectivity between Longboat Pass and Sarasota Bay.

E2ABM (Estuarine, Intertidal, Aquatic Bed, Irregularly Exposed)

This designation applies to areas containing submerged aquatic vegetation (SAV) that are only occasionally exposed due to tidal fluctuations. Within the study area, E2ABM habitat has been mapped in two main locations: within Greer Island Lagoon on both the east and west sides of the south end of the bridge, and along the southeast shoreline of Anna Maria Island. These aquatic beds consist of seagrass communities formed by rooted, flowering plants that thrive in shallow, estuarine waters with sufficient light penetration that provide important habitat for marine fauna. The two (2) seagrass species identified within the study area are shoal grass (*Halodule wrightii*) and turtle grass (*Thalassia testudinum*). These communities are sensitive to water quality and hydrologic changes.

E2USN (Estuarine, Intertidal, Unconsolidated Shore, Regularly Flooded)

This designation has been given to a narrow band located east of S.R. 789 and entirely within Longboat Pass. This feature represents an intertidal zone composed of natural, unconsolidated shoreline—such as sand or mudflats—that is regularly flooded by tidal action. The area occurs within the tidal influence of the pass and is positioned between submerged estuarine habitats and the open waters of the channel.

E2SS3N (Estuarine, Intertidal, Scrub-Shrub, Broad-Leaved Evergreen, Regularly Flooded)

This designation has been given to a mixed mangrove community east of S.R. 789 within Leffis Key Preserve. This feature represents an intertidal zone composed of red mangroves (*Rhizophora mangle*) and black mangroves (*Avicennia germinans*). This area lies between Anna Maria Island and the southern end of Anna Maria Sound. This zone contributes to the larger estuarine system by creating a storm buffer, providing habitat for intertidal species, and helping maintain ecological connectivity between Anna Maria Island, Anna Maria Sound, and Sarasota Bay.

M2US2P (Marine, Intertidal, Unconsolidated Shore, Sand, Irregularly Flooded)

This designation has been given to a narrow band of Coquina Beach shoreline west of S.R. 789 and Coquina Beach Park. This feature represents an intertidal, unconsolidated shoreline consisting of natural sandy or muddy substrates that is irregularly flooded according to tidal activity. This shoreline is artificially maintained and contributes to the larger marine system by dampening wave energy and providing habitat for several species of sea turtles and shorebirds.

R5UBH (Riverine, Unknown Perennial, Unconsolidated bottom, Permanently Flooded)

This designation has been given to a small flushing channel within a mangrove community located east of S.R. 789 within Leffis Key Preserve. This feature represents a permanently flooded river-like system with unconsolidated bottom. This zone contributes to the larger estuarine system by creating a storm buffer with the mangroves, providing habitat for intertidal species, and helping maintain ecological connectivity between Sarasota Bay and Anna Maria Sound.

E2FO3N (Estuarine, Intertidal, Forested, Broad-Leaved Evergreen, Regularly Flooded)

This designation has been given to the shoreline located east of S.R. 789 adjacent to the Coquina Beach South Boat Ramp. This feature represents an intertidal zone composed of a red mangroves (*Rhizophora mangle*), black mangroves (*Avicennia germinans*), and Australian pine (*Casuarina equisetifolia*). This area lies between Anna Maria Island and the southern end of Anna Maria Sound. This zone contributes to the larger estuarine system by creating a storm buffer, providing habitat for intertidal species, and helping maintain ecological connectivity between Anna Maria Island, Anna Maria Sound, and Sarasota Bay.

E2SS3P (Estuarine, Intertidal, Scrub-Shrub Wetland, Broad-Leaved Evergreen, Irregularly Flooded)

This designation has been given to the general area beneath and west of S.R. 789 on Greer Island. This feature represents an intertidal zone composed of black mangroves (*Avicennia germinans*), beach naupaka (*Scaevola taccada*), Brazilian pepper (*Schinus terebinthifolia*), Australian pine (*Casuarina equisetifolia*), salt meadow cordgrass (*Syringodium filiforme*), and seagrape (*Coccoloba uvifera*). This area lies between the open waters of the Greer Island Lagoon and the upland dune habitats of Greer Island. This zone contributes to the larger estuarine system by creating a storm buffer, providing habitat for intertidal species, and helping maintain ecological connectivity between Greer Island Lagoon, Longboat Pass, and Sarasota Bay.

Appendix D: IPaC Species Report

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Florida Ecological Services Field Office
777 37th St
Suite D-101
Vero Beach, FL 32960-3559
Phone: (352) 448-9151 Fax: (772) 562-4288
Email Address: fw4flesregs@fws.gov

In Reply Refer To: 07/11/2025 17:32:10 UTC
Project Code: 2025-0120726
Project Name: SR 789 (Longboat Key) PD&E Study

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. **Please include your Project Code, listed at the top of this letter, in all subsequent correspondence regarding this project.** Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of

this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- Marine Mammals
- Coastal Barriers

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

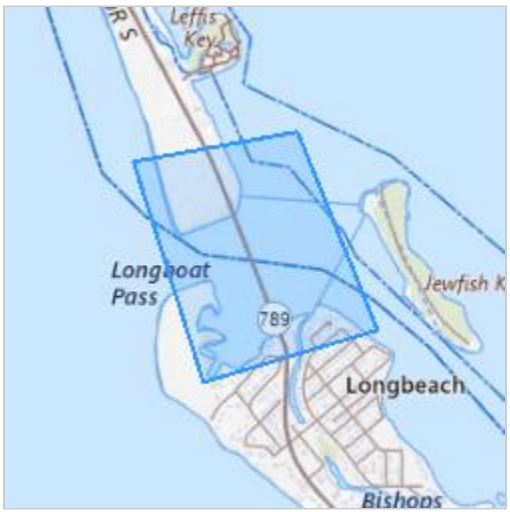
Florida Ecological Services Field Office
777 37th St
Suite D-101
Vero Beach, FL 32960-3559
(352) 448-9151

PROJECT SUMMARY

Project Code: 2025-0120726
Project Name: SR 789 (Longboat Key) PD&E Study
Project Type: Bridge - Replacement
Project Description: This project involves the potential reconstruction and/or rehabilitation of SR 789/Longboat Key Bridge to address structural integrity and operational deficiencies. The limits of the proposed project are from North Shore Road to Coquina Park Entrance in the Town of Longboat Key and City of Bradenton Beach, in Manatee County, Florida. SR 789 is classified as an Urban, Major Collector and consists of a two-lane, undivided typical section between North Shore Road and the entrance to Coquina Park. The main bridge span material is steel-reinforced concrete while the deck type is made of cast-in-place concrete, and the bridge has a movable-bascule span design. The vertical clearance below the bridge is 16.7 feet. The bridge deck width from edge-to-edge is 37.4 feet. The existing SR 789 bridge has one (1) 12-foot travel lane northbound, one (1) 12-foot travel lane southbound, and no shoulders. Adjacent to each travel lane is a small concrete barrier and a 5-foot-wide sidewalk. On the northbound approach to the bridge, there is a 5-foot-wide sidewalk on the west side of SR 789. On the southbound approach to the bridge, there are no sidewalk facilities. Bicycle lanes are present in both directions approaching the bridge structure but are not present on the bridge.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@27.44377285,-82.68747825275207,14z



Counties: Manatee County, Florida

ENDANGERED SPECIES ACT SPECIES

There is a total of 15 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME STATUS

West Indian Manatee *Trichechus manatus* — Threatened

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
This species is also protected by the Marine Mammal Protection Act, and may have additional consultation requirements.
Species profile: https://ecos.fws.gov/ecp/species/4469
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/GI6NFDIYRVCXLCOQIDZRXGTBLI/documents/generated/7281.pdf

BIRDS

NAME STATUS

Eastern Black Rail *Laterallus jamaicensis ssp. jamaicensis* — Threatened

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/10477

Piping Plover *Charadrius melodus* — Threatened

Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered.
There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/6039

Rufa Red Knot *Calidris canutus rufa* — Threatened

There is **proposed** critical habitat for this species. Your location overlaps the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/1864

Wood Stork *Mycteria americana* — Threatened

Population: AL, FL, GA, MS, NC, SC
No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/8477
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/GI6NFDIYRVCXLCOQIDZRXGTBLI/documents/generated/6954.pdf

REPTILES

NAME STATUS

American Crocodile *Crocodylus acutus* — Threatened

Population: U.S.A. (FL)
There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/6604

Eastern Indigo Snake *Drymarchon couperi* — Threatened

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/646

Green Sea Turtle *Chelonia mydas* — Threatened

Population: North Atlantic DPS

NAME	STATUS
There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6199	
Hawksbill Sea Turtle *Eretmochelys imbricata* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3656	Endangered
Kemp's Ridley Sea Turtle *Lepidochelys kempii* There is **proposed** critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/5523	Endangered
Leatherback Sea Turtle *Dermochelys coriacea* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1493	Endangered
Loggerhead Sea Turtle *Caretta caretta* Population: Northwest Atlantic Ocean DPS There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1110	Threatened

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

FLOWERING PLANTS

NAME	STATUS
Pygmy Fringe-tree *Chionanthus pygmaeus* Population: No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1084	Endangered

LICHENS

NAME	STATUS
Florida Perforate Cladonia *Cladonia perforata* Population: No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7516	Endangered

CRITICAL HABITATS

There are 2 critical habitats wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Loggerhead Sea Turtle *Caretta caretta* https://ecos.fws.gov/ecp/species/1110#crithab	Final
Rufa Red Knot *Calidris canutus rufa* https://ecos.fws.gov/ecp/species/1864#crithab	Proposed

COASTAL BARRIERS

Projects within the John H. Chafee Coastal Barrier Resources System (CBRS) may be subject to the restrictions on Federal expenditures and financial assistance and the consultation requirements of the Coastal Barrier Resources Act (CBRA) (16 U.S.C. 3501 et seq.). For more information, please contact the local Ecological Services Field Office or visit the CBRA Consultations website. The CBRA website provides tools such as a flow chart to help determine whether consultation is required and a template to facilitate the consultation process.

SYSTEM UNIT (SU)

Most new Federal expenditures and financial assistance, including Federal flood insurance, are prohibited within System Units. ***Federally-funded projects within System Units require consultation with the Service.*** *Consultation is not required for projects using private, state, or local funds.*

OTHERWISE PROTECTED AREA (OPA)

OPAs are denoted with a "P" at the end of the unit number. The only prohibition within OPAs is on Federal flood insurance. ***CBRA consultation is not required for projects within OPAs.*** *However, agencies providing disaster assistance that is contingent upon a requirement to purchase flood insurance after the fact are advised to disclose the OPA designation and information on the restrictions on Federal flood insurance to the recipient prior to the commitments of funds.*

UNIT	NAME	TYPE	SYSTEM UNIT ESTABLISHMENT DATE	FLOOD INSURANCE PROHIBITION DATE
P23	Longboat Key	SU	10/18/1982	10/1/1983
P23	Longboat Key	SU	11/16/1990	11/16/1990
P23P	Longboat Key	OPA	N/A	11/16/1991

MARINE MAMMALS

Marine mammals are protected under the Marine Mammal Protection Act. Some are also protected under the Endangered Species Act[1] and the Convention on International Trade in Endangered Species of Wild Fauna and Flora[2].

The responsibilities for the protection, conservation, and management of marine mammals are shared by the U.S. Fish and Wildlife Service [responsible for otters, walruses, polar bears, manatees, and dugongs] and NOAA Fisheries[3] [responsible for seals, sea lions, whales, dolphins, and porpoises]. Marine mammals under the responsibility of NOAA Fisheries are **not** shown on this list; for additional information on those species please visit the Marine Mammals page of the NOAA Fisheries website.

The Marine Mammal Protection Act prohibits the take of marine mammals and further coordination may be necessary for project evaluation. Please contact the U.S. Fish and Wildlife Service Field Office shown.

---

1. The Endangered Species Act (ESA) of 1973.
2. The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is a treaty to ensure that international trade in plants and animals does not threaten their survival in the wild.
3. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

NAME

West Indian Manatee *Trichechus manatus*
Species profile: https://ecos.fws.gov/ecp/species/4469

IPAC USER CONTACT INFORMATION

Agency:	Private Entity
Name:	Rodolfo Heredia
Address:	5713 Corporate Way
Address Line 2:	STE 200
City:	West Palm Beach
State:	FL
Zip:	33407
Email	rheredia@scalarinc.net
Phone:	9542431031

Appendix E: FNAI Biodiversity Matrix

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

Florida Natural Areas Inventory

Biodiversity Matrix Query Results

UNOFFICIAL REPORT

Created 6/26/2024

(Contact the FNAI Data Services Coordinator at 850.224.8207 or kbrinegar@fnai.fsu.edu for information on an official Standard Data Report)

NOTE: The Biodiversity Matrix includes only rare species and natural communities tracked by FNAI.

Report for 4 Matrix Units: 21941 , 21942 , 22183 , 22184

Descriptions

DOCUMENTED - There is a documented occurrence in the FNAI database of the species or community within this Matrix Unit.

DOCUMENTED-HISTORIC - There is a documented occurrence in the FNAI database of the species or community within this Matrix Unit; however the occurrence has not been observed/reported within the last twenty years.

LIKELY - The species or community is *known* to occur in this vicinity, and is considered likely within this Matrix Unit because:

1. documented occurrence overlaps this and adjacent Matrix Units, but the documentation isn't precise enough to indicate which of those Units the species or community is actually located in; *or*
2. there is a documented occurrence in the vicinity and there is suitable habitat for that species or community within this Matrix Unit.

POTENTIAL - This Matrix Unit lies within the known or predicted range of the species or community based on expert knowledge and environmental variables such as climate, soils, topography, and landcover.

Matrix Unit ID: 21941

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

8 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Beach dune	G3	S2	N	N
Caretta caretta Loggerhead Sea Turtle	G3	S3	T	FT
Charadrius melodus Piping Plover	G3	S2	T	FT
Charadrius nivosus Snowy Plover	G3	S1	N	ST
Chelonia mydas Green Sea Turtle	G3	S2S3	T	FT

Rynchops niger Black Skimmer	G5	S3	N	ST
Sternula antillarum Least Tern	G4	S3	N	ST
Thalasseus sandvicensis Sandwich Tern	G5	S2	N	N

Matrix Unit ID: 21942

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

5 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Caretta caretta Loggerhead Sea Turtle	G3	S3	T	FT
Charadrius melodus Piping Plover	G3	S2	T	FT
Chelonia mydas Green Sea Turtle	G3	S2S3	T	FT
Mycteria americana Wood Stork	G4	S2	T	FT
Thalasseus sandvicensis Sandwich Tern	G5	S2	N	N

Matrix Unit ID: 22183

4 **Documented** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Caretta caretta Loggerhead Sea Turtle	G3	S3	T	FT
Chelonia mydas Green Sea Turtle	G3	S2S3	T	FT
Coastal interdunal swale	G3	S2	N	N
Lythrum flagellare lowland loosestrife	G3	S3	N	E

0 **Documented-Historic** Elements Found

9 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Beach dune	G3	S2	N	N
Charadrius melodus Piping Plover	G3	S2	T	FT
Charadrius nivosus Snowy Plover	G3	S1	N	ST
Helianthus debilis ssp. vestitus hairy beach sunflower	G5T2	S2	N	N
Mesic flatwoods	G4	S4	N	N
Mycteria americana Wood Stork	G4	S2	T	FT
Rynchops niger Black Skimmer	G5	S3	N	ST
Sternula antillarum Least Tern	G4	S3	N	ST
Thalasseus sandvicensis Sandwich Tern	G5	S2	N	N

Matrix Unit ID: 22184

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

5 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Caretta caretta Loggerhead Sea Turtle	G3	S3	T	FT
Charadrius melodus Piping Plover	G3	S2	T	FT
Chelonia mydas Green Sea Turtle	G3	S2S3	T	FT
Mycteria americana Wood Stork	G4	S2	T	FT
Thalasseus sandvicensis Sandwich Tern	G5	S2	N	N

Matrix Unit IDs: 21941 , 21942 , 22183 , 22184

18 **Potential** Elements Common to Any of the 4 Matrix Units

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Acipenser oxyrinchus desotoi Gulf Sturgeon	G3T2T3	S2?	T	FT
Ardea herodias occidentalis Great White Heron	G5T2	S2	N	N
Bird Rookery	G5	SNRB	N	N
Dermochelys coriacea Leatherback Sea Turtle	G2	S2	E	FE
Egretta caerulea Little Blue Heron	G5	S4	N	ST
Egretta thula Snowy Egret	G5	S3	N	N
Egretta tricolor Tricolored Heron	G5	S4	N	ST
Eragrostis pectinacea var. tracyi Sanibel lovegrass	G5T1	S1	N	E
Eretmochelys imbricata Hawksbill Sea Turtle	G3	S1	E	FE
Eudocimus albus White Ibis	G5	S4	N	N
Gopherus polyphemus Gopher Tortoise	G3	S3	C	ST
Harrisia aboriginum aboriginal prickly apple	G1	S1	E	E
Helianthus debilis ssp. vestitus hairy beach sunflower	G5T2	S2	N	N
Lepidochelys kempii Kemp's Ridley Sea Turtle	G1	S1	E	FE
Nycticorax nycticorax Black-crowned Night-heron	G5	S3	N	N
Rallus longirostris scottii Florida Clapper Rail	G5T3?	S3?	N	N
Setophaga discolor paludicola Florida Prairie Warbler	G5T3	S3	N	N
Trichechus manatus latirostris Florida Manatee	G2G3T2	S2S3	T	N

Disclaimer

The data maintained by the Florida Natural Areas Inventory represent the single most comprehensive source of information available on the locations of rare species and other significant ecological resources statewide. 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. FNAI shall not be held liable for the accuracy and completeness of these data, or opinions or conclusions drawn from these data. FNAI is not inviting reliance on these data. 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.

Unofficial Report

These results are considered unofficial. FNAI offers a Standard Data Request option for those needing certifiable data.

