Natural Resources Evaluation Report

Florida Department of Transportation

District D6

NE 79th Street (SR 934) PD&E Study

Limits of Project: From West of Pelican Harbor Drive to East of Adventure Avenue

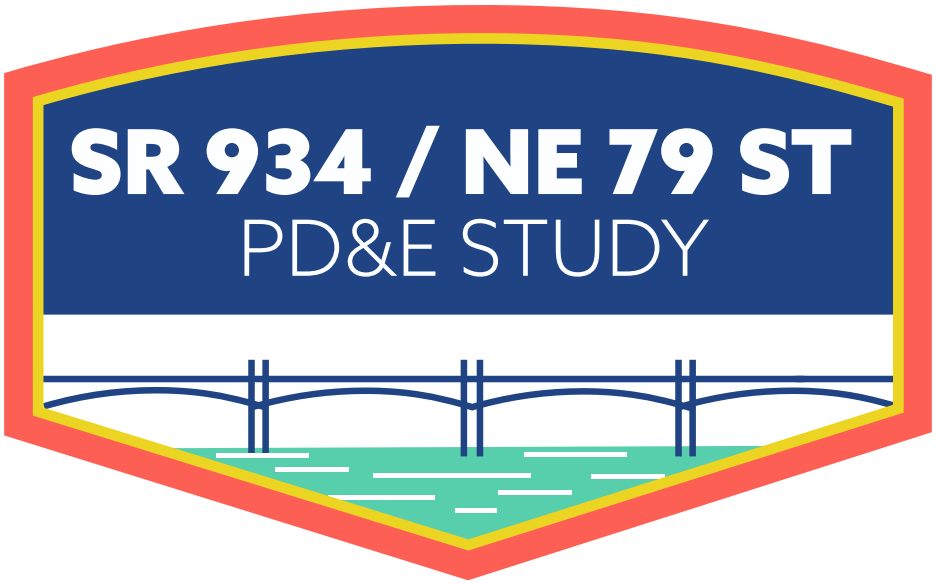
Miami-Dade County, Florida

Financial Management Number: 449007-1-22-01

ETDM Number: 14484

Date: March 2024

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.



Natural Resources Evaluation

March 2024

Executive Summary

This Project Development and Environment Study evaluates the potential replacement of four bridges that connect three islands within the Cities of Miami and North Bay Village in Miami-Dade County and improvements to the roadway approaches within the limits of the study. The bridges are part of State Road 934/NE 79th Street (John F. Kennedy Causeway). The limits of the project extend from milepost 1.077 (west of Pelican Harbor Drive) to milepost 1.947 (east of Adventure Avenue). This document presents the existing natural resources in the project area and the potential impacts from the Preferred Alternative on protected species, wetlands, and Essential Fish Habitat (EFH).

Protected Species and Habitats

This project was evaluated for impacts to protected plant and animal species and their habitats in accordance with the FDOT's *PD&E Manual, Protected Species and Habitat,* which incorporates the requirements of the National Environmental Policy Act (NEPA) and related federal and state laws. Federal and state listed species with potential to occur in the project corridor were identified through research and coordination with US Fish and Wildlife Service, National Marine Fisheries Service, and the Florida Fish and Wildlife Conservation Commission. The project area includes portions of Biscayne Bay, which is considered an Aquatic Preserve, an Outstanding Florida Water, and designated Critical Habitat for the manatee. Field investigations of the project area were also conducted on multiple days and in different seasons to evaluate the potential presence of protected species and habitats. No adverse impacts are anticipated to any listed species or Critical Habitat from the Preferred Alternative, and protected species that may occur in the project area are shown in Table ES.1 along with effect determinations.

Table ES.1 Federal and State Listed Species Effect Determinations

Common Name	Scientific Name	Federal Status	State Status	Occurrence Potential in Project Area	Effect Determination
Fauna Species					
American crocodile	*Crocodylus acutus*	FT	-	High	MANLAA
Boulder Star Coral	*Orbicella franksi*	FT	-	Medium	No Effect
Black skimmer	*Rynchops niger*	-	ST	High	No Adverse Effect Anticipated
Eastern indigo snake	*Drymarchon couperi*	FT	-	No	MANLAA
Elkhorn Coral	*Acropora palmata*	FT	-	Medium	No Effect
Florida bonneted bat	*Eumops floridanus*	FE	-	No	No Effect
Florida manatee	*Trichechus manatus latirostris*	FT	-	High	MANLAA
Giant Manta Ray	*Manta birostris*	FT	-	High	MANLAA
Green sea turtle	*Chelonia mydas*	FE	-	High	MANLAA
Hawksbill sea turtle	*Eretmochelys imbricata*	FE	-	Medium	MANLAA

Common Name	Scientific Name	Federal Status	State Status	Occurrence Potential in Project Area	Effect Determination
Kemp's ridley sea turtle	*Lepidochelys kempii*	FE	-	Medium	MANLAA
Least tern	*Sternula antillarum*	-	ST	High	No Adverse Effect Anticipated
Leatherback sea turtle	*Dermochelys coriacea*	FE	-	Medium	MANLAA
Little blue heron	*Egretta caerulea*	-	ST	Medium	No Adverse Effect Anticipated
Lobed Star Coral	*Orbicella annularis*	FT	-	Medium	No Effect
Loggerhead sea turtle	*Caretta caretta*	FT	-	High	MANLAA
Monarch butterfly	*Danaus plexippus*	FC	-	Medium	No Determination
Mountainous Star Coral	*Orbicella faveolate*	FT	-	Medium	No Effect
Pillar Coral	*Dendrogyra cylindrus*	FT	-	Medium	No Effect
Piping plover	*Charadrius melodus*	FT	-	Low	No Effect
Reddish egret	*Egretta rufescens*	-	ST		No Adverse Effect Anticipated
Roseate spoonbill	*Plataea ajaja*	-	ST		No Adverse Effect Anticipated
Rough cactus coral	*Mycetophyllia ferox*	FT	-	Medium	No Effect
Small-toothed sawfish	*Pristis pectinate*	FE	-	High	MANLAA
Staghorn coral	*Acropora cervicornis*	FT	-	Medium	No Effect
Tricolored bat	*Perimyotis subflavus*	FC	-		No Determination
Tricolored heron	*Egretta tricolor*	-	ST		No Adverse Effect Anticipated
Flora Species					
Beach jacquemontia	*Jacquemontia reclinata*	FE	-	No	No Effect
Big pine partridge pea	*Chamaecrista keyensis*	FE	-	No	No Effect
Blodgett's silverbush	*Argythamnia blodgettii*	FT	-	No	No Effect
Carter's small-flowered flax	*Linum carteri*	FE	-	No	No Effect
Carter's warea	*Warea carteri*	FE	-	No	No Effect
Cape Sable thoroughwort	*Chromolaena frustrata*	FE	-	No	No Effect
Crenulate lead-plant	*Amorpha crenulate*	FE	-	No	No Effect
Deltoid spurge	*Euphorbia deltoidea ssp. deltoidea*	FE	-	No	No Effect
Everglades bully	*Sideroxylon reclinatum ssp. austrofloridense*	FT	-	No	No Effect
Few-flowered fingergrass	*Digitaria pauciflora*	FT	-	No	No Effect

Common Name	Scientific Name	Federal Status	State Status	Occurrence Potential in Project Area	Effect Determination
Florida Brickell-bush	*Brickellia mosieri*	FE	-	No	No Effect
Florida filmy fern	*Didymoglossum punctatum ssp. floridanum*	FE	-	No	No Effect
Florida prairie clover	*Dalea floridana*	FE	-	No	No Effect
Fragrant prickly apple	*Harrisia fragrans*	FE	-	No	No Effect
Garber's spurge	*Euphorbia garberi*	FT	-	No	No Effect
Pinelands spurge	*Euphorbia deltoidea ssp. pinetorum*	FT	-	No	No Effect
Sand flax	*Linum arenicola*	FE	-	No	No Effect
Semaphore pricklypear	*Consolea corallicola*	FE	-	No	No Effect
Small's milkpea	*Galactia smallii*	FE	-	No	No Effect
Tiny polygala	*Polygala smallii*	FE	-	No	No Effect
Wedge spurge	*Euphorbia deltoidea ssp. adhaerens*	FE	-	No	No Effect
Wedge spurge	*Euphorbia deltoidea ssp. serpyllum*	FE	-	No	No Effect

Notes: FE = Federally Endangered, FT = Federally Threatened, FC= Federal Candidate, ST = State Threatened, MANLAA = May Affect, Not Likely to Adversely Affect

Wetlands and Other Surface Waters

This project was evaluated for impacts to wetlands and other surface waters in accordance with FDOT's *PD&E Manual, Wetlands and Other Surface Waters ,* which incorporates the requirements of NEPA and related federal and state laws. Mangroves and seagrass are located within the project area and will be impacted during construction. The Preferred Alternative would result in 0.27 acre of permanent, direct impacts as well as 0.05 acre of temporary impacts to mangroves and buttonwoods growing adjacent to Biscayne Bay. Mangroves and buttonwoods located adjacent to the project corridor may also be impacted by pruning to accommodate construction.

Class I and III Permits from Miami-Dade County are anticipated. These permits will address work on, over, and in tidal coastal waters of Miami-Dade County, unavoidable impacts to mangrove/green buttonwood, and minor modifications to stabilized shoreline within County property.

Work within navigable and tidally influenced Waters of the US and alterations to the shoreline (e.g., temporary easement access) below the mean high water line is Federally jurisdictional and requires approval from the US Army Corps of Engineers under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act. Mangroves above the mean high water line are not jurisdictional wetlands and are anticipated to require mitigation.