Appendix F: NMFS SERO Protected Species Construction Conditions

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

Appendix G: NMFS SERO Vessel Strike Avoidance Measures

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

Appendix H: USFWS Standard Protection Measures for the Eastern Indigo Snake

STANDARD PROTECTION MEASURES FOR THE EASTERN INDIGO SNAKE

U.S. Fish and Wildlife Service

May 2024

The Standard Protection Measures for the Eastern Indigo Snake (Plan) below has been developed by the U.S. Fish and Wildlife Service (USFWS) in Florida and Georgia for use by project proponents and their construction personnel help minimize adverse impacts to eastern indigo snakes. However, implementation of this Plan does not replace any state of federal consultation or regulatory requirements. At least 30 days prior to any land disturbance activities, the project proponent shall notify the appropriate USFWS Field Office (see Field Office contact information) via e-mail that the Plan will be implemented as described below.

As long as the signatory of the e-mail certifies compliance with the below Plan (including use of the approved poster and pamphlet (USFWS Eastern Indigo Snake Conservation webpage), no further written confirmation or approval from the USFWS is needed regarding use of this Plan as a component of the project.

If the project proponent decides to use an eastern indigo snake protection/education plan other than the approved Plan below, written confirmation or approval from the USFWS that the plan is adequate must be obtained. The project proponent shall submit their unique plan for review and approval. The USFWS will respond via e-mail, typically within 30 days of receiving the plan, either concurring that the plan is adequate or requesting additional information. A concurrence e-mail from the appropriate USFWS Field Office will fulfill approval requirements.

STANDARD PROTECTION MEASURES

BEFORE AND DURING CONSTRUCTION ACTIVITIES:

- All Project personnel shall be notified about the potential presence and appearance of the federally protected eastern indigo snake (*Drymarchon couperi*).
- All personnel shall be advised that there are civil and criminal penalties for harassing, harming, pursuing, hunting, shooting, wounding, killing, capturing, or collecting the species, in knowing violation of the Endangered Species Act of 1973.
- The project proponent or designated agent will post educational posters in the construction office and throughout the construction site. The posters must be clearly visible to all construction staff and shall be posted in a conspicuous location in the

Project field office until such time that Project construction has been completed and time charges have stopped.

- Prior to the onset of construction activities, the project proponent or designated agent will conduct a meeting with all construction staff (annually for multi-year projects) to discuss identification of the snake, its protected status, what to do if a snake is observed within the project area, and applicable penalties that may be imposed if state and/or federal regulations are violated. An educational pamphlet including color photographs of the snake will be given to each staff member in attendance and additional copies will be provided to the construction superintendent to make available in the onsite construction office. Photos of eastern indigo snakes may be accessed on USFWS, Florida Fish and Wildlife Conservation Commission and/or Georgia Department of Natural Resources websites.
- Each day, prior to the commencement of maintenance or construction activities, the Contractor shall perform a thorough inspection for the species of all worksite equipment.
- If an eastern indigo snake (alive, dead or skin shed) is observed on the project site during construction activities, all such activities are to cease until the established procedures are implemented according to the Plan, which includes notification of the appropriate USFWS Office. The contact information for the USFWS is provided below and on the referenced posters and pamphlets.
- During initial site clearing activities, an onsite observer is recommended to determine whether habitat conditions suggest a reasonable probability of an eastern indigo snake sighting (example: discovery of snake sheds, tracks, lots of refugia and cavities present in the area of clearing activities, and presence of gopher tortoises and burrows).
- Periodically during construction activities, the project area should be visited to observe the condition of the posters and Plan materials and replace them as needed. Construction personnel should be reminded of the instructions (above) as to what is expected if any eastern indigo snakes are seen.
- For erosion control use biodegradable, 100% natural fiber, net-free rolled erosion control blankets to avoid wildlife entanglement.

POST CONSTRUCTION ACTIVITIES:

Whether or not eastern indigo snakes are observed during construction activities, a monitoring report should be submitted to the appropriate USFWS Field Office within 60 days of project completion (See USFWS Field Office Contact Information).

USFWS FIELD OFFICE CONTACT INFORMATION

Georgia Field Office: Phone: (706) 613-9493, email: gaes_assistance@fws.gov
Florida Field Office: Phone: (352) 448-9151, email: fw4flesregs@fws.gov

POSTER & PAMPHLET INFORMATION

Posters with the following information shall be placed at strategic locations on the construction site and along any proposed access roads (final posters for Plan compliance are available on our website in English and Spanish and should be printed on 11 x 17in or larger paper and laminated (USFWS Eastern Indigo Snake Conservation webpage). Pamphlets are also available on our webpage and should be printed on 8.5 x 11in paper and folded, and available and distributed to staff working on the site.

POSTER CONTENT (ENGLISH):

ATTENTION

Federally-Threatened Eastern Indigo Snakes may be present on this site!

Killing, harming, or harassing eastern indigo snakes is strictly prohibited and punishable under State and Federal Law.

IF YOU SEE A LIVE EASTERN INDIGO SNAKE ON THE SITE:

• Stop land disturbing activities and allow the snake time to move away from the site without interference. Do NOT attempt to touch or handle the snake.

• Take photographs of the snake, if possible, for identification and documentation purposes.

• Immediately notify supervisor/agent, and a U.S. Fish and Wildlife Service (USFWS) Ecological Services Field Office, with the location information and condition of the snake.

• If the snake is located near clearing or construction activities that will cause harm to the snake, the activities must pause until a representative of the USFWS returns the call (within one day) with further guidance.

IF YOU SEE A DEAD EASTERN INDIGO SNAKE ON THE SITE:

• Stop land disturbing activities and immediately notify supervisor/applicant, and a USFWS Ecological Services Field Office, with the location information and condition of the snake.

• Take photographs of the snake, if possible, for identification and documentation purposes.

• Thoroughly soak the dead snake in water and then freeze the specimen. The appropriate wildlife agency will retrieve the dead snake.

DESCRIPTION: The eastern indigo snake is one of the largest non-venomous snakes in North America, reaching up to 8 ft long. Named for the glossy, blue-black scales above and slate blue below, they often have orange to reddish color (cream color in some cases)

in the throat area. They are not typically aggressive.

SIMILAR SPECIES: The black racer resembles the eastern indigo snake. However, black racers have a white or cream chin, and thinner bodies.

LIFE HISTORY: Eastern indigo snakes live in a variety of terrestrial habitat types. Although they prefer uplands, they also use wetlands and agricultural areas. They will shelter inside gopher tortoise burrows, other animal burrows, stumps, roots, and debris piles. Females may lay from 4 to 12 white eggs as early as April through June, with young hatching in late July through October.

PROTECTED STATUS: The eastern indigo snake is protected by the USFWS, Florida Fish and Wildlife Conservation Commission, and Georgia Department of Natural Resources. Any attempt to kill, harm, harass, pursue, hunt, shoot, wound, trap, capture, collect, or engage eastern indigo snakes is prohibited by the U.S. Endangered Species Act. Penalties include a maximum fine of $25,000 for civil violations and up to $50,000 and/or imprisonment for criminal offenses. Only authorized individuals with a permit (or an Incidental Take Statement associated with a USFWS Biological Opinion) may handle an eastern indigo snake.

Please contact your nearest USFWS Ecological Services Field Office if a live or dead eastern indigo snake is encountered:

Florida Office: (352) 448-9151

Georgia Office: (706) 613-9493

POSTER CONTENT (SPANISH):

ATENCIÓN

¡Especie amenazada, la culebra Índigo del Este, puede ocupar el área!

Matar, herir o hostigar culebras Índigo del Este es estrictamente prohibido bajo la Ley Federal.

SI VES UNA CULEBRA ÍNDIGO DEL ESTE O UNA CULEBRA NEGRA VIVA EN EL ÁREA:

• Pare excavación y permite el movimiento de la culebra fuera del área sin interferir. NO atentes tocar o recoger la culebra.

• Fotografié la culebra si es posible para identificación y documentación.

• Notifique supervisor/agente, y la Oficina de Campo de Servicios Ecológicos del Servicio Federal de Pesca y Vida Silvestre (USFWS) apropiada con información acerca del sitio y condición de la culebra.

• Si la culebra está cerca de un área de construcción que le pueda causar daño, las actividades deben parar hasta un representante del USFWS regrese la llamada (dentro de un día) con más orientación.

SI VES UNA CULEBRA ÍNDIGO DEL ESTE MUERTA EN EL ÁREA:

• Pare excavación. Notifique supervisor/aplicante, y la Oficina de Campo de Servicios Ecológicos apropiada con información acerca del sitio y condición de la culebra.

• Fotografié la culebra si es posible para identificación y documentación.

• Emerge completamente la culebra en agua y congele la especie hasta que personal apropiado de la agencia de vida silvestre la recoja.

DESCRIPCIÓN. La culebra Índigo del Este es una de las serpientes sin veneno más grande en Norte América, alcanzando hasta 8 pies de largo. Su nombre proviene del color azul-negro brilloso de sus escamas, pero pueden tener un color anaranjado-rojizo (color crema en algunos casos) en su mandíbula inferior. No tienden a ser agresivas.

SERPIENTES PARECIDAS. La corredora negra, que es de color negro sólido, es la única otra serpiente que se asemeja a la Índigo del Este. La corredora negra se diferencia por una mandíbula inferior color blanca o crema y un cuerpo más delgado.

HÁBITATS Y ECOLOGÍA. La culebra Índigo del Este vive en una variedad de hábitats, incluyendo tierras secas, humedales, y áreas de agricultura. Ellas buscan refugio en agujeros o huecos de tierra, en especial madrigueras de tortugas de tierra. Las hembras ponen 4 hasta 12 huevos blancos entre abril y junio, y la cría emergen entre julio y octubre.

PROTECCIÓN LEGAL. La culebra Índigo del Este es clasificada como especie amenazada por el USFWS, la Comisión de Conservación de Pesca y Vida Silvestre de Florida y el Departamento de Recursos Naturales de Georgia. Intento de matar, hostigar, herir, lastimar, perseguir, cazar, disparar, capturar, colectar o conducta parecida hacia las culebras Índigo del Este es prohibido por la Ley Federal de Especies en Peligro de Extinción. Penalidades incluyen un máximo de $25,000 por violaciones civiles y $50,000 y/o encarcelamiento por actos criminales. Solos individuales autorizados con un permiso o Determinación de toma incidental (Incidental Take Statement) asociado con una Opinión Biológico del USFWS pueden recoger una Índigo del Este.

Por favor de contactar tu Oficina de Campo de Servicios Ecológicos más cercana si encuentras una culebra Índigo del Este viva o muerta:

Oficina de Florida: (352) 448-9151

Oficina de Georgia: (706) 613-9493

Appendix I: USACE Effect Determination Key for the Eastern Indigo Snake

United States Department of the Interior

U. S. FISH AND WILDLIFE SERVICE

7915 BAYMEADOWS WAY, SUITE 200
JACKSONVILLE, FLORIDA 32256-7517

IN REPLY REFER TO:
August 13, 2013

Colonel Alan M. Dodd, District Engineer
Department of the Army
Jacksonville District Corps of Engineers
P.O Box 4970
Jacksonville, Florida 32232-0019
(Attn: Mr. David S. Hobbie)

RE: Update Addendum to USFWS Concurrence Letter to U.S. Army Corps of Engineers Regarding Use of the Attached Eastern Indigo Snake Programmatic Effect Determination Key

Dear Colonel Dodd:

This letter is to amend the January 25, 2010, letter to the U.S. Army Corps of Engineers regarding the use of the attached eastern indigo snake programmatic effect determination key (key). It supersedes the update addendum issued January 5, 2012.

We have evaluated the original programmatic concurrence and find it suitable and appropriate to extend its use to the remainder of Florida covered by the Panama City Ecological Services Office.

On Page 2

The following replaces the last paragraph above the signatures:

"Thank you for your continued cooperation in the effort to conserve fish and wildlife resources. Any questions or comments should be directed to Annie Dziergowski (North Florida ESO) at 904-731-3089, Harold Mitchell (Panama City ESO) at 850-769-0552, or Victoria Foster (South Florida ESO) at 772-469-4269."

On Page 3

The following replaces both paragraphs under "Scope of the key":

"This key should be used only in the review of permit applications for effects determinations for the eastern indigo snake within the State of Florida, and not for other listed species or for aquatic resources such as Essential Fish Habitat (EFH)."

On Page 4

The following replaces the first paragraph under Conservation Measures:

"The Service routinely concurs with the Corps' "not likely to adversely affect" (NLAA) determination for individual project effects to the eastern indigo snake when assurances are given that

our *Standard Protection Measures for the Eastern Indigo Snake* (Service 2013) located at: http://www.fws.gov/northflorida/IndigoSnakes/indigo-snakes.htm will be used during project site preparation and project construction. There is no designated critical habitat for the eastern indigo snake."

On Page 4 and Page 5 (Couplet D)

The following replaces D. under Conservation Measures:

D. The project will impact less than 25 acres of xeric habitat (scrub, sandhill, or scrubby flatwoods) or less than 25 active and inactive gopher tortoise burrows.....*go to* E

The project will impact more than 25 acres of xeric habitat (scrub, sandhill, or scrubby flatwoods) or more than 25 active and inactive gopher tortoise burrows and consultation with the Service is requested[2].....*"may affect"*

On Page 5

The following replaces footnote #3:

"[3]If excavating potentially occupied burrows, active or inactive, individuals must first obtain state authorization via a FWC Authorized Gopher Tortoise Agent permit. The excavation method selected should also minimize the potential for injury of an indigo snake. Applicants should follow the excavation guidance provided within the most current Gopher Tortoise Permitting Guidelines found at http://myfwc.com/gophertortoise ."

Thank you for making these amendments concerning the Eastern Indigo Snake Key. If you have any questions, please contact Jodie Smithem of my staff at the address on the letterhead, by email at jodie_smithem@fws.gov, or by calling (904)731-3134.

Sincerely,

Dawn Jennings
Acting Field Supervisor

cc:
Panama City Ecological Services Field Office, Panama City, FL
South Florida Ecological Services Field Office, Vero Beach, FL

United States Department of the Interior

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

January 25, 2010

David S. Hobbie
Chief, Regulatory Division
U.S. Army Corps of Engineers
Post Office Box 4970
Jacksonville, Florida 32232-0019

Service Federal Activity Code: 41420-2009-FA-0642
Service Consultation Code: 41420-2009-I-0467
41910-2010-I-0045
Subject: North and South Florida Ecological Services Field Offices Programmatic Concurrence for Use of Original Eastern Indigo Snake Key(s) Until Further Notice

Dear Mr. Hobbie:

The U.S. Fish and Wildlife Service's (Service) South and North Florida Ecological Services Field Offices (FO), through consultation with the U.S. Army Corps of Engineers Jacksonville District (Corps), propose revision to both Programmatic concurrence letters/keys for the federally threatened Eastern Indigo Snake (*Drymarchon corais couperi*), (indigo snake), and now provide one key for both FO's. The original programmatic key was issued by the South Florida FO on November 9, 2007. The North Florida FO issued a revised version of the original key on September 18, 2008. Both keys were similar in content, but reflected differences in geographic work areas between the two Field Offices. The enclosed key satisfies each office's responsibilities under the Endangered Species Act of 1973, as amended (Act) (87 Stat. 884; 16 U.S.C.1531 *et seq.*).

Footnote number 3 in the original keys indicated "A member of the excavation team should be authorized for Incidental Take during excavation through either a section 10(a)(1)(A) permit issued by the Service or an incidental take permit issued by the Florida Fish and Wildlife Conservation Commission (FWC)." We have removed this reference to a Service issued Section 10(a)(1)(A) permit, as one is not necessary for this activity. We also referenced the FWC's revised April 2009 Gopher Tortoise Permitting Guidelines with a link to their website for updated excavation guidance, and have provided a website link to our Standard Protection Measures. All other conditions and criteria apply.

We believe the implementation of the attached key achieves our mutual goal for all users to make consistent effect determinations regarding this species. The use of this key for review of projects

located in all referenced counties in our respective geographic work areas leads the Service to concur with the Corps' determination of "may affect, not likely to adversely affect" (MANLAA) for the Eastern indigo snake. The biological rationale for the determinations is contained within the referenced documents and is submitted in accordance with section 7 of the Act.

Should circumstances change or new information become available regarding the eastern indigo snake or implementation of the key, the determinations may be reconsidered as deemed necessary.

Thank you for your continued cooperation in the effort to conserve fish and wildlife resources. Any questions or comments should be directed to either Allen Webb (Vero Beach) at 772-562-3909, extension 246, or Jay Herrington (Jacksonville) at 904-731-3326.

Sincerely,

Paul Souza
Field Supervisor
South Florida Ecological Services Office

David L. Hankla
Field Supervisor
North Florida Ecological Services Office

Enclosure

cc: electronic only
FWC, Tallahassee, Florida (Dr. Elsa Haubold)
Service, Jacksonville, Florida (Jay Herrington)
Service, Vero Beach, Florida (Sandra Sneckenberger)

Eastern Indigo Snake Programmatic Effect Determination Key

Scope of the key

This key should be used only in the review of permit applications for effects determinations within the North and South Florida Ecological Services Field Offices Geographic Areas of Responsibility (GAR), and not for other listed species or for aquatic resources such as Essential Fish Habitat (EFH). Counties within the **North** Florida GAR include Alachua, Baker, Bradford, Brevard, Citrus, Clay, Columbia, Dixie, Duval, Flagler, Gilchrist, Hamilton, Hernando, Hillsborough, Lafayette, Lake, Levy, Madison, Manatee, Marion, Nassau, Orange, Pasco, Pinellas, Putnam, St. Johns, Seminole, Sumter, Suwannee, Taylor, Union, and Volusia.

Counties in the **South** Florida GAR include Broward, Charlotte, Collier, De Soto, Glades, Hardee, Hendry, Highlands, Lee, Indian River, Martin, Miami-Dade, Monroe, Okeechobee, Osceola, Palm Beach, Polk, Sarasota, St. Lucie.

Habitat

Over most of its range, the eastern indigo snake frequents several habitat types, including pine flatwoods, scrubby flatwoods, high pine, dry prairie, tropical hardwood hammocks, edges of freshwater marshes, agricultural fields, coastal dunes, and human-altered habitats (Service 1999). Eastern indigo snakes appear to need a mosaic of habitats to complete their life cycle. Wherever the eastern indigo snake occurs in xeric habitats, it is closely associated with the gopher tortoise *(Gopherus polyphemus),* the burrows of which provide shelter from winter cold and summer desiccation (Speake et al. 1978; Layne and Steiner 1996). Interspersion of tortoise-inhabited uplands and wetlands improves habitat quality for this species (Landers and Speake 1980; Auffenberg and Franz 1982).

In south Florida, agricultural sites, such as sugar cane fields, created in former wetland areas are occupied by eastern indigo snakes (Enge pers. comm. 2007). Formerly, indigo snakes would have only occupied higher elevation sites within the wetlands. The introduction of agriculture and its associated canal systems has resulted in an increase in rodents and other species of snakes that are prey for eastern indigo snakes. The result is that indigos occur at higher densities in these areas than they did historically.

Even though thermal stress may not be a limiting factor throughout the year in south Florida, indigo snakes still seek and use underground refugia. On the sandy central ridge of central Florida, eastern indigos use gopher tortoise burrows more (62 percent) than other underground refugia (Layne and Steiner 1996). Other underground refugia used include armadillo (*Dasypus novemcinctus*) burrows near citrus groves, cotton rat (*Sigmodon hispidus*) burrows, and land crab (*Cardisoma guanhumi*) burrows in coastal areas (Service 2006). Natural ground holes, hollows at the base of trees or shrubs, ground litter, trash piles, and crevices of rock-lined ditch walls are also used (Layne and Steiner 1996). These refugia are used most frequently where tortoise burrows are not available, principally in low-lying areas off the central and coastal ridges. In extreme south Florida (the Everglades and Florida Keys), indigo snakes are found in tropical

hardwood hammocks, pine rocklands, freshwater marshes, abandoned agricultural land, coastal prairie, mangrove swamps, and human-altered habitats (Steiner et al. 1983). It is suspected that they prefer hammocks and pine forests, because most observations occur in these habitats disproportionately to their presence in the landscape (Steiner et al. 1983). Hammocks may be important breeding areas as juveniles are typically found there. The eastern indigo snake is a snake-eater so the presence of other snake species may be a good indicator of habitat quality.

Conservation Measures

The Service routinely concurs with the Corps' "not likely to adversely affect" (NLAA) determination for individual project effects to the eastern indigo snake when assurances are given that our *Standard Protection Measures for the Eastern Indigo Snake* (Service 2004) located at: http://www.fws.gov/northflorida/IndigoSnakes/indigo-snakes will be used during project site preparation and project construction. There is no designated critical habitat for the eastern indigo snake.

In an effort to reduce correspondence in effect determinations and responses, the Service is providing an Eastern Indigo Snake Effect Determination Key, similar in utility to the West Indian Manatee Effect Determination Key and the Wood Stork Effect Determination Keys presently being utilized by the Corps. 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 and no additional correspondence will be necessary[1]. This key is subject to revisitation as the Corps and Service deem necessary.

A. Project is not located in open water or salt marsh.....*go to* B

Project is located solely in open water or salt marsh.....*"no effect"*

B. Permit will be conditioned for use of the Service's *Standard Protection Measures For The Eastern Indigo Snake* during site preparation and project construction.....*go to* C

Permit will not be conditioned as above for the eastern indigo snake, or it is not known whether an applicant intends to use these measures and consultation with the Service is requested[2] .....*"may affect"*

C. There are gopher tortoise burrows, holes, cavities, or other refugia where a snake could be buried or trapped and injured during project activities .....*go to* D

There are no gopher tortoise burrows, holes, cavities, or other refugia where a snake could be buried or trapped and injured during project activities .....*"NLAA"*

D. The project will impact less than 25 acres of xeric habitat supporting less than 25 active and inactive gopher tortoise burrows.....*go to* E

The project will impact more than 25 acres of xeric habitat or more than 25 active and inactive gopher tortoise burrows and consultation with the Service is requested[2]..... *"may affect"*

E. Any permit will be conditioned such that all gopher tortoise burrows, active or inactive, will be evacuated prior to site manipulation in the vicinity of the burrow[3]. If an indigo snake is encountered, the snake must be allowed to vacate the area prior to additional site manipulation in the vicinity. Any permit will also be conditioned such that holes, cavities, and snake refugia other than gopher tortoise burrows will be inspected each morning before planned site manipulation of a particular area, and, if occupied by an indigo snake, no work will commence until the snake has vacated the vicinity of proposed work..... *"NLAA"*

Permit will not be conditioned as outlined above and consultation with the Service is requested[2] ..... *"may affect"*

---

[1]With an outcome of "no effect" or "NLAA" as outlined in this key, the requirements of section 7 of the Act are fulfilled for the eastern indigo snake and no further action is required.

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

[3] If burrow excavation is utilized, it should be performed by experienced personnel. The method used should minimize the potential for injury of an indigo snake. Applicants should follow the excavation guidance provided within the Florida Fish and Wildlife Conservation Commission's revised April 2009 Gopher Tortoise Permitting Guidelines located at **http://myfwc.com/License/Permits_ProtectedWildlife.htm#gophertortoise.** A member of the excavation team should be authorized for Incidental Take during excavation through an incidental take permit issued by the Florida Fish and Wildlife Conservation Commission.

Appendix J: USACE Effect Determination Key for the Wood Stork in Central Florida

THE CORPS OF ENGINEERS, JACKSONVILLE DISTRICT, U. S. FISH AND WILDLIFE SERVICE, JACKSONVILLE ECOLOGICAL SERVICES FIELD OFFICE AND STATE OF FLORIDA EFFECT DETERMINATION KEY FOR THE WOOD STORK IN CENTRAL AND NORTH PENINSULAR FLORIDA
September 2008

Purpose and Background

The purpose of this document is to provide a tool to improve the timing and consistency of review of Federal and State permit applications and Federal civil works projects, for potential effects of these projects on the endangered wood stork (*Mycteria americana*) within the Jacksonville Ecological Services Field Office (JAFL) geographic area of responsibility (GAR see below). The key is designed primarily for Corps Project Managers in the Regulatory and Planning Divisions and the Florida Department of Environmental Protection or its authorized designee, or Water Management Districts. The tool consists of the following dichotomous key and reference material. The key is intended to be used to evaluate permit applications and Corps' civil works projects for impacts potentially affecting wood storks or their wetland habitats. At certain steps in the key, the user is referred to graphics depicting known wood stork nesting colonies and their core foraging areas (CFA), footnotes, and other support documents. The graphics and supporting documents may be downloaded from the Corps' web page at http://www.saj.usace.army.mil/permit or at the JAFL web site at http://www.fws.gov/northflorida/WoodStorks. We intend to utilize the most recent information for both the graphics and supporting information; so should this information be updated, we will modify it accordingly. **Note: This information is provided as an aid to project review and analysis, and is not intended to substitute for a comprehensive biological assessment of potential project impacts. Such assessments are site-specific and usually generated by the project applicant or, in the case of civil works projects, by the Corps or project co-sponsor.**

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

Scope of the key

This key should only be used in the review of permit applications for effects determinations on wood storks within the JAFL GAR, and not for other listed species. Counties within the JAFL GAR include Alachua, Baker, Bradford, Brevard, Citrus, Clay, Columbia, Dixie, Duval, Flagler, Gilchrist, Hamilton, Hernando, Hillsborough, Lafayette, Lake, Levy, Madison, Manatee, Marion, Nassau, Orange, Pasco, Pinellas, Putnam, St. Johns, Seminole, Sumter, Suwannee, Taylor, Union, and Volusia.

The final effect determination will be based on project location and description, the potential effects to wood storks, and any measures (for example project components, special permit conditions) that avoid or minimize direct, indirect, and/or cumulative

impacts to wood storks and/or suitable wood stork foraging habitat. Projects that key to a "no effect" determination do not require additional consultation or coordination with the JAFL. Projects that key to "NLAA" also do not need further consultation; however, the JAFL staff will assist the Corps if requested, to answer questions regarding the appropriateness of mitigation options. 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 should request the JAFL to initiate formal consultation on the Wood stork.

Summary of General Wood Stork Nesting and Foraging Habitat Information

The wood stork is primarily associated with freshwater and estuarine habitats that are used for nesting, roosting, and foraging. Wood storks typically nest colonially 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; Rodgers et al. 1996). Successful breeding sites are those that have limited human disturbance and low exposure to land based predators. Nesting sites 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.

In addition to limited human disturbance and land-based predation, successful nesting depends on the availability of suitable foraging habitat. Such habitat generally results from a combination 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 that tends to 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 opportunities, a variety of wetland habitats exhibiting short and long hydroperiods should be present. In terms of wood stork foraging, the Service (1999) describes a short hydroperiod as one where a wetland fluctuates between wet and dry in 1 to 5-month cycles, and a long hydroperiod where the wet period is greater than five consecutive months. Wood storks during the wet season generally feed in the shallow water of 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).

Because of their specialized feeding behavior, wood storks forage most effectively in shallow-water areas with highly concentrated prey. Typical foraging sites for the wood stork include freshwater marshes, depressions in cypress heads, swamp sloughs, managed impoundments, stock ponds, shallow-seasonally flooded roadside or agricultural ditches, and narrow tidal creeks or shallow tidal pools. Good foraging conditions are characterized by water that is relatively calm, open, and having water depths between 5 and 15 inches (5 and 38 cm). Preferred foraging habitat includes wetlands exhibiting a mosaic of submerged and/or emergent aquatic vegetation, and shallow, open-water areas subject to hydrologic

regimes ranging from dry to wet. The vegetative 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 daily or seasonal low water periods.

WOOD STORK KEY

Although designed primarily for use by Corps Project Managers in the Regulatory and Planning Divisions, and State Regulatory agencies or their designees, project permit applicants and co-sponsors of civil works projects may find this key and its supporting documents useful in identifying potential project impacts to wood storks, and planning how best to avoid, minimize, or compensate for any identified adverse effects.

A. Project within 2,500 feet of an active colony site[1]……*May affect*

Project more than 2,500 feet from a colony site……go to B

B. Project does not affect suitable foraging habitat[2] (SFH)……*no effect*

Project impacts SFH[2]……go to C

C. Project impacts to SFH are less than or equal to 0.5 acre[3]…….....*NLAA*[4]

Project impacts to SFH are greater than or equal to 0.5 acre..……..go to D

D. Project impacts to SFH not within a Core Foraging Area[5] (see attached map) of a colony site, and no wood storks have been documented foraging on site…….....NLAA[4]

Project impacts to SFH are within the CFA of a colony site, or wood storks have been documented foraging on a project site outside the CFA ……..….go to E

E. Project provides SFH compensation within the Service Area of a Service-approved wetland mitigation bank or wood stork conservation bank preferably within the CFA, or consists of SFH compensation within the CFA consisting of enhancement, restoration or creation in a project phased approach that provides an amount of habitat and foraging function equivalent to that of impacted SFH (see *Wood Stork Foraging Habitat Assessment Procedure*[6] for guidance), is not contrary to the Service's *Habitat Management Guidelines For The Wood Stork In The Southeast Region* and in accordance with the CWA section 404(b)(1) guidelines……*NLAA*[4]

Project does not satisfy these elements.……....……...*May affect*

[1] An active nesting site is defined as a site currently supporting breeding pairs of wood storks, or has supported breeding wood storks at least once during the preceding 10-year period.

[2] Suitable foraging habitat (SFH) is described as any area containing patches of relatively open (< 25% aquatic vegetation), calm water, and having a permanent or seasonal water depth between 2 and 15 inches (5 to 38 cm). 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 and stock ponds, shallow, seasonally flooded roadside or agricultural ditches, narrow tidal creeks or shallow tidal pools, managed impoundments, and depressions in cypress heads and swamp sloughs. See above *Summary of General Wood Stork Nesting and Foraging Habitat Information*.

[3] On an individual basis, projects that impact less than 0.5 acre of SFH generally will not have a measurable effect on wood storks, although we request the Corps to require mitigation for these losses when appropriate. Wood Storks are a wide ranging species, and individually, habitat change from impacts to less than 0.5 acre of SFH is 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.

[4] Upon Corps receipt of a general concurrence issued by the JAFL through the Programmatic Concurrence on this key, "NLAA" determinations for projects made pursuant to this key require no further consultation with the JAFL.

[5] The U.S. Fish and Wildlife Service (Service) has identified core foraging area (CFA) around all known wood stork nesting colonies that is important for reproductive success. In Central Florida, CFAs include suitable foraging habitat (SFH) within a 15-mile radius of the nest colony; CFAs in North Florida include SFH within a 13-mile radius of a colony. The referenced map provides locations of known colonies and their CFAs throughout Florida documented as active within the last 10 years. The Service believes loss of suitable foraging wetlands within these CFAs may reduce foraging opportunities for the wood stork.

[6]This draft document, *Wood Stork Foraging Habitat Assessment Procedure*, by Passarella and Associates, Incorporated, may serve as further guidance in ascertaining wetland foraging value to wood storks and compensating for impacts to wood stork foraging habitat.

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 that were determined "may affect, not likely to adversely affect." It is requested that information on date, Corps identification number, project acreage, project wetland acreage, and latitude and longitude in decimal degrees be sent to the Service quarterly.

Literature Cited

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.

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

Appendix K: Tricolored bat Avoidance and Minimization Measures for FDOT Projects

Florida Department of Transportation

RON DESANTIS
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

JARED W. PERDUE, P.E.
SECRETARY

December 12, 2024

Robert Carey
U.S. Fish and Wildlife Service
Division Manager, Environmental Review and Consultations

RE: Tricolored bat Avoidance and Minimization Measures for FDOT projects

Dear Mr. Carey,

On September 13, 2022 the U.S. Fish and Wildlife Service (FWS) announced a proposal to list the tricolored bat (*Perimyotis subflavus*) as endangered under the Endangered Species Act (ESA). The Florida Department of Transportation (FDOT) consulted with the United States Fish and Wildlife Service (FWS) on December 3, 2024, to discuss procedures that will be followed for FDOT projects in the preparation for potential ESA listing for the tricolored bat.

1. If the USFWS Information for Planning and Consultation (IPaC) tool does not return the potential for the tricolored bat to be in the project limits, the project will have no effect on the species and no further action is required.
2. If a project area does not contain suitable habitat for the tricolored bat the project will have no effect on the species and no further action is required. The Indiana Bat and Northern Long-eared Bat Survey Guidance, Appendix A Habitat Assessments protocol may be useful in determining suitable habitat.
3. If the project does not require tree trimming or work on a culvert (3 feet or greater in diameter and longer than 25 feet (7.6 meters)) or bridge, then the project will have no effect on the species and no further action is required.
4. Upon listing of the tricolored bat, if the project contains suitable habitat and requires tree trimming and/or clearing, FDOT will not conduct tree trimming/clearing activities during the tricolored bat pup season (May 1st to July 15th) and when bats may be in torpor (when temperatures are below 45 degrees Fahrenheit).
5. Upon listing of the tricolored bat, if the project contains suitable habitat and FDOT needs to trim or clear trees or perform work on bridges/culverts during the maternity season and/or when the temperature is below 45 degrees Fahrenheit, then FDOT will survey the project area for evidence of the tricolored bat. The Indiana Bat and Northern Long-eared Bat Survey Guidance (USFWS), appendix J acoustic survey protocol in the year-round range (mist netting is not being conducted in Florida at this time), will be used for areas with tree trimming/clearing. For bridges and culvers, the Indiana Bat and Northern Long-

eared Bat Survey Guidance, appendix K, Assessing Bridges and Culverts for Bats, will be used.

a. If the surveys result in no tricolored bats detected, then FDOT can proceed with the project activities. Negative results from bridge/culvert surveys are valid for 2 years. Negative results for acoustic surveys are valid for 5 years. However, negative results for either survey may be invalidated if additional tricolored bat survey data is submitted to FWS showing presence of the species within the vicinity of the project area. Additional survey work by FDOT, or application of the avoidance and minimization measures noted in #4, may be required if updated detections are reported, and may result in reinitiation of consultation with FWS.
b. If the surveys result in positive detections of the tricolored bat, FDOT will implement conservation measures such as: not conducting tree trimming/clearing activities during the tricolored bat pup season (May 1st to July 15th) when pups are not volant and not able to escape disturbance; similarly avoid tree trimming/clearing activities when the temperatures are below 45 degrees Fahrenheit when bats may be in torpor and unresponsive to disturbance.

In addition to the procedures listed above, FDOT contractors must adhere to FDOT's Contractor Requirements for Unanticipated Interaction with Protected Species. These requirements are included in FDOT's Standard Specifications for Road and Bridge Construction and apply to all FDOT construction projects. See Unanticipated Interaction with Protected Species.

FDOT is dedicated to adhering to the regulations under the ESA. We appreciate FWS's willingness to partner with FDOT towards the conservation and recovery of the tricolored bat while assisting FDOT with our transportation goals.

FDOT is requesting your concurrence on the procedures outlined above. FDOT will adhere to these procedures until a programmatic agreement for the Tricolored bat has been executed. If you have any questions, please contact me at Jennifer.Marshall@dot.state.fl.us

Sincerely,

DocuSigned by:
D881D38487C64D2...

Jennifer Marshall
Director, Office of Environmental Management

JM/thc

Appendix L: Standard Manatee Conditions for In-Water Work

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 M: USACE Effect Determination Key for the Manatee

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.

GLOSSARY

Areas of inadequate protection (AIP) – Areas within counties as shown on the maps where the Service has determined that measures intended to protect manatees from the reasonable certainty of watercraft-related take are inadequate. Inadequate protection may be the result of the absence of manatee or other watercraft speed zones, insufficiency of existing speed zones, deficient speed zone signage, or the absence or insufficiency of speed zone enforcement.

Boat slip – A space on land or in or over the water, other than on residential land, that is intended and/or actively used to hold a stationary watercraft or its trailer, and for which intention and/or use is confirmed by legal authorization or other documentary evidence. Examples of boat slips include, but are not limited to, docks or piers, marinas, boat ramps and associated trailer parking spaces, boat lifts, floats, floating docks, pilings, boat davits, dry storage, etc.