Under operating agreement with the Florida Department of Environmental Protection, the South Florida Water Management District maintains State jurisdiction for Environmental Resource Permit reviews under 62-330 FAC for roadway and transportation projects. The South Florida Water Management District will coordinate any required Sovereign Submerged Lands easement or lease from the Florida Department of Environmental Protection Bureau of State Lands as part of the Environmental Resource Permit process, if necessary. Biscayne Bay within the project limits is not a designated navigation channel by the United States Coast Guard and the project will not alter navigation within the project area, so no US Coast Guard permit is required.

Essential Fish Habitat

This project was evaluated for impacts to EFH in accordance with FDOT's *PD&E Manual, Essential Fish Habitat,* which incorporates the requirements of NEPA and related federal and state laws. EFH is present in the form of corals, hardbottom, macroalgae, mangroves, seagrass, and unconsolidated bottom. Additionally, Biscayne Bay and seagrass in the project area are classified by the National Marine Fisheries Service as Habitat Areas of Particular Concern. Only Minimal impacts to EFH and Habitat Areas of Particular Concern are anticipated under the Preferred Alternative. Avoidance and minimization has been incorporated into alternative development and will be further achieved through special construction conditions and a barge plan. Additional in-water surveys are anticipated prior to construction. Under the Preferred Alternative, the widened bridges would result in the additional shading of approximately 0.0109 acre of seagrass beds. The temporary construction easement would result in a total of 0.0148 acre of temporary impacts to seagrass beds. A Barge Plan will be developed prior to construction to avoid and minimize impacts, and unavoidable impacts to seagrass will be mitigated in accordance with NMFS requirements.

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1 Project Overview

This Natural Resources Evaluation describes existing environmental conditions and potential impacts to protected species and wildlife habitats as well as to wetlands and Essential Fish Habitat (EFH).

1.1 Project Summary

This project involves the potential replacement of four prestressed concrete slab (Sonovoid) bridges arranged in two locations as parallel bridge pairs connecting three islands within the City of Miami and North Bay Village in Miami-Dade County. The project also involves improvements to the roadway approaches within the limits of the study. The bridges are part of State Road (SR) 934/NE 79th Street (John F. Kennedy Causeway), a roadway classified as "Urban Principal Arterial - Other", which connects mainland Miami to Miami Beach and North Bay Village. The specific limits of the project extend from milepost (MP) 1.077 (west of Pelican Harbor Drive) to MP 1.947 (east of Adventure Avenue), as shown in **Figure 1.1**. The project's western study limits fall within the City of Miami, while the eastern study limits fall within North Bay Village. Outside the project limits, NE 79th Street is expected to remain as a six-lane urban principal arterial. Therefore, to align with the existing configuration and accommodate additional lanes being dropped or added at the intersections, the logical termini for this project involve NE 79th Street from west of Pelican Harbor Drive (western terminus) to east of Adventure Avenue (eastern terminus). These logical termini also allow for full inclusion of the intersection footprints. The western bridge pair, comprised of Bridge Identification (ID) Numbers 870083 (westbound) and 870549 (eastbound), is located just west of North Bay Island/Harbor Island. The eastern bridge pair, comprised of Bridge ID Numbers 870084 (westbound) and 870550 (eastbound), is located between North Bay Island/Harbor Island and Treasure Island. The project is approximately 0.8 mile in length.

Figure 1.1 Study Area

The existing western bridge pair (**Figure 1.2**) consists of six lanes, including four 11-foot-wide travel lanes to the inside and two 13.5-foot-wide travel lanes to the outside, and a raised median connecting the two bridge structures. The outside travel lanes include shared-use markings to accommodate bicycles. In

addition, a 5-foot-wide raised sidewalk is present on each side of the bridge pair to the outside. The existing eastern bridge pair (**Figure 1.3**) consists of six 10-foot-wide travel lanes with a raised median connecting the two bridge structures, as well as a 5.5-foot-wide dedicated bicycle lane and a sidewalk varying between 5 and 6 feet in width (separated by guardrail) on each side of the bridge pair to the outside. The bridge approaches are generally consistent with the typical section of the bridges, except for east of the western bridge pair which includes dedicated bicycle lanes. Crossing over the Biscayne Bay, the bridges have a maximum vertical clearance of 6.78 feet at Mean Low Water and a minimum vertical clearance of 3.05 feet at Mean High Water. Biscayne Bay at the bridge crossings is not deemed a navigable waterway by the United States Coast Guard. The existing right-of-way varies along the project segment and ranges from approximately 100 to 130 feet.

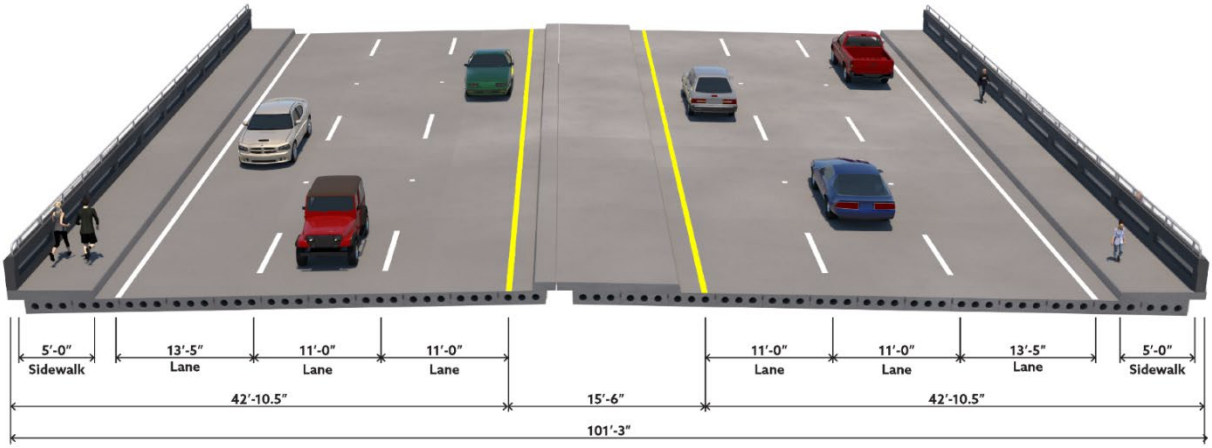


Figure 1.2 Western Pair Existing Bridge Configuration (Bridge ID 870083 and 870549)

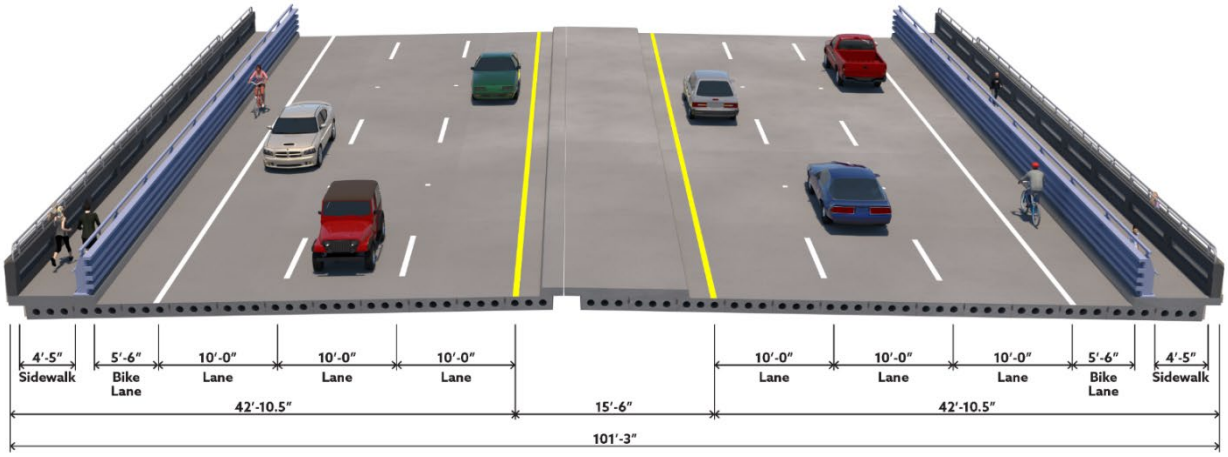


Figure 1.3 Eastern Pair Existing Bridge Configuration (Bridge ID 870084 and 870550)

1.2 Purpose and Need

1.2.1 Purpose

The purpose of this project is to evaluate bridge replacement alternatives to address the structural deficiencies of four existing bridges (arranged in two locations as parallel bridge pairs) along State Road 934/NE 79th Street (John F. Kennedy Causeway). The project limits extend from Pelican Harbor Drive to Adventure Avenue within the City of Miami and North Bay Village in Miami-Dade County. The western bridge pair, comprised of Bridge Identification (ID) Numbers 870083 (westbound) and 870549 (eastbound), is located just west of North Bay Island/Harbor Island. The eastern bridge pair, comprised of Bridge ID Numbers 870084 (westbound) and 870550 (eastbound), is located between North Bay Island/Harbor Island and Treasure Island.

An additional project goal is to maintain emergency evacuation capabilities.

1.2.2 Need

The need for the project is based on the following criteria:

1.2.2.1 Bridge Deficiencies: Address Substandard Structural Elements

The existing bridges were constructed in the early 1970s and have been determined to be Structurally Deficient given the condition of each bridge's superstructure (beams), which is referred to as "Sonovoid" design. Due to the structure type, the number of structural deficiencies, and the low clearance from the water, the bridge superstructures cannot properly be repaired.

Based on FDOT Bridge Inspection Reports prepared in October 2020, each of the four bridges received a Sufficiency Rating of 48.7 (on a scale of 0-100). The Sufficiency Rating is essentially an overall rating of a bridge's fitness to remain in service. A Sufficiency Rating below 50.0 may qualify a bridge for replacement funds.