Critical habitat – For listed species, this consists of: (1) the specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the provisions of section 4 of the Endangered Species Act (ESA), on which are found those physical or biological features (constituent elements) (a) essential to the conservation of the species and (b) which may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by the species at the time it is listed in accordance with the provisions of section 4 of the ESA, upon a determination by the Secretary that such areas are essential for the conservation of the species. Designated critical habitats are described in 50 CFR 17 and 50 CFR 226.

Currently serviceable – Currently, serviceable means usable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

Direct effects – The direct or immediate effects of the project on the species or its habitat.

Dredging – For the purposes of this key, the term dredging refers to all in-water work associated with dredging operations, including mobilization and demobilization activities that occur in water or require vessels.

Emergent vegetation – Rooted emergent vascular macrophytes such as, but not limited to, cordgrass (*Spartina alterniflora and S. patens*), needle rush (J*uncus roemerianus*), swamp sawgrass (*Cladium mariscoides*), saltwort (*Batis maritima*), saltgrass (*Distichlis spicata*), and glasswort (*Salicornia virginica*) found in coastal salt marsh-related habitats (tidal marsh, salt marsh, brackish marsh, coastal marsh, coastal wetlands, tidal wetlands).

Formal consultation – A process between the Services and a Federal agency or applicant that: (1) determines whether a proposed Federal action is likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat; (2) begins with a Federal agency's written request and submittal of a complete initiation package; and (3) concludes with the issuance of a biological opinion and incidental take statement by either of the Services. If a proposed Federal action may affect a listed species or designated critical habitat, formal consultation is required (except when the Services concur, in writing, that a proposed

action "is not likely to adversely affect" listed species or designated critical habitat). [50 CFR 402.02, 50 CFR 402.14]

Important manatee areas (IMA) – Areas within certain counties where increased densities of manatees occur due to the proximity of warm water discharges, freshwater discharges, natural springs and other habitat features that are attractive to manatees. These areas are heavily utilized for feeding, transiting, mating, calving, nursing or resting as indicated by aerial survey data, mortality data and telemetry data. Some of these areas may be federally-designated sanctuaries or state-designated "seasonal no entry" zones. Maps depicting important manatee areas and any accompanying text may contain a reference to these areas and their special requirements. Projects proposed within these areas must address their special requirements.

Indirect effects – Those effects that are caused by or will result from the proposed action and are later in time, but are still reasonably certain to occur. Examples of indirect effects include, but are not limited to, changes in water flow, water temperature, water quality (*e.g.*, salinity, pH, turbidity, nutrients, chemistry), prop dredging of seagrasses, and manatee watercraft injury and mortality. Indirect effects also include watercraft access developments in waters not currently accessible to manatees, but watercraft access can, is, or may be planned to waters accessible to manatees by the addition of a boat lift or the removal of a dike or plug.

Informal consultation – A process that includes all discussions and correspondence between the Services and a Federal agency or designated non-Federal representative, prior to formal consultation, to determine whether a proposed Federal action may affect listed species or critical habitat. This process allows the Federal agency to utilize the Services' expertise to evaluate the agency's assessment of potential effects or to suggest possible modifications to the proposed action which could avoid potentially adverse effects. If a proposed Federal action may affect a listed species or designated critical habitat, formal consultation is required (except when the Services concur, in writing, that a proposed action "is not likely to adversely affect" listed species or designated critical habitat). [50 CFR 402.02, 50 CFR 402.13]

In-water activity – Any type of activity used to construct/repair/replace any type of in-water structure or fill; the act of dredging.

In-water structures – watercraft access structures – Docks or piers, marinas, boat ramps, boat slips, boat lifts, floats, floating docks, pilings (depending on use), boat davits, etc.

In-water structures – other than watercraft access structures – Bulkheads, seawalls, riprap, groins, boardwalks, pilings (depending on use), etc.

Is likely to adversely affect – The appropriate finding in a biological assessment (or conclusion during informal consultation) if any adverse effect to listed species may occur as a direct or indirect result of the proposed action or its interrelated or interdependent actions and the effect is not: discountable, insignificant, or beneficial (see definition of "is not likely to adversely affect"). An "is likely to adversely affect" determination requires the initiation of formal consultation under section 7 of the ESA.

Is not likely to adversely affect – The appropriate conclusion when effects on listed species are expected to be discountable, insignificant, or completely beneficial. **Discountable effects** are those extremely unlikely to occur. **Insignificant effects** relate to the size of the impact and should never reach the scale where take occurs. **Beneficial effects** are contemporaneous positive effects without any adverse effects to the species. Based on best judgment, a person would not (1) be able to meaningfully measure, detect, or evaluate insignificant effects or (2) expect discountable effects to occur.

Manatee Protection Plan (MPP) – A manatee protection plan (MPP) is a comprehensive planning document that addresses the long-term protection of the Florida manatee through law enforcement, education, boat facility siting, and habitat protection initiatives. Although MPPs are primarily developed by the counties, the plans are the product of extensive coordination and cooperation between the local governments, the FWC, the Service, and other interested parties.

Manatee Protection Plan thresholds – The smallest size of a multi-slip facility addressed under the purview of a Manatee Protection Plan (MPP). For most MPPs, this threshold is five slips or more. For Brevard, Clay, Citrus, and Volusia County MPPs, this threshold is three slips or more.

Mangroves – Rooted emergent trees along a shoreline that, for the purposes of this key, include red mangrove (*Rhizophora mangle*), black mangrove (*Avicennia germinans*) and white mangrove (*Laguncularia racemosa*).

May affect – The appropriate conclusion when a proposed action may pose <u>any</u> effects on listed species or designated critical habitat. When the Federal agency proposing the action determines that a "may affect" situation exists, then they must either request the Services to initiate formal consultation or seek written concurrence from the Services that the action "is not likely to adversely affect" listed species. For the purpose of this key, all "may affect" determinations equate to "likely to adversely affect" and Corps Project Managers should request the Service to initiate formal consultation on the manatee or designated critical habitat. **No effect –** the appropriate conclusion when the action agency determines its proposed action will not affect a listed species or designated critical habitat.

Multi-slip facility – Multi-slip facilities include commercial marinas, private multi-family docks, boat ramps and associated trailer parking spaces, dry storage facilities and any other similar structures or activities that provide access to the water for multiple (five slips or more, except in Brevard, Clay, Citrus, and Volusia counties where it is three slips or more) watercraft. In some instances, the Corps and the Service may elect to review multiple residential dock facilities as a multi-slip facility.

New access for watercraft – New dredging and the addition, expansion 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, (residential boat lifts, pilings, floats, and floating vessel platforms installed in existing slips are not considered new access), boat slips, dry storage, mooring buoys, etc., that facilitates the addition of watercraft to, and/or increases watercraft usage in, waters accessible to manatees.

Observers – During dredging and other in-water operations within manatee accessible waters, the standard manatee construction conditions require all on-site project personnel to watch for manatees to ensure that those standard manatee construction conditions are met. Within important manatee areas (IMA) and under special circumstances, heightened observation is needed. **Dedicated Observers** are those having some prior experience in manatee observation, are dedicated only for this task, and must be someone other than the dredge and equipment operators/mechanics. **Approved Observers** are dedicated observers who also must be approved by the Service (if Federal permits are involved) and the FWC (if state permits are involved), prior to work commencement. Approved observers typically have significant and often project-specific observational experience. Documentation on prior experience must be submitted to these agencies for approval and must be submitted a minimum of 30 days prior to work commencement. When dedicated or approved observers are required, observers must be on site during all in-water activities, and be equipped with polarized sunglasses to aid in manatee observation. For prolonged in-water operations, multiple observers may be needed to perform observation in shifts to reduce fatigue (recommended shift length is no longer than six hours). Additional information concerning observer approval can be found at FWC's web page.

Residential boat lift – A boat lift installed on a residential dock facility.

Residential dock density ratio threshold – The residential dock density ratio threshold is used in the evaluation of multi-slip projects in some counties without a State-approved Manatee Protection Plan and is consistent with 1 boat slip per 100 linear feet of shoreline (1:100) owned by the applicant.

Residential dock facility – A residential dock facility means a private residential dock which is used for private, recreational or leisure purposes for single-family or multi-family residences designed to moor no more than four vessels (except in Brevard, Clay, Citrus, and Volusia counties which allow only two vessels). This also includes normal appurtenances such as residential boat lifts, boat shelters with open sides, stairways, walkways, mooring pilings, dolphins, etc. In some instances, the Corps and the Service may elect to review multiple residential dock facilities as a multi-slip facility.

Submerged aquatic vegetation (SAV) – Rooted, submerged, aquatic plants such as, but not limited to, shoal grass (*Halodule wrightii*), paddle grass (*Halophila decipiens*), star grass (*Halophila engelmanni*), Johnson's seagrass (*Halophila johnsonii*), sago pondweed (*Potamogeton pectinatus*), clasping-leaved pondweed (*Potamogeton perfoliatus*), widgeon grass (*Ruppia maritima*), manatee grass (*Syringodium filiforme*), turtle grass (*Thalassia testudinum*), tapegrass (*Vallisneria americana*), and horned pondweed (*Zannichellia palustris*).

Warm Water Aggregation Areas (WWAAs) and **No Entry Areas –** Areas within certain counties where increased densities of manatees occur due to the proximity of artificial or natural warm water discharges or springs and are considered necessary for survival. Some of these areas may be federally-designated manatee sanctuaries or state-designated seasonal "no entry" manatee protection zones. Projects proposed within these areas may require consultation in order to offset expected adverse impacts. In addition, special permits may be required from the FWC in order to access these areas.

Watercraft access structures – Docks or piers, marinas, boat ramps and associated trailer parking spaces, boat slips, boat lifts, floats, floating docks, pilings, boat davits, dry storage, etc.

Waters accessible to manatees – Although most waters of the State of Florida are accessible to the manatee, there are some areas such as landlocked lakes that are not. There are also some weirs, salinity control structures and locks that may preclude manatees from accessing water bodies. If there is any question about accessibility, contact the Service or the FWC.

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)

Appendix N: Benthic Resources Survey Technical Memorandum

Technical Memorandum

date	October 5, 2023
to	Frank Kahoun, SCALAR Consulting Group, Inc.
from	George Burke, Senior Biologist
subject	FPID: 436676-1-22-01 SR 789 (Longboat Key) Bridge No. 130057 Reconstruction/Rehabilitation Benthic Resource Survey Memorandum

INTRODUCTION

The Florida Department of Transportation (FDOT) District 1 is conducting a project development and environmental (PD&E) study to assess the reconstruction or rehabilitation alternatives for the State Road (SR) 789/Gulf of Mexico Drive Bridge no. 130057 over the Longboat Pass Inlet in Manatee County, Florida (see **Attachment A. Figure 1. Project Location Map**). This PD&E study is being conducted to determine the best solution to address the structural integrity and operational deficiencies of the existing bridge. Longboat Pass Inlet connects Sarasota Bay with the waters of the Gulf of Mexico and is used by a variety of marine life entering or leaving the Bay. Within the project area, Longboat Pass Inlet has the potential to support protected marine resources, such as seagrasses and corals, provide habitat for threatened and/or endangered species, and contain Essential Fish Habitat (EFH) for species within federally managed fisheries. The preferred replacement alternative is currently proposed to cross the inlet west of the existing bridge. As the project has the potential to impact protected marine resources and EFH, a benthic resource survey was conducted to determine the presence/absence and general limits of any natural resources, and to identify existing EFH located within the project area. The purpose of this memorandum is to provide the results of the benthic survey within the survey area at the Longboat Pass Inlet (See **Attachment A. Figure 2. Proposed Bridge Alignment and Survey Area Map**). The information in this memorandum will be used to inform design decisions, develop avoidance and minimization measures, and will be incorporated into the Natural Resources Evaluation (NRE) document for this PD&E study. The NRE is anticipated to be the basis for coordination with the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) during Section 7 and EFH Consultation for the project.

SITE DESCRIPTION AND BACKGROUND

The existing SR 789 (Longboat Key) Bridge no. 130057 is a two-lane bridge that was originally built in 1957 and was reconstructed in 2005. The bridge crosses a small channel between Sarasota Bay to the east and the Greer Island lagoon to the west before crossing over Greer Island Park and finally over the Longboat Pass Inlet. The Longboat Pass Inlet is a navigable channel separating Anna Maria Island to the north and Longboat Key to the south. Water enters this inlet tidally from the Gulf of Mexico to the west

into Sarasota Bay. Tidal flow through this inlet creates swift currents, which are evident from the sand scouring visible in aerial imagery. The area reviewed for this benthic survey included the existing bridge footprint, plus a 20-foot buffer along the eastern edge of bridge. In addition, the survey area included the footprint of the current replacement bridge design alternative proposed to the west of the existing bridge, along with a 50-foot buffer along the western edge of this proposed bridge (see **Attachment A. Figure 2. Proposed Bridge Alignment and Survey Area Map)**.

Of note from the desktop review of the project area (which is described in further detail in the next section), it was found that the channel entrance to the Greer Island lagoon located at the southern end of the bridge has recently (September 2023) been dredged, as part of the Greer Island Spit Management Project, to allow for better flushing within this lagoon. This was a project conducted by the Town of Longboat Key and further details on this effort are included in **Attachment B. Representative Photographs**.

METHODOLOGY

Prior to the in-water survey, qualified environmental scientists performed a desktop review of the project area using publicly available Geographic Information System (GIS) data and literature specific to the project area to get familiar with the existing marine habitat, determine the listed species potentially occurring within the project area, and identify the managed fisheries that may have designated EFH in the project area. The data was compiled and reviewed to identify previously documented and potential submerged aquatic vegetation (SAV) habitat and benthic communities within the project area. Data sources used in this evaluation included:

- Google Earth aerials (through 2023)
- Florida Fish and Wildlife Conservation Commission (FWC) Florida Seagrass 2022 shapefile
- FWC Marine Resource GIS
- FDOT's Efficient Transportation Decision Making (ETDM) Environmental Screening Tool (EST)
- ETDM Summary Report No. 14382
- Local news articles (yourobserver.com/news)
- Florida Department of Environmental Protection (FDEP) Environmental Resource Permit (ERP) BCS_0385996 – Greer Island Spit Management Project
- National Oceanographic and Atmospheric Administration (NOAA) NMFS Essential Fish Habitat (EFH) Mapper
- NOAA Hurricane Idalia aerial imagery (September 2023)

The project is located in the Sarasota Bay Estuarine system, a designated Outstanding Florida Water (OFW), and is within the USFWS's designated consultation areas for the West Indian manatee (*Trichechus manatus*), the piping plover (*Charadrius melodus*), and the Florida scrub jay (*Aphelocoma coerulescens*); additionally, the sandy Gulf front beach along Longboat Key within the project area is designated as Critical Habitat for nesting loggerhead sea turtles (*Caretta caretta*). This review did not identify any Habitat Areas of Particular Concern (HAPC) for any federally managed fisheries within the project area.

Per comments from NMFS during the Environmental Technical Advisor Team (ETAT) review (ETDM Summary Report No. 14382, 2020) and a recent query of the EFH database, the project area has the

potential to contain EFH for the species within the following fisheries managed by the Gulf of Mexico Fishery Management Council (GMFMC):

- Shrimp Fishery (4 species)
- Coastal Migratory Pelagics Fishery
- Reef Fish Fishery (43 species)
- Red Drum Fishery
- Spiny Lobster Fishery (2 species)
- Atlantic Highly Migratory Species Fishery (8 shark species)

Based on the current design for the replacement alternative (SCALAR, dated 9/13/2023), the benthic survey area was determined to be a 50-foot buffer around the footprint of the proposed bridge. In addition, the survey area included the existing bridge area plus an additional 20-foot buffer along the east side of the bridge to account for potential impacts associated with bridge removal/demolition. The survey was conducted on September 18, 2023, within the June 1st to September 30th seagrass survey window (NOAA NMFS, 2010). The survey limits were uploaded into a web map using ArcGIS Pro, which was accessed using the Field Maps application on a Samsung tablet in the field. Based on reviews of previous GIS data, aerial imagery, and existing permit data (ERP BCS_0385996), seagrass habitat exists in the Greer Island lagoon located in the southwest corner of the survey area. As such, this area was the primary focus of SAV resource mapping. The survey began in this southwest corner of the survey area with two (2) snorkeling biologists performing reconnaissance swims while another biologist in a kayak identified the boundaries of the survey area using a GPS. The biologists located the seagrass areas and began delineating the edge-of-bed by having one biologist snorkel over the seagrass edge while towing a second biologist collecting GPS datapoints in a kayak. In addition, general visual estimates of the seagrass density were conducted within each of the identified seagrass areas.

The field GPS data was collected using an Arrow 100 GPS unit receiving real-time kinematic positions from the Florida Permanent Reference Network (FPRN) to achieve sub-meter horizontal position accuracy. The GPS data was processed and overlaid onto a project aerial using ESRI ArcGIS (see **Attachment A. Figure 3: Benthic Survey Results Map**).

The inlet area was surveyed by GPS positioning a boat at the western survey limit while two snorkeling biologists performed systematic reconnaissance swims in the survey area. The survey was conducted during an incoming tide and visibility in the inlet was 10-20 feet during the survey, which enabled the biologists to observe the entire substrate within the survey area. Lastly, underwater photography was used to document the benthic conditions throughout the project area and representative photographs from the survey are included in **Attachment B. Representative Photographs**.

RESULTS

Within the survey area, the Longboat Pass Inlet consists primarily of sandy bottom habitat with scattered shells and other carbonate fragments. Scattered leaf litter and other detritus was also observed in a few areas near the southern shoreline. The northern and southern shorelines are shallow and gently slope into the deeper waters in the channel where depths reach approximately 30 feet within the navigable channel between the fenders. The depths across this inlet ranged from 3-10 feet around the shorelines and dropped to 10-25 feet deep around the existing bridge structures. No protected benthic resources were found within this inlet area. The existing bridge pilings have barnacles around the waterlines with minimal algae,

sponges, or other fouling organisms below the waterline. The complete benthic survey limits and identified marine resources are presented in **Attachment A. Figure 3. Benthic Survey Results Map**.