As part of the inspection process, several structural components were evaluated and assigned a rank or condition based on the NBI system. The ranks/conditions were based on a scale of zero through nine. A rank of zero generally means that the bridge is out of service, beyond corrective action, and in need of replacement; a rank of nine means the bridge is in excellent condition and no deficiencies have been identified. The ranks/conditions for the structural components examined in the reports are as follows:

Bridge ID Numbers 870083 (westbound) and 870549 (eastbound)

- Deck: 4 (Poor)
- Superstructure: 4 (Poor)
- Substructure: 6 (Satisfactory)

Bridge ID Numbers 870084 (westbound) and 870550 (eastbound)

- Deck: 4 (Poor)
- Superstructure: 4 (Poor)
- Substructure: 7 (Good)

1.2.2.2 Safety: Maintain Evacuation and Emergency Response Times

Serving as part of the emergency evacuation route network designated by the Florida Division of Emergency Management (FDEM) and Miami-Dade County, NE 79th Street (including the bridges) plays a critical role in facilitating traffic between the beaches and the mainland of Miami during emergency evacuation periods. The project area is located in Storm Surge Planning Zone B, which is at risk for storm surge for Category 2 and higher storms. There is a need for the bridges to continue meeting emergency evacuation requirements.

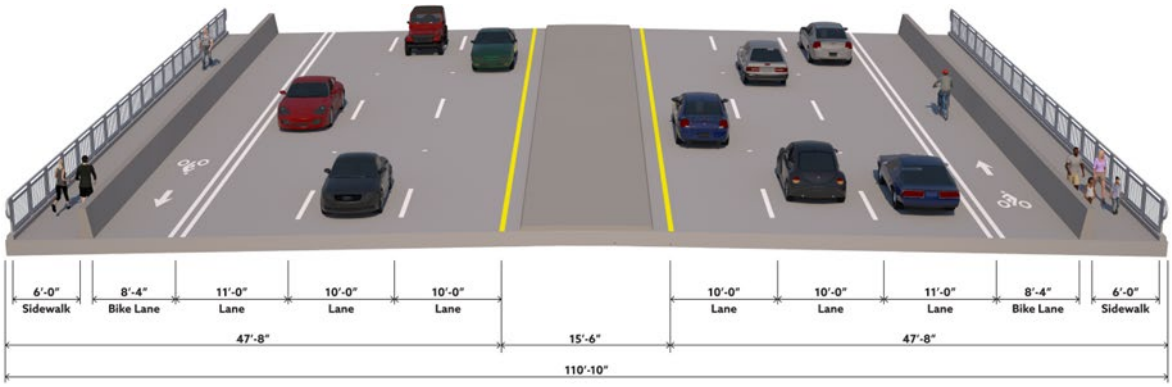
1.3 Preferred Alternative

The PD&E Study evaluated multiple alternatives for addressing the existing bridge conditions. Alternatives evaluated include No-Build, minor and major rehabilitation, and full replacement. In addition, the PD&E Study also evaluated roadway typical section alternatives for improving pedestrian and bicycle facilities. The bridge analysis and roadway typical section evaluation is provided in the Bridge Analysis Report and Preliminary Engineering Report under separate cover.

The preferred alternative for the bridge replacement is Alternative 2B: Replacement (Profile #2). In Alternative 2B, the four existing bridges are to be removed and replaced with two newly constructed bridge structures. The bridge profile for Alternative 2B is raised approximately 3.6 feet, for a maximum elevation of 12.2 feet NAVD and minimum bridge low member elevation of 7.3 feet NAVD. The proposed bridge low member height provides a minimum vertical clearance of 6 feet above the projected Mean High Water (MHW) +1.3 feet NAVD for the bridge design year 2105. Due to the rise in elevation, driveway reconstruction and construction of gravity walls are necessary east and west of the bridge limits. The preferred bridge typical section upgrades the facility to FDOT standards, providing a raised median, six travel lanes (two 10-foot wide inside lanes and one 11-foot wide outside lane), 8-foot 4-inch bicycle lanes, and 6-foot barrier-separated sidewalks in each direction. The total bridge width is 110 feet 10 inches.

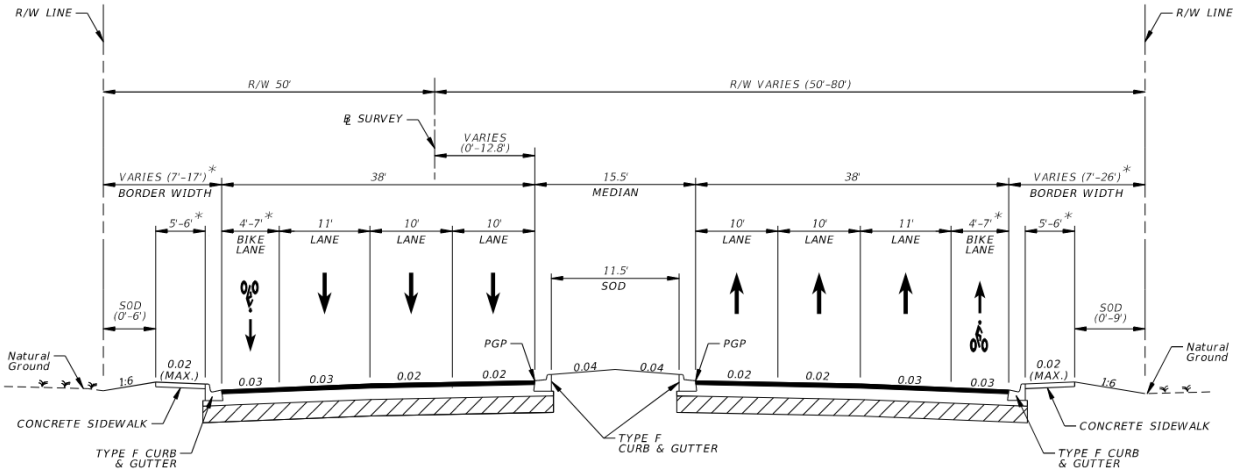
Figure 1.4 illustrates the preferred typical section. Alternative 2B fully complies with the minimum FDOT standards and would maximize the design life of the bridges.

Figure 1.4 | Preferred Bridge Typical Section



The preferred roadway typical section at the bridge approaches and Harbor Island/North Bay Island upgrades the facility to meet current FDOT design criteria, including providing a raised median, six travel lanes (two 10-foot inside lanes and one 11-foot outside lane), buffered bicycle lanes (7 feet), Type F curb & gutter, and sidewalks (6-foot wide) in each direction, shown in **Figure 1.5**. The proposed roadway segment at Treasure Island transitions from the preferred roadway typical section at the bridge approaches to the existing typical section at the east project limit (4-foot wide bicycle lanes, 5-foot wide sidewalks). The proposed roadway segment west of the west bridge pair, along Pelican Harbor Marina park, is constrained and the preferred roadway typical section provides bicycle lanes (4.25 feet wide), guardrail at the face of curb to shield the canal hazard (Biscayne Bay), and sidewalk (6-foot wide).

Figure 1.5 | Preferred Roadway Typical Section



The proposed drainage system is divided into four systems that will comply with all water quality and quantity requirements required by the permitting agencies having jurisdiction along the corridor. The

stormwater runoff within each proposed system will be collected via curb inlets along both sides of the road and will be treated before discharging into Biscayne Bay. Due to right of way limitations, the use of dry retention swales, drainage wells and pump stations is limited. With these considerations and based on the existing permits available adjacent to the study area, the use of exfiltration trenches along the median of the project is being proposed. This method is the most widely used stormwater management system in South Florida that meets the stormwater quality and quantity criteria applicable to roadway projects and is preferred due to cost and maintenance. The exfiltration trenches are proposed at locations avoiding as much as possible conflicts with the existing underground utilities along the corridor.

The preferred roadway typical section upgrades the facility to FDOT standards at the bridge approaches and the roadway segment at North Bay Island/Harbor Island, including providing a raised median, six travel lanes (two 10-foot inside lanes and one 11-foot outside lane), buffered bicycle lanes (7-feet wide), and sidewalks (6-feet wide) in each direction. The proposed roadway segment at Treasure Island transitions from the preferred roadway typical section at the bridge approaches to the existing typical section at the east project limit (4-foot wide bicycle lanes, 5-foot wide sidewalks).

Following the Public Alternatives Meeting, several typical section options were evaluated for the roadway segment from Pelican Harbor Drive to the western bridge pair to provide continuity of the bicycle lanes, upgrade the pedestrian facilities, and address roadside safety while minimizing right of way and environmental impacts. Options to add a Shared Use Path, Urban Side Path, or Separate Bicycle Lanes were considered and eliminated, because there are no existing paths along SR 934/NE 79th Street Causeway corridor outside the project limits and the on-street bicycle lanes provide continuity along the corridor. Based on the typical section evaluation, the preferred roadway typical section provides a raised median (15.5-feet wide) with Type F curb & gutter, six travel lanes (two 10-foot wide inside lanes and one 11-foot wide outside lane), bicycle lanes (4.25-feet wide), Type F curb & gutter, guardrail at the face of curb to shield the canal hazard (Biscayne Bay), and sidewalks (6-feet wide) in each direction. The preferred roadway typical section for this segment will require 0.136 acres in the form of a Fee Simple Purchase from Miami-Dade County for the new sidewalk and lighting. In addition, temporary construction easements will be needed for slope harmonization and bridge reconstruction. Additional details are provided in the Preliminary Engineering Report.

1.4 Project Area Description

The project is located along SR 934 on three islands and associated bridges over Biscayne Bay (**Figure 1.1**). The westernmost island is owned predominantly by Miami-Dade County and includes the Pelican Harbor Marina and Boat Ramp as well as a causeway extending to the east. Two bridges (one in each direction) extend from this causeway to North Bay Island. From North Bay Island the project includes two bridges (one in each direction) extending to Treasure Island. North Bay Island and Treasure Island make up the City of North Bay Village, a small municipality with an approximate population of about 8,000 people.

The term “project corridor” is used in this document to represent a smaller area that encompasses the existing and proposed S.R. 934 right-of-way within the project study limits, covering the entire footprint of the Build Alternative. The term “project area” represents a larger expanse that encompasses the project corridor as well as all a buffer of 500 feet from the project corridor.