Shoal grass (*Halodule wrightii*) and turtle grass (*Thalassia testudinum*) were documented within the shallow lagoon in the southern extent of the survey area (see **Attachment A. Figure 4. Seagrass Resources Map**). One (1) continuous seagrass bed (CS-1) contains a dense mix (75-100% coverage) of both seagrass species with shoal grass being the dominant species and turtle grass varying in density along the edge of this bed. Four (4) sparse (less than 10% coverage), patchy, discontinuous seagrass areas (DS-1 through DS-4) were also documented in this area (see **Table 1** below).

Table 1. Identified Seagrass Resources in Survey Area

Map ID	Description	Acreage in Survey Area
CS-1	Continuous Seagrass Bed (*T. testudinum* and *H. wrightii*)	0.37 Ac
DS-1	Patchy-Discontinuous seagrass (*T. testudinum* and *H. wrightii*)	0.07 Ac
DS-2	Patchy-Discontinuous seagrass (*T. testudinum* and *H. wrightii*)	0.07 Ac
DS-3	Patchy-Discontinuous seagrass (*H. wrightii*)	0.04 Ac
DS-4	Patchy-Discontinuous seagrass (*H. wrightii*)	0.02 Ac

The seagrass west of the existing bridge consisted of sparse patches of both shoal and turtle grass, while the seagrasses east of the bridge consisted of only sparse shoal grass patches with scattered macroalgae (*Caulerpa* spp.). A functional analysis was performed for these seagrass areas using the Uniform Mitigation Assessment Method (UMAM) and these scores have been included in **Attachment C. UMAM Sheets**. Two (2) UMAM assessments were completed, one covering the anticipated impacts to the continuous seagrass bed (CS-1), and the other covering the anticipated impacts to the discontinuous seagrass areas (DS-1 through DS-4). The UMAM assessments resulted in an anticipated total loss of 0.3 acres of seagrass habitat equating to a total functional loss of 0.08 units. For further details including photographs and associated information from this benthic survey and of the survey area in general see **Attachment B. Representative Photographs**.

The Longboat Pass Inlet provides a crucial passage between Sarasota Bay and the Gulf of Mexico that can be used by a variety of marine life. In addition, the shallow lagoon provides forage opportunities for a variety of wildlife and several species were observed utilizing this area. The wildlife observed in the survey area included: great blue heron (*Ardea herodias*), little blue heron (*Egretta caerulea*), limpkin (*Aramus guarauna*), white ibis (*Eudocimus albus*), osprey (*Pandion haliaetus*), West Indian manatee, mullet (*Mugil cephalus*), snook (*Centropomus undecimalis*), sheepshead (*Archosargus probatocephalus*), sergeant major (*Abudefduf saxatilis*), mangrove snapper (*Lutjanus griseus*), longnose spider crab (*Libinia dubia*), manta ray (*Mobula birostris*), and blue crab (*Callinectes sapidus*).

CONCLUSIONS

The benthic assessment survey was conducted to provide a general habitat characterization of the existing conditions within the survey area and to identify any marine resources that could be impacted by build alternatives considered during this PD&E study. The benthic substrate within most of the survey area within the Longboat Pass Inlet consisted of bare sand with scattered shells and other carbonate remnants. No seagrasses or other SAV was documented within the inlet portion of the survey area. It appears the swift tidal current that flows through this area and the shifting sand bottom prevents the establishment of

these marine resources. The only documented benthic resources were found in the southern extent of the survey area within and around the Greer Island lagoon. Prior to this survey, environmental dredge and beach renourishment work had recently occurred in the survey area which included dredging the 1A Canal channel entrance to the Greer Island Lagoon. This channel had been filling in with sand washed in from the Gulf of Mexico; however, it is now more sufficiently able to provide direct flushing with fresh ocean water. This lagoon experiences substantially lower tidal current velocities than occurs within the Inlet, benefiting the establishment of seagrasses and SAV. Sparse seagrasses were documented at the corners of the mouth of this lagoon and a larger, more dense seagrass bed was found within the lagoon. The mixed species seagrass bed consisted of turtle grass and shoal grass, with shoal grass being the dominant species and turtle grass generally limited to the edges of this bed. The limits of seagrasses documented in this survey were found to be consistent with the previously mapped seagrasses limits in this lagoon (FWC Statewide Seagrass (2022) and the pre-construction survey for the Greer Island Spit Management Project, ERP BCS_0385996 (May, 2023)). UMAM scores were prepared for the documented seagrass areas and are included in **Attachment C**. These scores are subject to change depending on design changes and/or other environmental factors that may change prior to permit issuance. The Greer Island lagoon portion of the survey area, as identified in the UMAM assessment criteria, provides generally moderate to high quality habitat for seagrasses and a variety of marine and avian species that utilize this area throughout multiple life stages. In addition, the inlet portion of the survey provides an important connection between Sarasota Bay and the Gulf of Mexico, although this area does not contain protected benthic resources. Finally, based on the results of the benthic survey seagrasses, estuarine water column, and sand-shell substrate are the categories of EFH that have the potential be directly impacted by the project, if the replacement bridge alternative is to be constructed.

Literature Cited

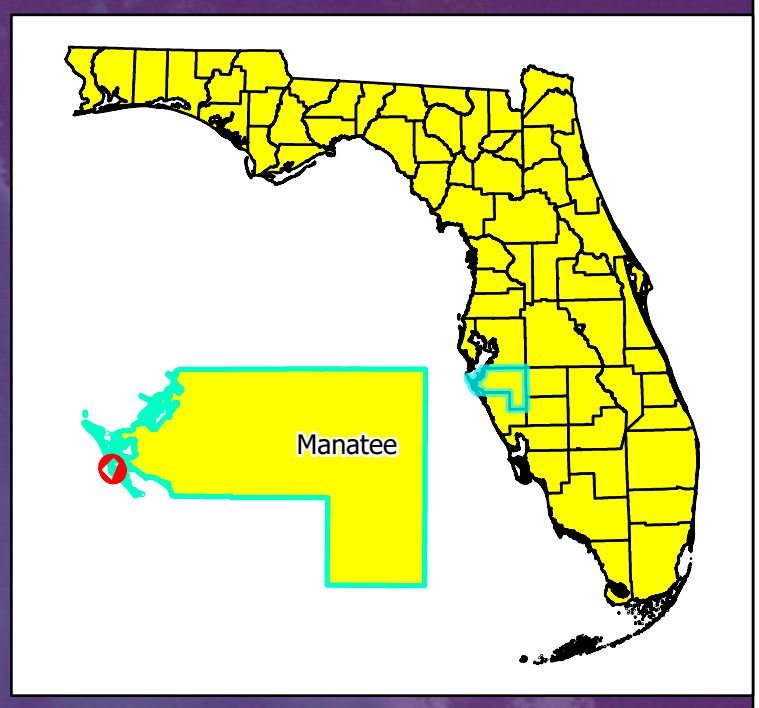
Florida Department of Transportation. *Efficient Transportation Decision Making Environmental Screening Tool*, ETDM Summary Report No. 14382, Published July 30, 2020.

NOAA NMFS Southeast Region. Habitat Conservation Division. A Science-based Seagrass Survey Window for Coastal Construction Project Planning in Florida. By Jocelyn Karazsia. West Palm Beach: n.p., 2010. Print.

Attachment A

Project Figures

Benthic Survey Area
Outstanding Florida Waters (OFW) - Sarasota Bay Estuarine System (FDEP, 2023)



Anna Maria Island

789

Coquina Beach Park

Sarasota Bay

GULF OF MEXICO DRIVE

Longboat Pass Inlet

Greer Island Park

Longboat Key

Gulf of Mexico

GULF OF MEXICO DRIVE

U:\GIS\GIS\Projects\19xxxxID201900970_00_SR789_PDE\03_Project\SR789_PDE\SR789_PDE.aprx

FDOT

All data within this map are supplied as is, without warranty. This product has not been prepared for legal, engineering, or survey purposes. Users of this information should review or consult the primary data sources to ascertain the usability of the information.

Figure 1 - Project Location Map

FPID #: 436676-1-22-01
SR 789 (Longboat Key) Bridge Reconstruction/Rehabilitation
Manatee County, Florida

0 500 1,000 Feet

Data Source: ESA, FDEP
ESRI Imagery (Date Unknown)

N

U:\GIS\GIS\Projects\19xxxx\D20190970_00_SR789_PDE\03_Project\SR789_PDE\SR789_PDE.aprx

All data within this map are supplied as is, without warranty. This product has not been prepared for legal, engineering, or survey purposes. Users of this information should review or consult the primary data sources to ascertain the usability of the information.

Figure 2 - Proposed Bridge Alignment and Survey Area Map

FPID #: 436676-1-22-01
SR 789 (Longboat Key) Bridge Reconstruction/Rehabilitation
Manatee County, Florida

0 250 500 Feet

Data Source: ESA, SCALAR, ESRI Imagery (Date Unknown)

N

Benthic Survey Area

Benthic Survey Results (ESA, Sept. 2023)

Bare Sand and Shell Mix

Continuous Seagrass Bed (*T. testudinum* and *H. wrighti*)

Patchy-Discontinuous seagrass (*T. testudinum* and *H. wrighti*)

Patchy-Discontinuous seagrass (*H. wrightii*)

Coquina Beach Park

Sarasota Bay

789

Longboat Pass Inlet

GULF OF MEXICO DRIVE

Greer Island Lagoon

DS-2

DS-3

CS-1

DS-4

DS-1

U:\GIS\GIS\Projects\19xxxx\D20190097O_00_SR789_PDE\03_Project\SR789_PDE\SR789_PDE.aprx

FDOT

All data within this map are supplied as is, without warranty. This product has not been prepared for legal, engineering, or survey purposes. Users of this information should review or consult the primary data sources to ascertain the usability of the information.

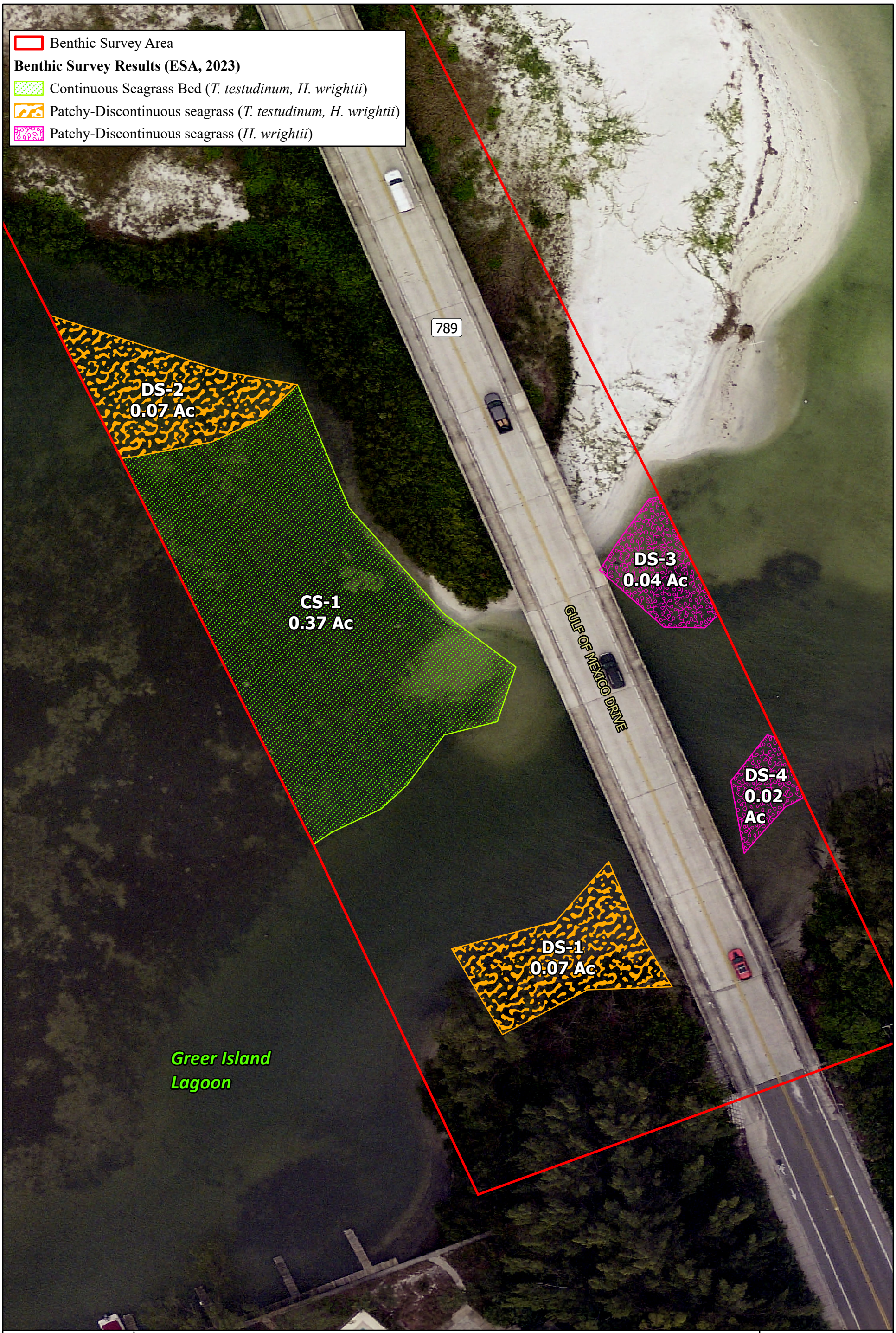
Figure 3 - Benthic Survey Results Map

FPID #: 436676-1-22-01
SR 789 (Longboat Key) Bridge Reconstruction/Rehabilitation
Manatee County, Florida

0 250 500 Feet

Data Source: ESA,
ESRI Imagery (Date Unknown)

N



U:\GIS\GIS\Projects\19xxxx\D20190097O_00_SR789_PDE\03_Project\SR789_PDE\SR789_PDE.aprx

All data within this map are supplied as is, without warranty. This product has not been prepared for legal, engineering, or survey purposes. Users of this information should review or consult the primary data sources to ascertain the usability of the information.

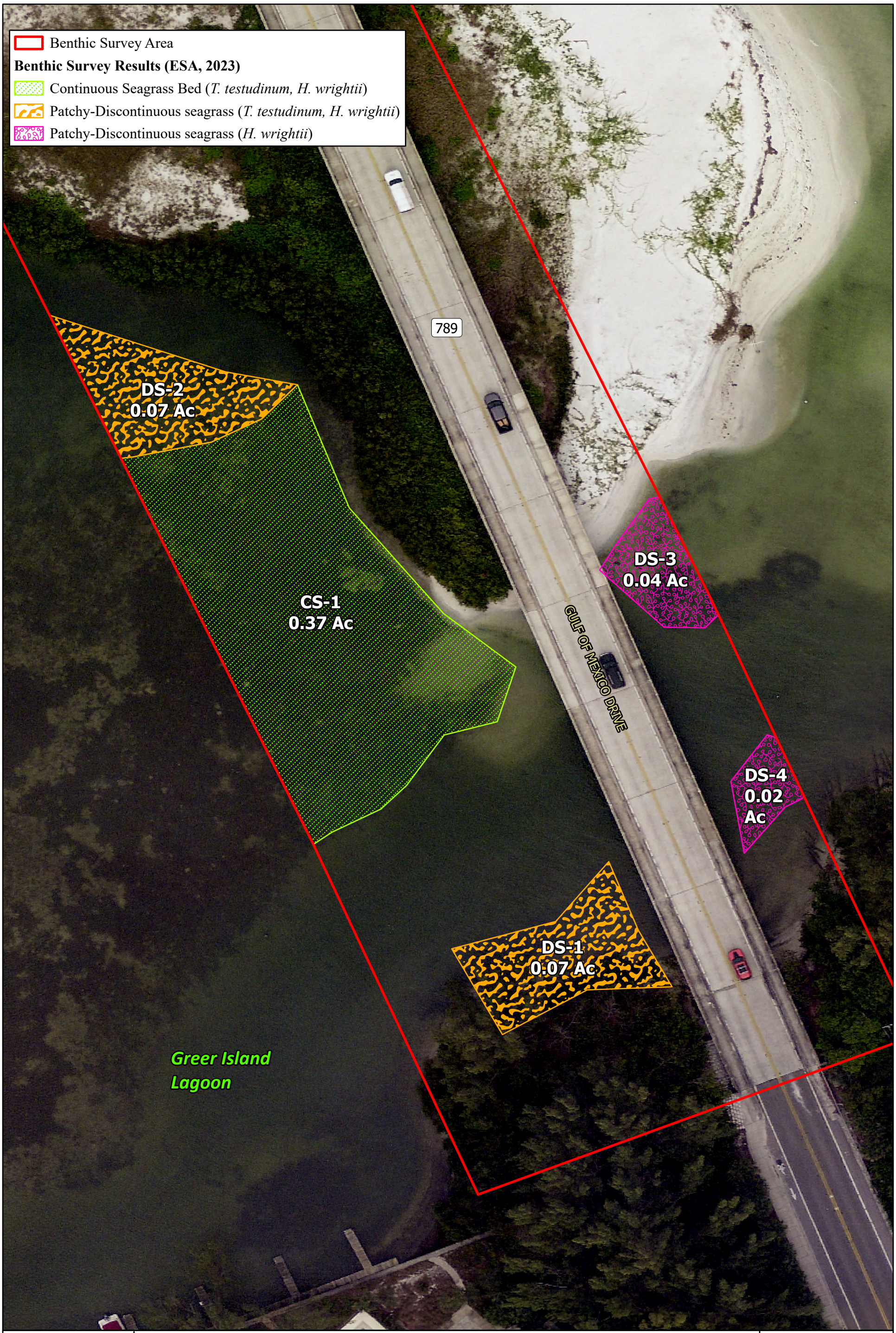
Figure 4 - Seagrass Resources Map

FPID #: 436676-1-22-01
SR 789 (Longboat Key) Bridge Reconstruction/Rehabilitation
Manatee County, Florida

Feet
0 50 100

Data Source: ESA,
Manatee County Imagery (2023)

N



U:\GIS\GIS\Projects\19xxxx\D20190097O_00_SR789_PDE\03_Project\SR789_PDE\SR789_PDE.aprx

All data within this map are supplied as is, without warranty. This product has not been prepared for legal, engineering, or survey purposes. Users of this information should review or consult the primary data sources to ascertain the usability of the information.

Figure 4 - Seagrass Resources Map

FPID #: 436676-1-22-01
SR 789 (Longboat Key) Bridge Reconstruction/Rehabilitation
Manatee County, Florida

Feet
0 50 100

Data Source: ESA,
Manatee County Imagery (2023)

N

Attachment B

Representative Photographs

Representative Photographs

Photograph No.: 1

Date: September 18, 2023

Location: Longboat Key Bridge Benthic Survey Area Manatee County, FL

Notes: The photograph shows the topside view of the survey area on the west side of the SR 789 bridge no. 130057 facing north across the Longboat Pass Inlet.

Representative Photographs

Photograph No.: 2

Date: September 18, 2023

Location: Longboat Key Bridge Benthic Survey Area Manatee County, FL

Notes: The photograph shows the mixed seagrass bed consisting of shoal grass (*Halodule wrightii*) and turtle grass (*Thalassia testudinum*) that was documented in the shallow lagoon in the southwestern limits of the survey area.

Representative Photographs

Photograph No.: 3

Date: September 18, 2023

Location: Longboat Key Bridge Benthic Survey Area Manatee County, FL

Notes: The photograph shows the dense coverage of seagrass, shoal and turtle grass, that was documented in the shallow lagoon. Manatees were also observed utilizing this area at the time of the survey. ¼ m^2 quadrat used in this photograph for scale.

Representative Photographs

Photograph No.: 4

Date: September 18, 2023

Location: Longboat Key Bridge Benthic Survey Area Manatee County, FL

Notes: The photograph shows the density of shoal grass observed within the survey area in the shallow lagoon to the southwest of the existing bridge. ¼ m^2 quadrat used in this photograph for scale.

Representative Photographs

Photograph No.: 5

Date: September 18, 2023

Location: Longboat Key Bridge Benthic Survey Area Manatee County, FL

Notes: The photograph shows the observed condition of the mixed species seagrass bed documented in the shallow lagoon to the southwest of the existing bridge.

Representative Photographs

Photograph No.: 6

Date: September 18, 2023

Location: Longboat Key Bridge Benthic Survey Area Manatee County, FL

Notes: The photograph shows the dense seagrass bed that was observed in the shallow lagoon in the southwest portion of the survey area.

Representative Photographs

Photograph No.: 7

Date: September 18, 2023

Location: Longboat Key Bridge Benthic Survey Area Manatee County, FL

Notes: The photograph shows a West Indian manatee (circled), a great blue heron and a white egret foraging within the Greer Island Lagoon observed during the benthic survey.

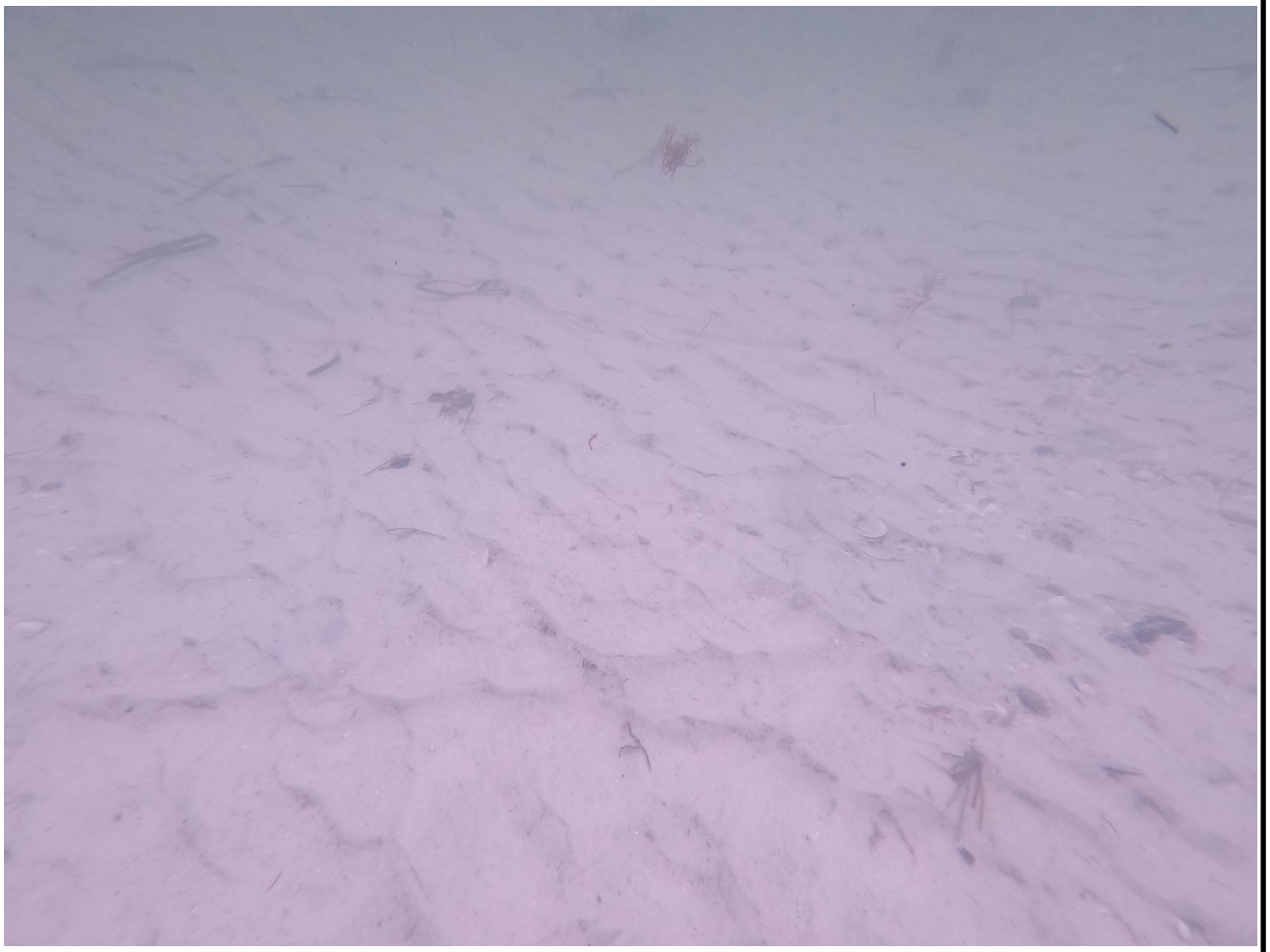
Representative Photographs

Photograph No.: 8

Date: September 18, 2023

Location: Longboat Key Bridge Benthic Survey Area Manatee County, FL

Notes: The photograph shows the bare sand substrate observed in the survey area west of the existing bridge within the Longboat Pass Inlet. The rifles seen in the sand are a result of high velocity currents.



Representative Photographs

Photograph No.: 9

Date: September 18, 2023

Location: Longboat Key Bridge Benthic Survey Area Manatee County, FL

Notes: The photograph shows the shell and sand substrate observed in the survey area around the western edge of the existing bridge in the Longboat Pass Inlet.

Representative Photographs

Photograph No.: 10

Date: September 18, 2023

Location: Longboat Key Bridge Benthic Survey Area Manatee County, FL

Notes: The photograph shows the sloping bare sand substrate observed near the southern edge of the Longboat Pass Inlet. No benthic resources were documented in the survey area within this inlet as it appears the tidal currents are too swift for seagrass or other SAV colonization.

Representative Photographs

Photograph No.: 11

Date: January, 2021

Location: Longboat Key Bridge Benthic Survey Area Manatee County, FL

Notes: The photograph shows the channel entrance to the shallow lagoon at the southern end of the survey area being dredged in early 2021. This photo was used in a news article concerning this work: https://www.yourobserver.com/news/2021/feb/03/longboat-key-expects-to-save-about-dollar8-7-million-on-beach-projects/

Representative Photographs

Photograph No.: 12

Date: September 1, 2023

Location: Longboat Key Bridge Benthic Survey Area Manatee County, FL

Notes: The photograph shows aerial imagery taken by NOAA on September 1, 2023, showing the recent dredge work that took place next to the existing bridge to open up the channel to the shallow lagoon area and renourish nearby beaches using this dredged sand.

Attachment C

UMAM Sheets

UNIFORM WETLAND MITIGATION ASSESSMENT WORKSHEET - PART I - IMPACT
Form 62-345.900(2), F.A.C. (See Sections 62-345.400 F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 789 PD&E from N Shore Rd to Coquina Park Entrance	**N/A**	**Seagrass Patchy-Discontinuous (DS-1, DS-2, DS-3 and DS-4)**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
9113 - Seagrass	**Seagrass Patchy / E1AB3L**	**Impact**	**0.20** Acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Sarasota Bay	**Class II**	**Outstanding Florida Waters (OFW) - Sarasota Bay Estuarine System**

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

Seagrass beds present within the shallow Greer Island Lagoon which is connected to Sarasota Bay and the Gulf of Mexico through a flushing channel in the northeast section of the lagoon running under the southern end of the existing SR 789 bridge. This flushing channel the only avenue to which waters can flow in and out of this lagoon and eventually to the marine waters of the Gulf of Mexico. Seagrass beds are located in various areas within the lagoon, ranging from sparse and patchy, to continuous and dense. Forested mangrove swamps are present along the shoreline of the lagoon.

Assessment area description

Several patchy, discontinuous areas of seagrass habitat are located within the tidal lagoon system in the southern portion of the project area. The two (2) patchy seagrass areas to the west of the existing bridge are comprised of sparse assemblages of turtle grass (*Thalassia testudinum*) and shoal grass (*Halodule wrightii*), and the two (2) seagrass patches to the east of the bridge consist of only sparse shoal grass.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
Gulf of Mexico, Sarasota Bay, Palma Sola Bay, Longboat Pass, Longboat Pass Bridge, SR 789	**Not unique**
Functions **Carbon sequestering, essential fish habitat, water quality improvement, nesting, sheltering, foraging habitat for a variety of aquatic species. Provide habitat to a variety of aquatic species in various stages of their life cycle.**	Mitigation for previous permit/other historic use **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) **Seagrass beds support various life cycle stages and provide habitat for feeding and spawning for many invertebrate and fish species. (Penaeid shrimp, red drum, snapper, grouper, grunts, tarpon, snook, crustaceans, sharks). Seagrass beds also provide feeding habitat for sea turtles and manatees. The assessment area also provides shoreline foraging habitat for a variety of avian species including shorebirds and wading birds.**	Anticipated Utilization by Listed Species (List species, their legal classification (FE, FT, FT (S/A), FXN, ST, SSC), type of use, and intensity of use of the assessment area) **West Indian manatee (FT), American oystercatcher (ST), black skimmer (ST), least tern (ST), little blue heron (ST), piping plover (FT), roseate spoonbill (ST), roseate tern (FT), rufa red knot (FT), snowy plover (ST), tricolored heron (ST), wood stork (FT), loggerhead sea turtle (FT), green sea turtle (FT), Kemp Ridley's sea turtle (FE), hawksbill sea turtle (FE), leatherback sea turtle (FE)**

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

Great blue heron (sight), white ibis (sight), laughing gull (sight), snook (sight), great pelican (sight), osprey (sight), dolphin (sight), snowy egret (sight), West Indian manatee (sight, foraging in lagoon), least tern (sight), mullet (sight), little blue heron (sight), blue crab (sight), limpkin (sight)

Additional relevant factors:

The entrance channel to this shallow lagoon has recently been dredged (2023) as it was backfilling with sand washed in from the Gulf of Mexico. If this channel becomes compromised, lagoon conditions would deteriorate from lack of water flushing.

Assessment conducted by:	Assessment date(s):
George Burke and Alex Hipolito	**09/18/23**

UNIFORM WETLAND MITIGATION ASSESSMENT WORKSHEET - PART II - IMPACT
Form 62-345.900(2), F.A.C. (See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name:	Application Number:	Assessment Area Name or Number:
SR 789 PD&E from N Shore Rd to Coquina Park Entrance	**N/A**	**Seagrass Patchy-Discontinuous (DS-1, DS-2, DS-3 and DS-4)**
Impact or Mitigation:	Assessment Conducted by:	Assessment Date:
Impact	**George Burke and Alex Hipolito**	**09/18/23**

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

	Current	With Impact	
.500(6)(a) Location and Landscape Support	8	6	**These patchy seagrass beds are located in the small tidally influenced Greer Island Lagoon at the southern end of the project area. The seagrass beds are within estuarine waters that are hydrologically connected to the Gulf of Mexico through the Sarasota Bay. There is a flushing channel at the northeast side of the lagoon, which connects the lagoon to Sarasota Bay, and eventually to the Gulf of Mexico. This hydrological connectivity allows a variety of aquatic species to move through the brackish/estuarine water systems to a marine environment in the Gulf of Mexico. Seagrass areas are accessible to a variety of avian species (shorebirds, wading birds, raptors) that utilize seagrass beds as foraging habitat. Nearby residences and roadways (SR 789) may deter larger terrestrial mammalian wildlife from accessing the forested mangrove swamps and surface waters adjacent to the seagrass beds. Boaters traveling through Longboat Pass and Sarasota Bay may pose a threat to the West Indian Manatee, which uses seagrass beds as their main food source. Additionally, water levels in the lagoon area and the flushing channel become extremely shallow during low tide events, potentially stranding manatees. These low water levels may help deter boaters from entering the lagoon and negatively impacting the seagrass bed habitat.** **<u>Proposed construction:</u> Score slightly downgraded due to new bridge structure overhead. Anticipate permanent shading impacts (minor due to north-south alignment) and temporary construction impacts to the bottom for piling placements.**
.500(6)(b) Water Environment (n/a for uplands)	8	8	**The seagrass patches are found within a shallow tidal lagoon (Greer Island Lagoon), estuarine surface water system, that is hydrologically connected to the Gulf of Mexico. There is a flushing channel at the northeast side of the lagoon, which connects the lagoon to Sarasota Bay, and ultimately to the Gulf of Mexico. The lagoon receives tidal waters through a shallow flushing channel, on the northeast side of the lagoon. Water quality appears to be in good condition as there is a steady water flow during and between tidal events. This channel is the sole drainage pathway where water flows in and out of the lagoon to the Gulf of Mexico. The lagoon would be impounded without this channel. Water quality is only marginally downgraded due to residential and commercial development along the southern coastline that abut the lagoon. The bay receives stormwater runoff from the existing bridge (SR 789) and nearby roadways.** **<u>Proposed construction</u>: New bridge structure anticipated to include stormwater treatment, as opposed to the current scuppers on the existing bridge that drain stormwater directly below the bridge, to have marginal lift on water quality within the system.**
.500(6)(c) Community Structure ___ Vegetation X Benthic ___ Both	6	3	**Seagrass beds are comprised of turtle grass (*Thalassia testudinum*) and shoal grass (*Halodule wrightii*). Seagrass beds were sparse, discontinuous and patchy.** **<u>Proposed construction:</u> The two (2) discontinuous seagrass patches present adjacent to the footprint of the proposed overhead bridge structure may be impacted by the shading from the new bridge; however, the two (2) patches adjacent to the east of the existing bridge may be improved by the removal of the existing bridge structure by eliminating shading. Anticipate permanent shading impacts (minor due to north-south alignment) and temporary construction impacts to the bottom for piling placements and/or the existing bridge structure removal. Sources for seagrass natural recruitment anticipated to persist in the lagoon post-construction.**

Raw Score = Sum of above scores/30 (if uplands, divide by 20)	Current	With Impact
	0.73	0.57

Impact Delta (ID)	
Current - w/Impact	0.16

Impact Acres =	0.10

Functional Loss (FL) [For Impact Assessment Areas]:	
FL = ID x Impact Acres =	0.02

UNIFORM WETLAND MITIGATION ASSESSMENT WORKSHEET - PART I - IMPACT
Form 62-345.900(2), F.A.C. (See Sections 62-345.400 F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 789 PD&E from N Shore Rd to Coquina Park Entrance	**N/A**	**Seagrass Continuous (CS-1)**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
9116 - Seagrass	**Seagrass Dense / E1AB3L**	**Impact**	**0.37 Acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Sarasota Bay	**Class II**	**Outstanding Florida Waters (OFW) - Sarasota Bay Estuarine System**

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

Seagrass beds present within the shallow Greer Island Lagoon which is connected to Sarasota Bay and the Gulf of Mexico through a flushing channel in the northeast section of the lagoon running under the southern end of the existing SR 789 bridge. This flushing channel the only avenue to which waters can flow in and out from Sarasota Bay and eventually to the marine waters of the Gulf of Mexico. Seagrass beds are located in various areas within the lagoon, ranging from sparse and patchy, to continuous and dense. Forested mangrove swamps are present along the shoreline of the lagoon.