1.5 Land Use

Land use cover descriptions provided for both uplands and wetlands are classified utilizing the *Florida Land Cover Classifications System* (FLUCCS) designations. Previous and existing land uses in the project area were initially determined utilizing US Geological Survey maps, historical images, aerial photographs, and land use mapping from the South Florida Water Management District (SFWMD) (2017-2019). Land use categories in the project area reported by SFWMD were verified in the field. Field reviews generally confirmed the SFWMD land use mapping with no major adjustments or corrections. Land use categories in the project area as mapped by SFWMD are shown in **Figure 1.6** and each land use category in the project area is described below. Pelican Harbor Marina and Boat Ramp are public parks located both north and south of SR 934, along Pelican Harbor Drive. Most of the causeway is occupied by the SR 934 travel lanes, with some vegetation and rip-rap along the waterline. On North Bay Island, privacy walls and landscaping vegetation line much of SR 934, and a gas station and large high-rise condominium complex are located immediately north of SR 934. On Treasure Island, the bridges connecting to North Bay Island touch down next to a multi-story commercial building to the south and a gated entrance to a WSVN Channel 7 News building and parking lot. On the westernmost island in the project area, natural vegetation and rip-rap line most of the area between the SR 934 ROW and Biscayne Bay.

The predominant land use in the project area is residential and commercial and services, including condominium and vacation rentals, retail strip malls, restaurants, and gas stations. The project area includes North Bay Island, a private gated community. Commercial services, including shopping centers, condominiums, and a gas station are located north of SR 934 along East and West Dr. The southern end of North Bay Island includes a residential neighborhood with single-family homes. Within the eastern portion of the project area, the predominant land use is commercial and services including restaurants, a preschool, a television station, and a gas station. The westernmost portion of the project area includes a marina located north of SR 934 and a park located to the south.

Residential, Medium Density (FLUCCS – 1210)

This category refers to residential areas with a dwelling density of two to five per acre. This land use type occurs along and immediately south of Northeast 79th Street Parkway on North Bay Island.

Residential High Density, Multiple Dwelling Units (FLUCCS – 1340)

This category refers to a density of six or more dwelling units per acre. This land use category includes multi-story town homes, duplexes, and other high-rise residential structures. This class is found immediately north of John F Kennedy Causeway on North Bay Island.

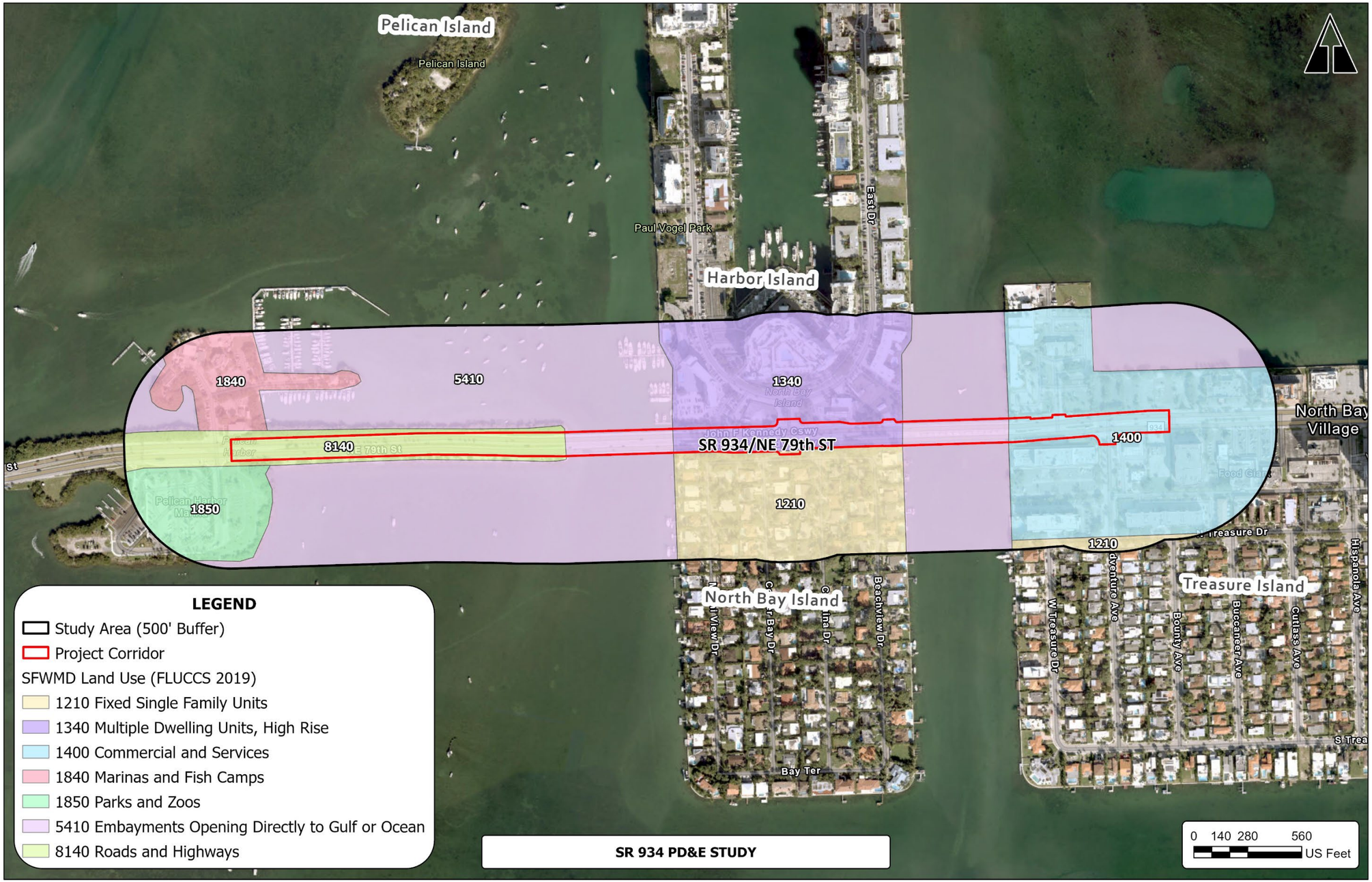


Figure 1.6 Land Use in the Project Area

Recreational, Marinas and Fish Camps (FLUCCS – 1840)

The recreational land use category is used for those whose physical structure indicates that active user-oriented recreation is or could be occurring within the given physical area. This includes golf courses, parks, swimming beaches and shoreline, marinas, fairgrounds, etc. The Marinas and Fish Camps land use is a type of recreational use and is mapped in one location in the study area covering the northern part of Pelican Harbor Park.

Recreational, Parks and Zoos (FLUCCS – 1850)

The recreational land use category is used for those whose physical structure indicates that active user-oriented recreation is or could be occurring within the given physical area. This includes golf courses, parks, swimming beaches and shoreline, marinas, fairgrounds, etc. The Parks and Zoos land use is a type of recreational use and is mapped in one location in the study area covering the southern part of Pelican Harbor Park.

Bays and Estuaries, Embayments Opening Directly to Gulf or Ocean (FLUCCS – 5410)

Embayments are inlets or arms of the sea that extend into the land. Water bodies in this class are those which have a direct connection to the open Gulf of Mexico or the Atlantic Ocean and do not meander great distances up or down the interior of the coast. This land use type is found surrounding all land masses in the project area.

Roads and Highways (FLUCCS – 8140)

This class includes those highways exceeding 100 feet in width, with four or more lanes and median strips. The intent of this data layer is to include only the major transportation corridors. This land use type is mapped for NE 79th Street.

1.6 Elevation, Hydrology, and Drainage

The project area is located on flat land with a ground elevation ranging between approximately zero and eight feet. Elevation is relatively constant throughout the project corridor, with the highest elevations found on the northern portion of North Bay Island. **Figure 1.7** shows an elevation map created with data collected by NOAA and the U.S. Department of Commerce in 2007 using Light Detection and Ranging in North American Datum 1983 (NAD 83).

Major hydrologic features and wetlands mapped by the USFWS National Wetlands Inventory (NWI) in the project area are shown in **Figure 1.8**. The only hydrology present within the project area is estuarine and marine deepwater of Biscayne Bay that are classified as Outstanding Florida Waters (OFW). No wetlands are present within the project area. The project is not underlain by the Biscayne Sole Source Aquifer, as mapped by the USEPA. The existing bridges drain into Biscayne Bay through scuppers and the remaining portions of the project area contain curb and gutter systems, which similarly drain into the Bay via catch basins and outfalls.

This project is located within the SFWMD's Biscayne Bay Basin. According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (updated September 11, 2009), the entirety of the project area is located within the 100-year floodplain (Zone AE) with varying elevation requirements from 8 to 10 feet.

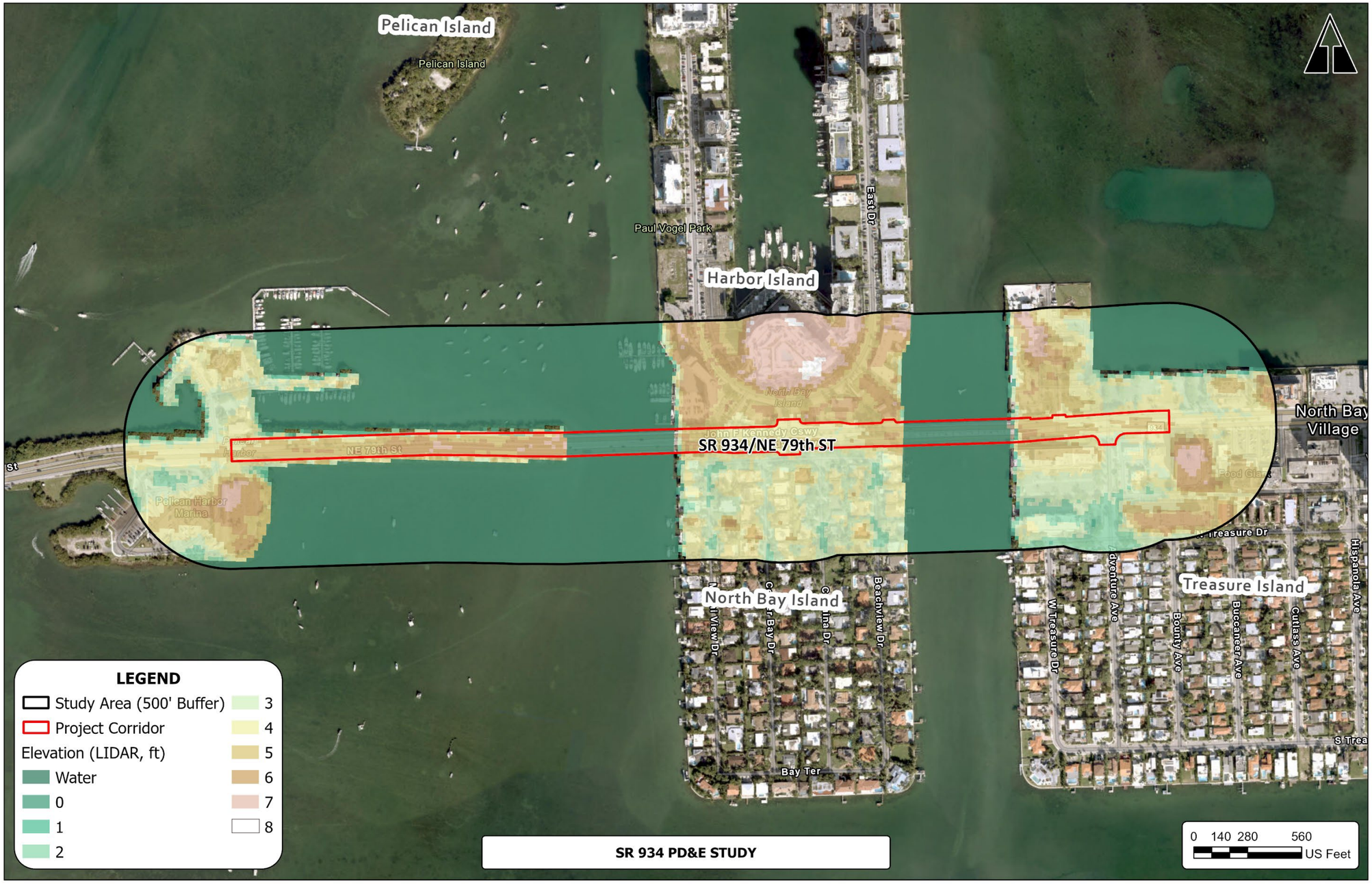


Figure 1.7 Elevation in the Project Area

Figure 1.8 Wetlands in the Project Area

1.7 Soils

The Natural Resources Conservation Service (NRCS) (2017) indicates two soil types occur in the project area (**Table 1.1, Figure 1.9**). The urban land soil type consists of residential, industrial, commercial, and institutional land; construction sites; public administration sites; railroad yards; cemeteries; airports; golf courses; sanitary landfills; sewage treatment plants; water control structures and spillways; other land used for such purposes; small parks within urban and built-up areas; and highways, railroads, and other transportation facilities if they are surrounded by urban areas. The other soil type, Udorthents, consists of moderately well drained to excessively drained soils that have been disturbed by cuffing or filling, and areas that are covered by buildings and pavement.

Table 1.1 Soils in the Project Area

Soil Type	Environmental Association	Approximate Percent of Project Area
Udorthents	This soil type consists of moderately well drained to excessively drained soils that have been disturbed by cuffing or filling, and areas that are covered by buildings and pavement. The areas are mostly larger than five acres. This is not a hydric soil.	**8.4%**
Urban Land	This soil type is for residential, industrial, commercial, and institutional land; construction sites; public administration sites; railroad yards; cemeteries; airports; golf courses; sanitary landfills; sewage treatment plants; water control structures and spillways; other land used for such purposes; small parks within urban and built-up areas; and highways, railroads, and other transportation facilities.	**39.8%**
Water	-	**51.8%**

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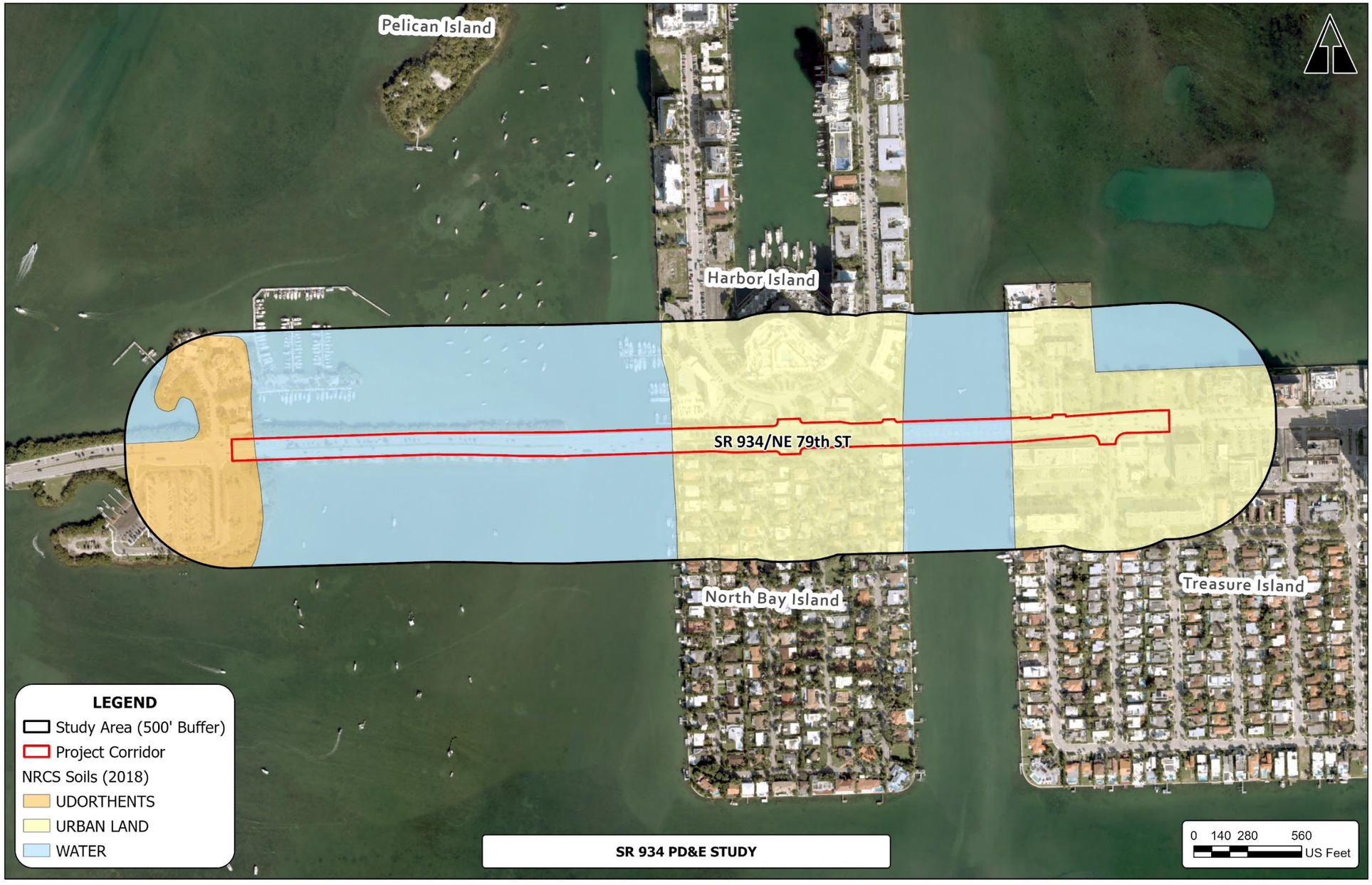

Figure 1.9 Soils in the Project Area

2 Protected Species and Habitat

This project was evaluated for impacts to protected plant and animal species and their habitats in accordance with FDOT's *PD&E Manual, Protected Species and Habitat,* which incorporates the requirements of the National Environmental Policy Act (NEPA) and related federal and state laws. The Endangered Species Act of 1973, as amended, and the Florida Endangered and Threatened Species Act, Section 379.2291, Florida Statues, grant the USFWS and FWC, respectively, authority to regulate certain wildlife species. Federal agencies are required to consult with USFWS and/or NMFS to ensure federal actions are not likely to jeopardize the continued existence of federally endangered or threatened species or result in the destruction or adverse modification of designated critical habitat. The Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act provide additional protections to many bird species. In Florida, all bat species are protected by FWC.