Assessment area description

A dense seagrass bed located within the tidal lagoon system in the southern portion of the project area. The seagrass bed is comprised of dense turtle grass (*Thalassia testudinum*) and shoal grass (*Halodule wrightii*). Seagrasses around the edge of this bed appeared to have more notable epiphyte coverage than the seagrass within the middle of the bed; this epiphyte coverage may have been due to the lagoon's semi-impoundment prior to the recent (September 2023) dredge operations that re-opened this flushing channel and improved water quality conditions.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
Gulf of Mexico, Sarasota Bay, Palma Sola Bay, Longboat Pass, Longboat Pass Bridge, SR 789	**Not unique**
Functions	Mitigation for previous permit/other historic use
Carbon sequestering, essential fish habitat, water quality improvement, nesting, sheltering, foraging habitat for a variety of aquatic species. Provide habitat to a variety of aquatic species in various stages of their life cycle.	**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 (FE, FT, FT (S/A), FXN, ST, SSC), type of use, and intensity of use of the assessment area)
Seagrass beds support various life cycle stages and provide habitat for feeding and spawning for many invertebrate and fish species. (Penaeid shrimp, red drum, snapper, grouper, grunts, tarpon, snook, crustaceans, sharks). Seagrass beds also provide feeding habitat for sea turtles and manatees. The assessment area also provides shoreline foraging habitat for a variety of avian species including shorebirds and wading birds.	**West Indian manatee (FT), American oystercatcher (ST), black skimmer (ST), least tern (ST), little blue heron (ST), piping plover (FT), roseate spoonbill (ST), roseate tern (FT), rufa red knot (FT), snowy plover (ST), tricolored heron (ST), wood stork (FT), loggerhead sea turtle (FT), green sea turtle (FT), Kemp Ridley's sea turtle (FE), hawksbill sea turtle (FE), leatherback sea turtle (FE)**

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

Juvenile and adult fishes including prey species and estuarine predators [e.g. snook *(Centropomus undecimalis)*]; juvenile species from the snapper-grouper complex [e.g. Mangrove snapper (*Lutjanus griseus*)]; crustaceans [e.g.stone crab (*Menippe mercenaria*)]; various other fish species [e.g. scorpion fish (*Scorpaena plumieri*) and checkered pufferfish (*Sphoeroides testudineus*)]

Additional relevant factors:

Great blue heron (sight), white ibis (sight), laughing gull (sight), snook (sight), great pelican (sight), osprey (sight), dolphin (sight), snowy egret (sight), West Indian manatee (sight, foraging in lagoon), least tern (sight), mullet (sight), little blue heron (sight), blue crab (sight), limpkin (sight)

Assessment conducted by:	Assessment date(s):
George Burke and Alex Hipolito	**09/18/23**

UNIFORM WETLAND MITIGATION ASSESSMENT WORKSHEET - PART II - IMPACT
Form 62-345.900(2), F.A.C. (See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name:	Application Number:	Assessment Area Name or Number:
SR 789 PD&E from N Shore Rd to Coquina Park Entrance	**N/A**	**Seagrass Continuous (CS-1)**
Impact or Mitigation:	Assessment Conducted by:	Assessment Date:
Impact	**George Burke and Alex Hipolito**	**09/18/23**

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

.500(6)(a) Location and Landscape Support	Current	With Impact
	8	6

The continuous seagrass bed is located in a small tidal lagoon (Greer Island Lagoon) at the southern end of the project area. The seagrass beds are within estuarine waters that are hydrologically connected to the Gulf of Mexico. There is flushing channel at the northeast side of the lagoon, which connects the lagoon to Sarasota Bay, and eventually to the Gulf of Mexico. This hydrological connectivity allows a variety of aquatic species to move through the brackish/estuarine water systems to a marine environment in the Gulf of Mexico. Seagrass areas are accessible to a variety of avian species (shorebirds, wading birds, raptors) that utilize seagrass beds as foraging habitat. Nearby residential areas and roadways (SR 789) may deter large terrestrial mammalian wildlife from accessing the forested mangrove swamps and surface waters adjacent to the seagrass beds. Boaters traveling through Longboat Pass and Sarasota Bay may pose a threat to the West Indian Manatee, which uses seagrass beds as their main food source. Additionally, water levels in the lagoon area and the flushing channel become extremely shallow during low tide events, potentially stranding manatees. These low water levels may help deter boaters from entering the lagoon and negatively impacting the seagrass bed habitat.

<u>Proposed construction:</u> Score is downgraded due to new bridge structure proposed directly overtop the eastern extent of this bed. Anticipate permanent shading impacts (minor due to north-south alignment) and construction impacts to the bottom for piling placements.

.500(6)(b) Water Environment (n/a for uplands)	Current	With Impact
	8	8

The seagrass beds are within the tidally influenced Greer Island Lagoon, estuarine surface water system, that is hydrologically connected to the Gulf of Mexico. There is flushing channel at the northeast side of the lagoon, which connects the lagoon to Sarasota Bay, and ultimately to the Gulf of Mexico. The lagoon receives tidal waters through a shallow flushing channel, on the northeast side of the lagoon. Water quality appears to be in good condition as there is a steady water flow during and between tidal events. This channel is the sole drainage pathway where water flows in and out of the lagoon to the Gulf of Mexico. The lagoon would be impounded without this channel. Water quality is only marginally downgraded due to residential and commercial development along the southern coastline that abut the lagoon. The bay receives stormwater runoff from the existing bridge (SR 789) and nearby roadways.

<u>Proposed construction:</u> New bridge structure anticipated to include stormwater treatment, as opposed to the current scuppers on the existing bridge that drain stormwater directly below the bridge, to have marginal lift on water quality within the system.

.500(6)(c) Community Structure	Current	With Impact
____ Vegetation ____ Benthic X Both	8	1

Seagrass beds are comprised of turtle grass (*Thalassia testudinum*) and shoal grass (*Halodule wrightii*). Seagrass beds were dense and appear in good condition. Seagrasses around the edge of this bed appeared to have more notable epiphyte coverage than the seagrass within the middle of the bed: this epiphyte coverage may be due to the lagoon's semi-impoundment prior to the recent (September 2023) dredge operations that re-opened this flushing channel and improved water quality conditions.

<u>Proposed construction</u>: Seagrass beds present below and adjacent to the footprint of the proposed overhead bridge structure may be impacted by the shadow of the new bridge and bottom impacts during bridge construction. Anticipate permanent shading impacts (minor due to north-south alignment) and construction impacts to the bottom for piling placements. Seagrasses still anticipated to persist and be present beyond the impact area which will provide for natural recruitment for bed recovery post construction. Sources for seagrass natural recruitment/recovery anticipated to persist in the lagoon post-construction.

Raw Score = Sum of above scores/30 (if uplands, divide by 20)	Current	With Impact
	0.80	0.50

Impact Delta (ID)	
Current - w/Impact	0.30

Impact Acres =	0.20

Functional Loss (FL) [For Impact Assessment Areas]:	
FL = ID x Impact Acres =	0.06

Appendix O: Representative Photographs

Photo 1: View facing southeast of the bridge from Coquina Beach Park.

Photo 2: View facing northeast of the underside of the bridge.

Photo 3: View facing northeast of the bridge touchdown point from Coquina Beach Park. A loggerhead sea turtle (Caretta caretta) nest can be seen in the foreground.

Photo 4: View facing north of the underside of the bridge on Coquina Beach Park. Bat guano staining is visible.

Photo 5: View facing south under the bridge on Greer Island. Bat exclusionary devices are visible in the crevice.

Photo 6: View facing north under the bridge on Greer Island. Bat exclusionary devices are visible in the crevice.

Photo 7: View facing south of the bridge from the east side of Coquina Beach Park.

Photo 8: View facing northeast of the touchdown point on Greer Island.

Photo 9: View facing northwest of the touchdown point on Greer Island.

Photo 10: View facing west of the bridge from the easternmost point of Greer Island.

Photo 11: View facing southwest of a bridge piling from underneath the bridge on Greer Island.

Photo 12: View facing north of the bridge and the adjacent vegetation.

Photo 13: View facing south of the bridge. Longboat Key is visible in the background.

Photo 14: View facing north of the bridge. Greer Island is visible beneath the bridge. Coquina Beach Park is visible in the background.

Photo 15: An aerial view of the vegetative community on the west side of the bridge on Greer Island.

Photo 16: View facing north of the vegetative community present on Greer Island on the west side of the bridge.

Photo 17: View facing south of the vegetative community present on Greer Island on the west side of the bridge.

Photo 18: View facing northwest of the dunes adjacent to the west side of the bridge on Greer Island.

Photo 19: View facing southeast of the dune community on the east side of the bridge. Longboat Key is visible in the background.

Photo 20: View facing southeast of Longboat key.

Appendix P: UMAM Datasheets

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

Site/Project Name	Application Number	Assessment Area Name or Number
SR 789 PD&E from N Shore Rd to Coquina Park Entrance	N/A	Mangroves (WL-1, WL-2, WL-3, WL-4, WL-5, WL-6)

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
6120: Mangrove Swamp		Impact	Varies

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
8050,1968B	Sarasota Bay (3M,2)	Special Classification (OFW)

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

The area surrounding the Mangroves is known as Sarasota Bay and directly feeds to the Gulf of Mexico. A lagoon is located interior to Greer Island with dunes, seagrasses, and mangroves.

Assessment area description

Land use along the majority of the corridor is dominated by Sarasota Bay and associated recreational shorelines. Sensative habitats are present under and adjacent to the bridge ; sand dunes, seagrass beds, mangrive fringes and beaches.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
Seagrass beds, Mangrove restoration areas, Dunes restoration areas	Sensitive coastal area, Many other Gulf inlets along coast.

Functions	Mitigation for previous permit/other historic use
Nursery, Shore Stabilization, improve water quality, Storm buffer	

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)
Loggerhead, Green, Leatherback, Hawksbill, Kemp's Ridley (Sea Turtles) Manatee, American Crocodile, Shore birds	Sea Turtles > nesting (T and E) Shore Birds > nesting (T) Wood stork > foraging

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

Various Sea Turtles Nest Shore Birds White ibis Great Blue Heron Frigate Bird

Additional relevant factors:

Greer Island and Coquina Beach Park are used highly for recreational purposes.

Assessment conducted by:	Assessment date(s):
Rodolfo Heredia	6/25/2025

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

Site/Project Name	Application Number	Assessment Area Name or Number
SR 789 PD&E from N Shore Rd to Coquina Park Entrance	N/A	Mangroves (WL-1, WL-2, WL-3, WL-4, WL-5, WL-6)
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Direct Impact (Piling Installation & Shading)	Rodolfo Heredia	6/25/2025

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

		w/o pres or current	with
.500(6)(a) Location and Landscape Support	The area is associated with a large network of coastal habitats including mangroves, tidal creeks, and barrier islands of Sarasota Bay and the Gulf coast. The surrounding landscape provides important ecological support supplying freshwater inflows, organic material, and wildlife corridors. Adjacent uplands and wetlands contribute to the overall function of the bay by filtering runoff and buffering against storm impacts. Value enhanced as a nursery and feeding ground.	9	4
.500(6)(b)Water Environment (n/a for uplands)	Shallow estuarine system with moderate salinity and good tidal exchange, supporting diverse aquatic life and essential ecological functions. Water clarity is generally good due to varying seagrass coverage, through localized nutrient inputs from urban runoff can impact quality. Overall, the water environment supports healthy dissolved oxygen levels and plays a key role in the bay's biological properties.	9	4
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	The community structure of lagoon interior to Greer Island includes Mangrove fringes of Black Mangroves (*Avicennia germinans*) and diverse seagrass beds of Turtlegrass (*Thalassia festudinum*), and Shoalgrass (*Halodule wrightii*) directly adjacent and submerged at the shore.	8	4

Score = sum of above scores/30 (if uplands, divide by 20)		
current or w/o pres	with	
0.86667	0.4	

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

For impact assessment areas
FL = delta x acres =

Delta = [with-current]
-0.466666667

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 Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 789 PD&E from N Shore Rd to Coquina Park Entrance	N/A	Mangroves (WL-1, WL-2, WL-3, WL-4, WL-5, WL-6)
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Secondary Impact	Rodolfo Heredia	6/25/2025

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

		w/o pres or current	with
.500(6)(a) Location and Landscape Support	The area is associated with a large network of coastal habitats including mangroves, tidal creeks, and barrier islands of Sarasota Bay and the Gulf coast. The surrounding landscape provides important ecological support supplying freshwater inflows, organic material, and wildlife corridors. Adjacent uplands and wetlands contribute to the overall function of the bay by filtering runoff and buffering against storm impacts. Value enhanced as a nursery and feeding ground.	9	7
.500(6)(b)Water Environment (n/a for uplands)	Shallow estuarine system with moderate salinity and good tidal exchange, supporting diverse aquatic life and essential ecological functions. Water clarity is generally good due to varying seagrass coverage, through localized nutrient inputs from urban runoff can impact quality. Overall, the water environment supports healthy dissolved oxygen levels and plays a key role in the bay's biological properties.	9	9
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	The community structure of lagoon interior to Greer Island includes Mangrove fringes of Black Mangroves (*Avicennia germinans*) and diverse seagrass beds of Turtlegrass (*Thalassia festudinum*), and Shoalgrass (*Halodule wrightii*) directly adjacent and submerged at the shore.	8	5

Score = sum of above scores/30 (if uplands, divide by 20)		
current or w/o pres	with	
0.86667	0.7	

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

For impact assessment areas
FL = delta x acres =

Delta = [with-current]
-0.166666667

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

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

UNIFORM WETLAND MITIGATION ASSESSMENT WORKSHEET - PART I - IMPACT
Form 62-345.900(2), F.A.C. (See Sections 62-345.400 F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 789 PD&E from N Shore Rd to Coquina Park Entrance	**N/A**	**Seagrass Patchy-Discontinuous (DS-1, DS-2, DS-3 and DS-4)**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
9113 - Seagrass	**Seagrass Patchy / E1AB3L**	**Impact**	**0.20** Acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Sarasota Bay	**Class II**	**Outstanding Florida Waters (OFW) - Sarasota Bay Estuarine System**

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

Seagrass beds present within the shallow Greer Island Lagoon which is connected to Sarasota Bay and the Gulf of Mexico through a flushing channel in the northeast section of the lagoon running under the southern end of the existing SR 789 bridge. This flushing channel the only avenue to which waters can flow in and out of this lagoon and eventually to the marine waters of the Gulf of Mexico. Seagrass beds are located in various areas within the lagoon, ranging from sparse and patchy, to continuous and dense. Forested mangrove swamps are present along the shoreline of the lagoon.

Assessment area description

Several patchy, discontinuous areas of seagrass habitat are located within the tidal lagoon system in the southern portion of the project area. The two (2) patchy seagrass areas to the west of the existing bridge are comprised of sparse assemblages of turtle grass (*Thalassia testudinum*) and shoal grass (*Halodule wrightii*), and the two (2) seagrass patches to the east of the bridge consist of only sparse shoal grass.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
Gulf of Mexico, Sarasota Bay, Palma Sola Bay, Longboat Pass, Longboat Pass Bridge, SR 789	**Not unique**
Functions **Carbon sequestering, essential fish habitat, water quality improvement, nesting, sheltering, foraging habitat for a variety of aquatic species. Provide habitat to a variety of aquatic species in various stages of their life cycle.**	Mitigation for previous permit/other historic use **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) **Seagrass beds support various life cycle stages and provide habitat for feeding and spawning for many invertebrate and fish species. (Penaeid shrimp, red drum, snapper, grouper, grunts, tarpon, snook, crustaceans, sharks). Seagrass beds also provide feeding habitat for sea turtles and manatees. The assessment area also provides shoreline foraging habitat for a variety of avian species including shorebirds and wading birds.**	Anticipated Utilization by Listed Species (List species, their legal classification (FE, FT, FT (S/A), FXN, ST, SSC), type of use, and intensity of use of the assessment area) **West Indian manatee (FT), American oystercatcher (ST), black skimmer (ST), least tern (ST), little blue heron (ST), piping plover (FT), roseate spoonbill (ST), roseate tern (FT), rufa red knot (FT), snowy plover (ST), tricolored heron (ST), wood stork (FT), loggerhead sea turtle (FT), green sea turtle (FT), Kemp Ridley's sea turtle (FE), hawksbill sea turtle (FE), leatherback sea turtle (FE)**

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

Great blue heron (sight), white ibis (sight), laughing gull (sight), snook (sight), great pelican (sight), osprey (sight), dolphin (sight), snowy egret (sight), West Indian manatee (sight, foraging in lagoon), least tern (sight), mullet (sight), little blue heron (sight), blue crab (sight), limpkin (sight)

Additional relevant factors:

The entrance channel to this shallow lagoon has recently been dredged (2023) as it was backfilling with sand washed in from the Gulf of Mexico. If this channel becomes compromised, lagoon conditions would deteriorate from lack of water flushing.

Assessment conducted by:	Assessment date(s):
George Burke and Alex Hipolito	**09/18/23**

UNIFORM WETLAND MITIGATION ASSESSMENT WORKSHEET - PART II - IMPACT
Form 62-345.900(2), F.A.C. (See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name:	Application Number:	Assessment Area Name or Number:
SR 789 PD&E from N Shore Rd to Coquina Park Entrance	**N/A**	**Seagrass Patchy-Discontinuous (DS-1, DS-2, DS-3 and DS-4)**
Impact or Mitigation:	Assessment Conducted by:	Assessment Date:
Direct Impact (Piling Installation & Shading)	**George Burke and Alex Hipolito**	**09/18/23**

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

.500(6)(a) Location and Landscape Support

Current	With Impact
8	6

These patchy seagrass beds are located in the small tidally influenced Greer Island Lagoon at the southern end of the project area. The seagrass beds are within estuarine waters that are hydrologically connected to the Gulf of Mexico through the Sarasota Bay. There is a flushing channel at the northeast side of the lagoon, which connects the lagoon to Sarasota Bay, and eventually to the Gulf of Mexico. This hydrological connectivity allows a variety of aquatic species to move through the brackish/estuarine water systems to a marine environment in the Gulf of Mexico. Seagrass areas are accessible to a variety of avian species (shorebirds, wading birds, raptors) that utilize seagrass beds as foraging habitat. Nearby residences and roadways (SR 789) may deter larger terrestrial mammalian wildlife from accessing the forested mangrove swamps and surface waters adjacent to the seagrass beds. Boaters traveling through Longboat Pass and Sarasota Bay may pose a threat to the West Indian Manatee, which uses seagrass beds as their main food source. Additionally, water levels in the lagoon area and the flushing channel become extremely shallow during low tide events, potentially stranding manatees. These low water levels may help deter boaters from entering the lagoon and negatively impacting the seagrass bed habitat.

<u>Proposed construction:</u> Score slightly downgraded due to new bridge structure overhead. Anticipate permanent shading impacts (minor due to north-south alignment) and temporary construction impacts to the bottom for piling placements.