2.1 Prior Coordination and Methodology

Preliminary data collection utilized literature reviews, the ETDM system, database reviews, and agency coordination to identify federal and state listed species with potential to occur in or near the project corridor. Specific information sources and databases utilized for assessment of potential impacts include the following:

- ETDM Summary Report (Project # 14484)
- FDOT Environmental Screening Tool
- USFWS Environmental Conservation Online System
- USFWS Critical Habitat online map tool
- USFWS Information for Planning and Consultation (IPaC)
- Florida Fish and Wildlife Conservation Service (FWC) databases
- FWC Integrated Wildlife Habitat Ranking System
- FWC Water Bird Colony Location Data (http://atoll.floridamarine.org/waterBirds/)
- FWC Bald Eagle Nest Data and Audubon's EagleWatch
- USFWS wood stork (*Mycteria americana*) nesting colonies map tool
- USFWS Species Recovery Plans
- FNAI Land Use GIS Layers

The protected species addressed in this document are listed in **Table 2.1**. Federal and state listed species with potential to occur in the project area were identified through research and coordination with USFWS, NMFS, and FWC, particularly through the ETDM process and using data from the FDOT Environmental Screening Tool and the USFWS IPaC tool. Known habitat associations of species with potential to occur in the vicinity of the project were compared to habitats present in the project area to further evaluate potential species involvement. Through the ETDM system, FWC noted the potential loss of wildlife habitat and water quality degradation from the project, and recommended standard in-water work conditions for manatee and marine turtles. USFWS noted the potential presence of several Federally listed species

and wetlands and recommended standard construction conditions and protective guidelines. USFWS also recommended that bridge removal be conducted without explosives. Additional direct coordination with NMFS was conducted regarding EFH and is summarized in **Appendix E**. That coordination included an initial meeting with NMFS on September 17, 2022 to discuss the approach and methods for field surveys and an additional meeting on October 19, 2023 to discuss the results of surveys and approach to addressing EFH impacts. Coordination also occurred with SFWMD and NMFS at an interagency meeting on September 21, 2023.

The probability of occurrence of a species in the project area is broadly categorized according to the following definitions. A probability of occurrence of No indicates that potential habitat within the range of the species does not occur in the project area. A Low probability of occurrence indicates that while the project area is in the species range (or within a USFWS Consultation Area for that species), potential habitat is so minimal or low quality that it is unlikely the species would be present. A Moderate probability of occurrence indicates that the project area contains suitable habitat within the species range and within reasonable proximity to source populations. A High probability of occurrence indicates the project area is near known populations or sightings and contains high quality potential habitat.

Table 2.1 Listed Wildlife with Potential to Occur in Project Area

Common Name	Scientific Name	Federal Status	State Status	Occurrence Potential in Project Area	Effect Determination
Fauna Species					
American crocodile	*Crocodylus acutus*	FT	-	High	MANLAA
Boulder Star Coral	*Orbicella franksi*	FT	-	Medium	No Effect
Black skimmer	*Rynchops niger*	-	ST	High	No Adverse Effect Anticipated
Eastern indigo snake	*Drymarchon couperi*	FT	-	No	MANLAA
Elkhorn Coral	*Acropora palmata*	FT	-	Medium	No Effect
Florida bonneted bat	*Eumops floridanus*	FE	-	No	No Effect
Florida manatee	*Trichechus manatus latirostris*	FT	-	High	MANLAA
Giant Manta Ray	*Manta birostris*	FT	-	High	MANLAA
Green sea turtle	*Chelonia mydas*	FE	-	High	MANLAA
Hawksbill sea turtle	*Eretmochelys imbricata*	FE	-	Medium	MANLAA
Kemp's ridley sea turtle	*Lepidochelys kempii*	FE	-	Medium	MANLAA
Least tern	*Sternula antillarum*	-	ST	High	No Adverse Effect Anticipated
Leatherback sea turtle	*Dermochelys coriacea*	FE	-	Medium	MANLAA
Little blue heron	*Egretta caerulea*	-	ST	Medium	No Adverse Effect Anticipated
Lobed Star Coral	*Orbicella annularis*	FT	-	Medium	No Effect

Common Name	Scientific Name	Federal Status	State Status	Occurrence Potential in Project Area	Effect Determination
Loggerhead sea turtle	*Caretta caretta*	FT	-	High	MANLAA
Monarch butterfly	*Danaus plexippus*	FC	-	Medium	No Determination
Mountainous Star Coral	*Orbicella faveolate*	FT	-	Medium	No Effect
Pillar Coral	*Dendrogyra cylindrus*	FT	-	Medium	No Effect
Piping plover	*Charadrius melodus*	FT	-	Low	No Effect
Reddish egret	*Egretta rufescens*	-	ST	Medium	No Adverse Effect Anticipated
Roseate spoonbill	*Plataea ajaja*	-	ST	Medium	No Adverse Effect Anticipated
Rough cactus coral	*Mycetophyllia ferox*	FT	-	Medium	No Effect
Small-toothed sawfish	*Pristis pectinate*	FE	-	High	MANLAA
Staghorn coral	*Acropora cervicornis*	FT	-	Medium	No Effect
Tricolored bat	*Perimyotis subflavus*	FC	-	-	No Determination
Tricolored heron	*Egretta tricolor*	-	ST	Medium	No Adverse Effect Anticipated
Flora Species					
Beach jacquemontia	*Jacquemontia reclinata*	FE	-	No	No Effect
Big pine partridge pea	*Chamaecrista keyensis*	FE	-	No	No Effect
Blodgett's silverbush	*Argythamnia blodgettii*	FT	-	No	No Effect
Carter's small-flowered flax	*Linum carteri*	FE	-	No	No Effect
Carter's warea	*Warea carteri*	FE	-	No	No Effect
Cape Sable thoroughwort	*Chromolaena frustrata*	FE	-	No	No Effect
Crenulate lead-plant	*Amorpha crenulate*	FE	-	No	No Effect
Deltoid spurge	*Euphorbia deltoidea ssp. deltoidea*	FE	-	No	No Effect
Everglades bully	*Sideroxylon reclinatum ssp. austrofloridense*	FT	-	No	No Effect
Few-flowered fingergrass	*Digitaria pauciflora*	FT	-	No	No Effect
Florida Brickell-bush	*Brickellia mosieri*	FE	-	No	No Effect
Florida filmy fern	*Didymoglossum punctatum ssp. floridanum*	FE	-	No	No Effect
Florida prairie clover	*Dalea floridana*	FE	-	No	No Effect
Fragrant prickly apple	*Harrisia fragrans*	FE	-	No	No Effect
Garber's spurge	*Euphorbia garberi*	FT	-	No	No Effect

Common Name	Scientific Name	Federal Status	State Status	Occurrence Potential in Project Area	Effect Determination
Pinelands spurge	*Euphorbia deltoidea ssp. pinetorum*	FT	-	No	No Effect
Sand flax	*Linum arenicola*	FE	-	No	No Effect
Semaphore pricklypear	*Consolea corallicola*	FE	-	No	No Effect
Small's milkpea	*Galactia smallii*	FE	-	No	No Effect
Tiny polygala	*Polygala smallii*	FE	-	No	No Effect
Wedge spurge	*Euphorbia deltoidea ssp. adhaerens*	FE	-	No	No Effect
Wedge spurge	*Euphorbia deltoidea ssp. serpyllum*	FE	-	No	No Effect

Notes: FE = Federally Endangered, FT = Federally Threatened, FC= Federal Candidate, ST = State Threatened, MANLAA= May Affect, Not Likely to Adversely Affect

Field investigations of the project corridor were also conducted on multiple days and in different seasons to evaluate the potential presence of protected species and habitats. Preliminary field investigations occurred on September 16, 2022. Benthic surveys were conducted from September 16 to 19, 2022, and on June 13, 2023 to characterize the benthic habitats and presence of listed species within the marine environment (see Wetlands and Essential Fish Habitat for additional details). Wetland habitat assessments such as mangrove areas were also documented during surveys conducted on August 16, 2023 and January 11, 2024. In-water surveys were conducted by environmental scientists via viewing buckets, snorkel, and SCUBA diving, depending on conditions within the Survey Area. A report detailing the benthic surveys is provided in **Appendix A.** Limited roost surveys for Florida bonneted bat were conducted in the project corridor on March 14, 2023 with a follow-up inspection in January, 2024. Surveys followed the protocols in the USFWS Limited Roost Survey Framework (**Appendix B**).

Habitats mapped by FLUCFCS code in **Figure 1.6** were confirmed in the field. Sightings or indications of protected species and any sensitive environmental features are shown in **Figure 2.1.** No listed species were observed during field investigations. Terrestrial portions of the project area have been heavily urbanized and no undisturbed, natural terrestrial habitats remain. The project area contains marine habitats in Biscayne Bay, including seagrass and EFH. The causeway on the western end of the project has a shoreline protected with rip-rap and some vegetation, predominantly seagrapes (*Coccoloba uvifera*) and buttonwood (*Conocarpus erectus*) with some mangroves.

The project is within the USFWS consultation areas for American crocodile (*Crocodylus acutus*), Florida bonneted bat (*Eumops floridanus*), Florida manatee (*Trichechus manatus latirostris*), piping plover (*Charadrius melodus*), and Atlantic Coast plants. The waters in the project area are part of Biscayne Bay, an Outstanding Florida Water, Aquatic Preserve, and designated Critical Habitat for the Florida manatee. The nearest wading bird colony, as mapped by FWC, is 0.84 miles to the south of the project, on Bird Key, a small island in Biscayne Bay.

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Figure 2.1 Sensitive Environmental Features

Below is a description of each species identified in **Table 2.1** along with pertinent aspects of their ecology, conservation, and potential habitat in the project area. Federally listed species are also considered to be state listed. No additional surveys are anticipated.

2.2 Federally Protected Species in the Project Area

2.2.1 American crocodile (Threatened- Federal, USFWS)

The American crocodile is a large, grayish-green colored crocodilian with a narrow, tapered snout. They inhabit coastal areas throughout the Caribbean with a range that extends into south Florida. Habitat for this species includes brackish and saltwater areas and they are often found in mangrove swamps (FWC). They are occasionally also found in freshwater areas due to the extensive canal system in Florida. The project area is within the USFWS consultation area for American crocodile.

The project area contains potential foraging habitat for American crocodile in areas mapped as Embayments Opening Directly to Gulf or Ocean (FLUCCS – 5410). No potential nesting or basking habitat occurs in the project area because of the armoring and rip-rap along shorelines. Areas below the armoring/rip-rap are frequently inundated and not suitable for nesting or regular basking. Because there would be no permanent, direct impacts to the waters in the project area that form potential crocodile habitat, and because crocodiles are highly mobile and are likely to avoid temporary impacts during construction, a determination of **May Affect, Not Likely to Adversely Affect** is made for this species.