.500(6)(b) Water Environment (n/a for uplands)

Current	With Impact
8	8

The seagrass patches are found within a shallow tidal lagoon (Greer Island Lagoon), estuarine surface water system, that is hydrologically connected to the Gulf of Mexico. There is a flushing channel at the northeast side of the lagoon, which connects the lagoon to Sarasota Bay, and ultimately to the Gulf of Mexico. The lagoon receives tidal waters through a shallow flushing channel, on the northeast side of the lagoon. Water quality appears to be in good condition as there is a steady water flow during and between tidal events. This channel is the sole drainage pathway where water flows in and out of the lagoon to the Gulf of Mexico. The lagoon would be impounded without this channel. Water quality is only marginally downgraded due to residential and commercial development along the southern coastline that abut the lagoon. The bay receives stormwater runoff from the existing bridge (SR 789) and nearby roadways.

<u>Proposed construction</u>: New bridge structure anticipated to include stormwater treatment, as opposed to the current scuppers on the existing bridge that drain stormwater directly below the bridge, to have marginal lift on water quality within the system.

.500(6)(c) Community Structure

____ Vegetation
X Benthic
____ Both

Current	With Impact
6	3

Seagrass beds are comprised of turtle grass (*Thalassia testudinum*) and shoal grass (*Halodule wrightii*). Seagrass beds were sparse, discontinuous and patchy.

<u>Proposed construction:</u> The two (2) discontinuous seagrass patches present adjacent to the footprint of the proposed overhead bridge structure may be impacted by the shading from the new bridge; however, the two (2) patches adjacent to the east of the existing bridge may be improved by the removal of the existing bridge structure by eliminating shading. Anticipate permanent shading impacts (minor due to north-south alignment) and temporary construction impacts to the bottom for piling placements and/or the existing bridge structure removal. Sources for seagrass natural recruitment anticipated to persist in the lagoon post-construction.

Raw Score = Sum of above scores/30 (if uplands, divide by 20)

Current	With Impact
0.73	0.57

Impact Delta (ID)	
Current - w/Impact	0.16

Impact Acres =	0.10

Functional Loss (FL) [For Impact Assessment Areas]:

FL = ID x Impact Acres =	0.02

UNIFORM WETLAND MITIGATION ASSESSMENT WORKSHEET - PART II - IMPACT
Form 62-345.900(2), F.A.C. (See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name:	Application Number:	Assessment Area Name or Number:
SR 789 PD&E from N Shore Rd to Coquina Park Entrance	**N/A**	**Seagrass Patchy-Discontinuous (DS-1, DS-2, DS-3 and DS-4)**
Impact or Mitigation:	Assessment Conducted by:	Assessment Date:
Secondary Impact	**George Burke and Alex Hipolito**	**09/18/23**

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

	Current	With Impact	
.500(6)(a) Location and Landscape Support	8	7	**These patchy seagrass beds are located in the small tidally influenced Greer Island Lagoon at the southern end of the project area. The seagrass beds are within estuarine waters that are hydrologically connected to the Gulf of Mexico through the Sarasota Bay. There is a flushing channel at the northeast side of the lagoon, which connects the lagoon to Sarasota Bay, and eventually to the Gulf of Mexico. This hydrological connectivity allows a variety of aquatic species to move through the brackish/estuarine water systems to a marine environment in the Gulf of Mexico. Seagrass areas are accessible to a variety of avian species (shorebirds, wading birds, raptors) that utilize seagrass beds as foraging habitat. Nearby residences and roadways (SR 789) may deter larger terrestrial mammalian wildlife from accessing the forested mangrove swamps and surface waters adjacent to the seagrass beds. Boaters traveling through Longboat Pass and Sarasota Bay may pose a threat to the West Indian Manatee, which uses seagrass beds as their main food source. Additionally, water levels in the lagoon area and the flushing channel become extremely shallow during low tide events, potentially stranding manatees. These low water levels may help deter boaters from entering the lagoon and negatively impacting the seagrass bed habitat.** **<u>Proposed construction:</u> Score slightly downgraded due to new bridge structure overhead. Anticipate permanent shading impacts (minor due to north-south alignment) and temporary construction impacts to the bottom for piling placements.**
.500(6)(b) Water Environment (n/a for uplands)	8	8	**The seagrass patches are found within a shallow tidal lagoon (Greer Island Lagoon), estuarine surface water system, that is hydrologically connected to the Gulf of Mexico. There is a flushing channel at the northeast side of the lagoon, which connects the lagoon to Sarasota Bay, and ultimately to the Gulf of Mexico. The lagoon receives tidal waters through a shallow flushing channel, on the northeast side of the lagoon. Water quality appears to be in good condition as there is a steady water flow during and between tidal events. This channel is the sole drainage pathway where water flows in and out of the lagoon to the Gulf of Mexico. The lagoon would be impounded without this channel. Water quality is only marginally downgraded due to residential and commercial development along the southern coastline that abut the lagoon. The bay receives stormwater runoff from the existing bridge (SR 789) and nearby roadways.** **<u>Proposed construction</u>: New bridge structure anticipated to include stormwater treatment, as opposed to the current scuppers on the existing bridge that drain stormwater directly below the bridge, to have marginal lift on water quality within the system.**
.500(6)(c) Community Structure ___ Vegetation X Benthic ___ Both	6	6	**Seagrass beds are comprised of turtle grass (*Thalassia testudinum*) and shoal grass (*Halodule wrightii*). Seagrass beds were sparse, discontinuous and patchy.** **<u>Proposed construction:</u> The two (2) discontinuous seagrass patches present adjacent to the footprint of the proposed overhead bridge structure may be impacted by the shading from the new bridge; however, the two (2) patches adjacent to the east of the existing bridge may be improved by the removal of the existing bridge structure by eliminating shading. Anticipate permanent shading impacts (minor due to north-south alignment) and temporary construction impacts to the bottom for piling placements and/or the existing bridge structure removal. Sources for seagrass natural recruitment anticipated to persist in the lagoon post-construction.**

Raw Score = Sum of above scores/30 (if uplands, divide by 20)	Current	With Impact
	0.73	0.70

Impact Delta (ID)	
Current - w/Impact	0.03

Secondary Impact Acres =	0.00

Functional Loss (FL) [For Impact Assessment Areas]:	
FL = ID x Impact Acres =	0.00

UNIFORM WETLAND MITIGATION ASSESSMENT WORKSHEET - PART I - IMPACT
Form 62-345.900(2), F.A.C. (See Sections 62-345.400 F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 789 PD&E from N Shore Rd to Coquina Park Entrance	**N/A**	**Seagrass Continuous (CS-1)**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
9116 - Seagrass	**Seagrass Dense / E1AB3L**	**Impact**	**0.37 Acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Sarasota Bay	**Class II**	**Outstanding Florida Waters (OFW) - Sarasota Bay Estuarine System**

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

Seagrass beds present within the shallow Greer Island Lagoon which is connected to Sarasota Bay and the Gulf of Mexico through a flushing channel in the northeast section of the lagoon running under the southern end of the existing SR 789 bridge. This flushing channel the only avenue to which waters can flow in and out from Sarasota Bay and eventually to the marine waters of the Gulf of Mexico. Seagrass beds are located in various areas within the lagoon, ranging from sparse and patchy, to continuous and dense. Forested mangrove swamps are present along the shoreline of the lagoon.

Assessment area description

A dense seagrass bed located within the tidal lagoon system in the southern portion of the project area. The seagrass bed is comprised of dense turtle grass (*Thalassia testudinum*) and shoal grass (*Halodule wrightii*). Seagrasses around the edge of this bed appeared to have more notable epiphyte coverage than the seagrass within the middle of the bed; this epiphyte coverage may have been due to the lagoon's semi-impoundment prior to the recent (September 2023) dredge operations that re-opened this flushing channel and improved water quality conditions.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
Gulf of Mexico, Sarasota Bay, Palma Sola Bay, Longboat Pass, Longboat Pass Bridge, SR 789	**Not unique**
Functions	Mitigation for previous permit/other historic use
Carbon sequestering, essential fish habitat, water quality improvement, nesting, sheltering, foraging habitat for a variety of aquatic species. Provide habitat to a variety of aquatic species in various stages of their life cycle.	**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 (FE, FT, FT (S/A), FXN, ST, SSC), type of use, and intensity of use of the assessment area)
Seagrass beds support various life cycle stages and provide habitat for feeding and spawning for many invertebrate and fish species. (Penaeid shrimp, red drum, snapper, grouper, grunts, tarpon, snook, crustaceans, sharks). Seagrass beds also provide feeding habitat for sea turtles and manatees. The assessment area also provides shoreline foraging habitat for a variety of avian species including shorebirds and wading birds.	**West Indian manatee (FT), American oystercatcher (ST), black skimmer (ST), least tern (ST), little blue heron (ST), piping plover (FT), roseate spoonbill (ST), roseate tern (FT), rufa red knot (FT), snowy plover (ST), tricolored heron (ST), wood stork (FT), loggerhead sea turtle (FT), green sea turtle (FT), Kemp Ridley's sea turtle (FE), hawksbill sea turtle (FE), leatherback sea turtle (FE)**

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

Juvenile and adult fishes including prey species and estuarine predators [e.g. snook *(Centropomus undecimalis)*]; juvenile species from the snapper-grouper complex [e.g. Mangrove snapper (*Lutjanus griseus*)]; crustaceans [e.g.stone crab (*Menippe mercenaria*)]; various other fish species [e.g. scorpion fish (*Scorpaena plumieri*) and checkered pufferfish (*Sphoeroides testudineus*)]

Additional relevant factors:

Great blue heron (sight), white ibis (sight), laughing gull (sight), snook (sight), great pelican (sight), osprey (sight), dolphin (sight), snowy egret (sight), West Indian manatee (sight, foraging in lagoon), least tern (sight), mullet (sight), little blue heron (sight), blue crab (sight), limpkin (sight)

Assessment conducted by:	Assessment date(s):
George Burke and Alex Hipolito	**09/18/23**

UNIFORM WETLAND MITIGATION ASSESSMENT WORKSHEET - PART II - IMPACT
Form 62-345.900(2), F.A.C. (See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name:	Application Number:	Assessment Area Name or Number:
SR 789 PD&E from N Shore Rd to Coquina Park Entrance	**N/A**	**Seagrass Continuous (CS-1)**
Impact or Mitigation:	Assessment Conducted by:	Assessment Date:
Direct Impact (Piling Installation and Shading)	**George Burke and Alex Hipolito**	**09/18/23**

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

.500(6)(a) Location and Landscape Support	Current	With Impact
	8	6

The continuous seagrass bed is located in a small tidal lagoon (Greer Island Lagoon) at the southern end of the project area. The seagrass beds are within estuarine waters that are hydrologically connected to the Gulf of Mexico. There is flushing channel at the northeast side of the lagoon, which connects the lagoon to Sarasota Bay, and eventually to the Gulf of Mexico. This hydrological connectivity allows a variety of aquatic species to move through the brackish/estuarine water systems to a marine environment in the Gulf of Mexico. Seagrass areas are accessible to a variety of avian species (shorebirds, wading birds, raptors) that utilize seagrass beds as foraging habitat. Nearby residential areas and roadways (SR 789) may deter large terrestrial mammalian wildlife from accessing the forested mangrove swamps and surface waters adjacent to the seagrass beds. Boaters traveling through Longboat Pass and Sarasota Bay may pose a threat to the West Indian Manatee, which uses seagrass beds as their main food source. Additionally, water levels in the lagoon area and the flushing channel become extremely shallow during low tide events, potentially stranding manatees. These low water levels may help deter boaters from entering the lagoon and negatively impacting the seagrass bed habitat.

<u>Proposed construction:</u> Score is downgraded due to new bridge structure proposed directly overtop the eastern extent of this bed. Anticipate permanent shading impacts (minor due to north-south alignment) and construction impacts to the bottom for piling placements.

.500(6)(b) Water Environment (n/a for uplands)	Current	With Impact
	8	8

The seagrass beds are within the tidally influenced Greer Island Lagoon, estuarine surface water system, that is hydrologically connected to the Gulf of Mexico. There is flushing channel at the northeast side of the lagoon, which connects the lagoon to Sarasota Bay, and ultimately to the Gulf of Mexico. The lagoon receives tidal waters through a shallow flushing channel, on the northeast side of the lagoon. Water quality appears to be in good condition as there is a steady water flow during and between tidal events. This channel is the sole drainage pathway where water flows in and out of the lagoon to the Gulf of Mexico. The lagoon would be impounded without this channel. Water quality is only marginally downgraded due to residential and commercial development along the southern coastline that abut the lagoon. The bay receives stormwater runoff from the existing bridge (SR 789) and nearby roadways.

<u>Proposed construction:</u> New bridge structure anticipated to include stormwater treatment, as opposed to the current scuppers on the existing bridge that drain stormwater directly below the bridge, to have marginal lift on water quality within the system.

.500(6)(c) Community Structure	Current	With Impact
____ Vegetation ____ Benthic X Both	8	1

Seagrass beds are comprised of turtle grass (*Thalassia testudinum*) and shoal grass (*Halodule wrightii*). Seagrass beds were dense and appear in good condition. Seagrasses around the edge of this bed appeared to have more notable epiphyte coverage than the seagrass within the middle of the bed: this epiphyte coverage may be due to the lagoon's semi-impoundment prior to the recent (September 2023) dredge operations that re-opened this flushing channel and improved water quality conditions.

<u>Proposed construction</u>: Seagrass beds present below and adjacent to the footprint of the proposed overhead bridge structure may be impacted by the shadow of the new bridge and bottom impacts during bridge construction. Anticipate permanent shading impacts (minor due to north-south alignment) and construction impacts to the bottom for piling placements. Seagrasses still anticipated to persist and be present beyond the impact area which will provide for natural recruitment for bed recovery post construction. Sources for seagrass natural recruitment/recovery anticipated to persist in the lagoon post-construction.

Raw Score = Sum of above scores/30 (if uplands, divide by 20)	Current	With Impact
	0.80	0.50

Impact Delta (ID)	
Current - w/Impact	0.30

Impact Acres =	0.20

Functional Loss (FL) [For Impact Assessment Areas]:	
FL = ID x Impact Acres =	0.06

UNIFORM WETLAND MITIGATION ASSESSMENT WORKSHEET - PART II - IMPACT
Form 62-345.900(2), F.A.C. (See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name:	Application Number:	Assessment Area Name or Number:
SR 789 PD&E from N Shore Rd to Coquina Park Entrance	**N/A**	**Seagrass Continuous (CS-1)**
Impact or Mitigation:	Assessment Conducted by:	Assessment Date:
Secondary Impact	**George Burke and Alex Hipolito**	**09/18/23**

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

	Current	With Impact
.500(6)(a) Location and Landscape Support	8	7

The continuous seagrass bed is located in a small tidal lagoon (Greer Island Lagoon) at the southern end of the project area. The seagrass beds are within estuarine waters that are hydrologically connected to the Gulf of Mexico. There is flushing channel at the northeast side of the lagoon, which connects the lagoon to Sarasota Bay, and eventually to the Gulf of Mexico. This hydrological connectivity allows a variety of aquatic species to move through the brackish/estuarine water systems to a marine environment in the Gulf of Mexico. Seagrass areas are accessible to a variety of avian species (shorebirds, wading birds, raptors) that utilize seagrass beds as foraging habitat. Nearby residential areas and roadways (SR 789) may deter large terrestrial mammalian wildlife from accessing the forested mangrove swamps and surface waters adjacent to the seagrass beds. Boaters traveling through Longboat Pass and Sarasota Bay may pose a threat to the West Indian Manatee, which uses seagrass beds as their main food source. Additionally, water levels in the lagoon area and the flushing channel become extremely shallow during low tide events, potentially stranding manatees. These low water levels may help deter boaters from entering the lagoon and negatively impacting the seagrass bed habitat.

<u>Proposed construction:</u> Score is downgraded due to new bridge structure proposed directly overtop the eastern extent of this bed. Anticipate permanent shading impacts (minor due to north-south alignment) and construction impacts to the bottom for piling placements.

	Current	With Impact
.500(6)(b) Water Environment (n/a for uplands)	8	8

The seagrass beds are within the tidally influenced Greer Island Lagoon, estuarine surface water system, that is hydrologically connected to the Gulf of Mexico. There is flushing channel at the northeast side of the lagoon, which connects the lagoon to Sarasota Bay, and ultimately to the Gulf of Mexico. The lagoon receives tidal waters through a shallow flushing channel, on the northeast side of the lagoon. Water quality appears to be in good condition as there is a steady water flow during and between tidal events. This channel is the sole drainage pathway where water flows in and out of the lagoon to the Gulf of Mexico. The lagoon would be impounded without this channel. Water quality is only marginally downgraded due to residential and commercial development along the southern coastline that abut the lagoon. The bay receives stormwater runoff from the existing bridge (SR 789) and nearby roadways.

<u>Proposed construction:</u> New bridge structure anticipated to include stormwater treatment, as opposed to the current scuppers on the existing bridge that drain stormwater directly below the bridge, to have marginal lift on water quality within the system.

	Current	With Impact
.500(6)(c) Community Structure	8	3

____ Vegetation
____ Benthic
X Both

Seagrass beds are comprised of turtle grass (*Thalassia testudinum*) and shoal grass (*Halodule wrightii*). Seagrass beds were dense and appear in good condition. Seagrasses around the edge of this bed appeared to have more notable epiphyte coverage than the seagrass within the middle of the bed: this epiphyte coverage may be due to the lagoon's semi-impoundment prior to the recent (September 2023) dredge operations that re-opened this flushing channel and improved water quality conditions.

<u>Proposed construction</u>: Seagrass beds present below and adjacent to the footprint of the proposed overhead bridge structure may be impacted by the shadow of the new bridge and bottom impacts during bridge construction. Anticipate permanent shading impacts (minor due to north-south alignment) and construction impacts to the bottom for piling placements. Seagrasses still anticipated to persist and be present beyond the impact area which will provide for natural recruitment for bed recovery post construction. Sources for seagrass natural recruitment/recovery anticipated to persist in the lagoon post-construction.

Raw Score = Sum of above scores/30 (if uplands, divide by 20)

Current	With Impact
0.80	0.60

Impact Delta (ID)	
Current - w/Impact	0.20

Impact Acres =	0.04

Functional Loss (FL) [For Impact Assessment Areas]:

FL = ID x Impact Acres =	0.008