2.2.2 Boulder Star Coral (Threatened – Federal, NMFS)

The boulder star coral is an orange-brown, greenish-brown, or grayish-brown coral composed of massive clumps with uneven surfaces and pale or white extremities. They are native to the shallow waters of the Caribbean, Gulf of Mexico, Bahamas, Bermuda, and Florida.

The project area contains potential habitat for boulder star coral in areas mapped as Embayments Opening Directly to Gulf or Ocean (FLUCCS – 5410), associated with Biscayne Bay. The submerged portions of the project area include sandy substrate and areas of observed seagrass and/or macroalgal coverage. Aside from the existing bridge piles, the project area lacks significant structure to support corals. This coral species was not observed during benthic surveys and therefore a determination of **No Effect** is made for this species.

2.2.3 Eastern Indigo Snake (Threatened- Federal, USFWS)

The eastern indigo snake is a non-venomous, bluish-black colored snake that can reach lengths up to eight feet. They inhabit pine flatwoods, hardwood forests, moist hammocks, and areas that surround cypress swamps. Eastern indigo snakes can be found throughout Peninsular Florida and southeastern Georgia.

There is no potential habitat for eastern indigo snake within the project study area. No gopher tortoise burrows or other refugia that are occasionally inhabited by eastern indigo snakes were found in the project corridor. The *Eastern Indigo Snake Programmatic Effect Determination Key* (USFWS 2017) was followed in evaluating potential impacts from the proposed project and is provided below. A highlighted copy is provided in **Appendix F**.

A. Project is not located in open water or salt marsh……**go to B**
B. Permit will be conditioned for use of the Service's most current guidance for Standard Protection Measures For The Eastern Indigo Snake during site preparation and project construction……**go to C**
C. The project will impact less than 25 acres of eastern indigo snake habitat (*e.g.* sandhill, scrub, pine flatwoods, pine rocklands, scrubby flatwoods, high pine, dry prairie, coastal prairie, mangrove swamps, tropical hardwood hammocks, hydric hammocks, edges of freshwater marshes, agricultural fields [including sugar cane fields and active, inactive, or abandoned citrus groves], and coastal dunes)……**go to D**
D. The project has no known holes, cavities, active or inactive gopher tortoise burrows, or other underground refugia where a snake could be buried, trapped and/or injured during project activities……..**NLAA**

Because the project will follow the *USFWS Standard Protection Measures for the Eastern Indigo Snake* (**Appendix G**) and the project study area has no potential habitat, a determination of **May Affect, Not Likely to Adversely Affect** is made for the eastern indigo snake. Due to the use of the key to reach a MANLAA determination, no further consultation is required.

2.2.4 Elkhorn Coral (Threatened – Federal, NMFS)

The elkhorn coral is a golden brown or pale tan coral with white tips that grow in flattened, frond-like branches angled upward from a central trunk. They grow in dense colonies that can be six feet in height and 12 feet in diameter that provide a complex habitat for fish and reef-dwelling organisms. They can be found in shallow waters up to 15 feet in the Bahamas, Caribbean, and Florida, with the northern range limit in Florida being Broward County.

The project area contains potential habitat for elkhorn coral in areas mapped as Embayments Opening Directly to Gulf or Ocean (FLUCCS – 5410), associated with Biscayne Bay. The submerged portions of the project area include sandy substrate and areas of observed seagrass and/or macroalgal coverage. Aside from the existing bridge piles, the project area lacks significant structure to support corals. This coral species was not observed during benthic surveys and therefore a determination of **No Effect** is made for this species.

2.2.5 Florida bonneted bat (Threatened- Federal, USFWS)

The Florida bonneted bat is Florida's largest bat, with a wingspan up to 21 inches. It ranges from dark gray to brownish gray. Their native habitat consists of upland or wetland shrub/forest, open freshwater wetlands, and open bodies of fresh water. Florida bonneted bats may also inhabit bridges and overpasses, abandoned buildings, and large cavity trees with hollows. Florida bonneted bats have been found in Lee, Collier, Charlotte, and Miami-Dade counties and their species' small range leaves their population vulnerable to natural disasters. Upland portions of the project area on North Bay Island and Treasure Island are mapped within the USFWS Florida Bonneted Bat Consultation Area, Urban Bat Area. The island that is occupied by Pelican Harbor Park and the aquatic portion of the project area is not mapped within the USFWS Consultation Area for this species.

Impact evaluations followed the *USFWS South Florida Ecological Services Office Florida Bonneted Bat Consultation Guidelines* (USFWS 2019) (guidelines). The distance from the bottom of the current and proposed bridges to the water is less than 15 feet. According to the USFWS guidelines, this height above water would not be sufficient to allow Florida bonneted bat roosting in the bridges. Landscaped trees in

and adjacent to the project corridor were evaluated for their potential to form roosting habitat. Limited Roost Surveys were conducted and are described in **Appendix B**. Although some trees were present that exceed 33 feet in height, no cavities, holes or crevices that could form potential roosting habitat were found during field investigations, so no potential roosting habitat is present and none would be impacted by the proposed project. Aquatic portions of the project area occur over saltwater, which is not considered potential foraging habitat. Acoustic surveys for bats were not conducted. No indications of Florida bonneted bats were observed during limited roost surveys, and no impacts are anticipated to roosting or foraging habitat. For these reasons, a determination of **No Effect** is made for this species.

2.2.6 Florida manatee (Threatened- Federal, USFWS)

The Florida manatee (*Trichechus manatus latirostris*) is a subspecies of the West Indian manatee found in Florida. Manatees live in bays as well as brackish and freshwater rivers along the coasts of Florida. They prefer areas near shore with underwater vegetation like seagrass and eelgrass. Manatees cannot tolerate water temperatures below 68 degrees and seek warmer waters during the winter months.

The project area contains potential habitat for Florida manatees in areas mapped as Embayments Opening Directly to Gulf or Ocean (FLUCCS – 5410). The project area is within the USFWS consultation area for Florida manatees and Biscayne Bay, including the aquatic portions of the project area, which are designated Critical Habitat. The USACE Manatee Effect Determination Key April 2013 was used to evaluate potential impacts and is provided below. A highlighted copy is provided in **Appendix C**.

A. Project is located in waters accessible to manatees or directly or indirectly affects manatees……**B**
B. Project is other than the activities listed above……**C**
C. Project is not located in an Important Manatee Area (IMA)……**G**
G. Project does not provide new 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**
N. Project impacts to submerged aquatic vegetation, emergent vegetation or mangrove will have beneficial, insignificant, discountable or no effects on the manatee……**O**
O. Project proponent elects to follow standard manatee conditions for in-water work and requirements, as appropriate for the proposed activity, prescribed on the maps……**P**
P. If project is other than repair or rehabilitation of a multi-slip facility, a new multi-slip facility, residential dock facility, shoreline stabilization, or dredging, and does not provide new 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 and no further consultation with the Service is necessary.

Permanent impacts to 0.0109 acres of seagrass and 0.27 acres of mangroves, and temporary impacts to 0.0148 acres of seagrass and 0.05 acres of mangroves will occur due to this project. Because the project would not involve any blasting, docks, boat slips, expanded water craft access or dredging, and the USFWS *Standard Manatee Conditions for In-Water Work* will be followed, a determination of **May Affect, Not Likely to Adversely Affect** is made for the Florida manatee. Due to the use of the key to reach a MANLAA determination, no further consultation is required.

2.2.7 Giant Manta Ray (Threatened-Federal, NMFS)

The giant manta ray is the largest ray in the world and wingspan up to 26 feet. They are filter feeders and are generally slow-moving, migratory animals. Commercial fishing is the main threat to this species. Giant manta rays are found throughout the world's temperate and tropical oceans and coastal zones as well as estuaries. The project area contains potential habitat for giant manta ray in Biscayne Bay, which include areas mapped by SFWMD as Embayments Opening Directly to Gulf or Ocean (FLUCCS – 5410) in **Figure 1.6**. To avoid and minimize potential impacts during construction, FDOT will implement the *NOAA Protected Species Construction Conditions* (2021). Giant manta ray are highly mobile and anticipated to relocate away from any construction, so only minor temporary indirect impacts are anticipated. No blasting would occur during the removal of the existing bridges, and no permanent direct impacts to aquatic habitats in Biscayne Bay that may be accessible to giant manta ray are anticipated. For these reasons, a determination of **May Affect, Not Likely to Adversely Affect** is made for this species.

2.2.8 Green sea turtle (Endangered- Federal)

The green sea turtle is the largest hard-shelled sea turtle with a typical adult measuring 3-4 feet long and 300-350 pounds. Their diet consists of mostly seagrasses and algae. This species is found throughout the world with a wide nesting range that includes Florida. Important feeding areas in Florida include the Indian River Lagoon, the Florida Keys, Florida Bay, the Dry Tortugas, Homosassa, Crystal River, Cedar Key, and St. Joseph Bay (NOAA 2022). They are often found feeding in shallow coastal waters near seagrass and macroalgal beds and come onto sandy beaches to lay their nests. The NMFS has jurisdiction over this species when swimming (in the water) and USFWS has jurisdiction over this species when nesting (on land).

The project area contains potential aquatic habitat for green sea turtles in Embayments Opening Directly to Gulf or Ocean (FLUCCS – 5410). No potential nesting habitat for sea turtles occurs in the project area because of the armoring and rip-rap along shorelines. Areas below the rip-rap are frequently inundated and not suitable for nesting. Sea turtles are highly mobile and able to relocate away from temporary construction impacts. Permanent impacts to 0.0109 acres of seagrass and temporary impacts to 0.0148 acres of seagrass will occur due to this project. No blasting is proposed as part of this project. There would be no significant long-term direct impacts to sea turtle habitat, and FDOT commits to implementing NMFS Sea Turtle and Smalltooth Sawfish Construction Conditions. For these reasons, a determination of **May Affect, Not Likely to Adversely Affect** is made for this species.

2.2.9 Hawksbill sea turtle (Endangered- Federal)

The hawksbill sea turtle is a smaller sea turtle that is named for its unique beak-like mouth. They have mottled "tortoise" colored shells with serrated edges. They are an omnivorous species with their preferred food source being sponges. They will also feed on marine algae, corals, and invertebrates. Hawksbill sea turtles are found in tropical and sub-tropical waters of all major oceans and are often found feeding in nearshore foraging grounds such as coral reefs. In the continental United States, nesting is rare and is restricted primarily to the southeast coast of Florida and the Florida Keys (NOAA 2022). The NMFS has jurisdiction over this species when swimming (in the water) and USFWS has jurisdiction over this species when nesting (on land).

The project area contains potential habitat for hawksbill sea turtles in Embayments Opening Directly to Gulf or Ocean (FLUCCS – 5410). No potential nesting habitat for sea turtles occur in the project area because of the armoring and rip-rap along shorelines. Areas below the rip-rap are frequently inundated and not suitable for nesting. Sea turtles are highly mobile and able to relocate away from temporary construction impacts. No blasting is proposed as part of this project. Permanent impacts to 0.0109 acres of seagrass and temporary impacts to 0.0148 acres of seagrass will occur due to this project. No blasting is proposed as part of this project. There would be no long-term direct impacts to sea turtle habitat, and FDOT commits to implementing NMFS Sea Turtle and Smalltooth Sawfish Construction Conditions. For these reasons, a determination of **May Affect, Not Likely to Adversely Affect** is made for this species.

2.2.10 Kemp's ridley sea turtle (Endangered- Federal)

The Kemp's ridley sea turtle is the smallest sea turtle with shell that is grayish-green on top and pale yellow on bottom. They have a triangular head with a slightly hooked beak. They mainly feed on crabs in shallow coastal areas but will also scavenge on discarded bycatch. Kemp's ridley turtles are found mainly in the Gulf of Mexico but juveniles are often found in the Atlantic Ocean as far north as Nova Scotia. Adult females routinely return to the beach they hatched on for nesting and nest in large groups. This is also the only species that routinely nests during the day (NOAA 2022). The NMFS has jurisdiction over this species when swimming (in the water) and USFWS has jurisdiction over this species when nesting (on land).

The project area contains potential habitat for Kemp's ridley sea turtles in Embayments Opening Directly to Gulf or Ocean (FLUCCS – 5410). No potential nesting habitat for sea turtles occurs in the project area because of the armoring and rip-rap along shorelines. Areas below the rip-rap are frequently inundated and not suitable for nesting. No blasting is proposed as part of this project. Permanent impacts to 0.0109 acres of seagrass and temporary impacts to 0.0148 acres of seagrass will occur due to this project. No blasting is proposed as part of this project. There would be no long-term direct impacts to sea turtle habitat, and FDOT commits to implementing NMFS Sea Turtle and Smalltooth Sawfish Construction Conditions. For these reasons, a determination of **May Affect, Not Likely to Adversely Affect** is made for this species.

2.2.11 Leatherback sea turtle (Endangered- Federal)

The leatherback sea turtle is the largest turtle in the world and is the only species of sea turtle that lacks a hard shell. They are highly migratory and proficient divers. This species has the widest distribution and nest mainly on tropical or subtropical beaches, including on the Atlantic coast of Florida, which is one of the main nesting areas in the continental United States. Their diet consists of soft-bodied prey such as jellyfish (NOAA 2022). The NMFS has jurisdiction over this species when swimming (in the water) and USFWS has jurisdiction over this species when nesting (on land).

The project area contains potential habitat for leatherback sea turtles in Embayments Opening Directly to Gulf or Ocean (FLUCCS – 5410). No potential nesting habitat for sea turtles occurs in the project area because of the armoring and rip-rap along shorelines. Areas below the rip-rap are frequently inundated and not suitable for nesting. Sea turtles are highly mobile and able to relocate away from temporary construction impacts. No blasting is proposed as part of this project. Permanent impacts to 0.0109 acres of seagrass and temporary impacts to 0.0148 acres of seagrass will occur due to this project. No blasting

is proposed as part of this project. There would be no long term direct impacts to sea turtle habitat, and FDOT commits to implementing NMFS Sea Turtle and Smalltooth Sawfish Construction Conditions. For these reasons, a determination of **May Affect, Not Likely to Adversely Affect** is made for this species.

2.2.12 Lobed Star Coral (Threatened – Federal, NMFS)

The lobed star coral is a reef-building coral that grows into varying shapes and colors depending on differing light conditions. It is found in shallow waters of the western Atlantic Ocean and provides habitat for many reef-dwelling organisms.

The project area contains potential habitat for lobed star coral in areas mapped as Embayments Opening Directly to Gulf or Ocean (FLUCCS – 5410), associated with Biscayne Bay. The submerged portions of the project area include sandy substrate and areas of observed seagrass and/or macroalgal coverage. Aside from the existing bridge piles, the project area lacks significant structure to support corals. This coral species was not observed during benthic surveys and therefore a determination of **No Effect** is made for this species.

2.2.13 Loggerhead sea turtle (Endangered- Federal)

The loggerhead sea turtle is named for its large head. It is the most abundant of the sea turtle species that nests in the United States. They are found in coastal waters worldwide and those that nest in Florida often migrate from the Bahamas, Cuba, and Mexico. Loggerhead turtles have powerful jaws that allow them to feed on hard-shelled prey such as conch (NOAA 2022). The NMFS has jurisdiction over this species when swimming (in the water) and USFWS has jurisdiction over this species when nesting (on land).

The project area contains potential habitat for loggerhead sea turtles in Embayments Opening Directly to Gulf or Ocean (FLUCCS – 5410). No potential nesting habitat for sea turtles occurs in the project area because of the armoring and rip-rap along shorelines. Areas below the rip-rap are frequently inundated and not suitable for nesting. Sea turtles are highly mobile and able to relocate away from temporary construction impacts. No blasting is proposed as part of this project. Permanent impacts to 0.0109 acres of seagrass and temporary impacts to 0.0148 acres of seagrass will occur due to this project. No blasting is proposed as part of this project. There would be no long term direct impacts to sea turtle habitat, and FDOT commits to implementing NMFS Sea Turtle and Smalltooth Sawfish Construction Conditions. For these reasons, a determination of **May Affect, Not Likely to Adversely Affect** is made for this species.

2.2.14 Mountainous Star Coral (Threatened – Federal, NMFS)

The mountainous star coral is a usually pale brown coral with florescent green highlights. The colonies are solid and can grow very large with a smooth, undulating surface containing small lumps or bulges. It is a colonial stony coral that is native to the Caribbean Sea and Gulf of Mexico. It is found in shallow waters in Florida, the Bahamas, Venezuela, and Bermuda at depths up to 40 m.

The project area contains potential habitat for mountainous star coral in areas mapped as Embayments Opening Directly to Gulf or Ocean (FLUCCS – 5410), associated with Biscayne Bay. The submerged portions of the project area include sandy substrate and areas of observed seagrass and/or macroalgal coverage. Aside from the existing bridge piles, the project area lacks significant structure to support corals. This coral

species was not observed during benthic surveys and therefore a determination of **No Effect** is made for this species.

2.2.15 Pillar Coral (Threatened – Federal, NMFS)

The pillar coral is an encrusting, hard coral that usually has a beige or brown appearance. Its growth pattern resembles fingers that grow up from the seafloor with no secondary branching. This is one of only a few types of coral where the polyps can be seen during the day, giving it a furry appearance. Pillar coral is found at depths between 1 and 20 meters in the warmer parts of the western Atlantic Ocean and Caribbean Sea.

The project area contains potential habitat for pillar coral in areas mapped as Embayments Opening Directly to Gulf or Ocean (FLUCCS – 5410), associated with Biscayne Bay. The submerged portions of the project area include sandy substrate and areas of observed seagrass and/or macroalgal coverage. Aside from the existing bridge piles, the project area lacks significant structure to support corals. This coral species was not observed during benthic surveys and therefore a determination of **No Effect** is made for this species.

2.2.16 Piping plover (Threatened- Federal, USFWS)

The piping plover is a small shorebird that measures up to 7.25 inches in length at adulthood. They have a white belly, pale gray back, and bright orange-yellow legs. They are found along the Gulf Coast states into Mexico, along the Atlantic Coast from Florida to Newfoundland, and out west to northern Michigan and Wisconsin. In Florida, they inhabit sandy beaches, sand flats, and mudflats. Their diet consists of insects, small crustaceans, and marine worms (FWC 2023). The project area lacks potential foraging and roosting habitat for piping plover because there are no wide, exposed sandy or muddy areas typical of potential habitat. The shorelines in the project area are armored or protected with rip-rap and terrestrial areas are heavily urbanized. Because of a lack of potential habitat, a determination of **No Effect** is made for this species.

2.2.17 Rough Cactus Coral (Threatened- Federal, NMFS)

The rough cactus coral is a stony coral that is typically gray or brown but can also be reddish or green. It is a stony coral found in shallow waters of the Caribbean, southern parts of the Gulf of Mexico, Florida, and the Bahamas.

The project area contains potential habitat for rough cactus coral in areas mapped as Embayments Opening Directly to Gulf or Ocean (FLUCCS – 5410), associated with Biscayne Bay. The submerged portions of the project area include sandy substrate and areas of observed seagrass and/or macroalgal coverage. Aside from the existing bridge piles, the project area lacks significant structure to support corals. This coral species was not observed during benthic surveys and therefore a determination of **No Effect** is made for this species.

2.2.18 Staghorn Coral (Threatened- Federal, NMFS)

The staghorn coral is a branching coral that is golden tan or pale brown with white tips. It grows in antler-like branches from a central trunk that angle upward. They are found in shallow waters, up to 60 ft, in the

Bahamas, Florida, and Caribbean. The corals grow in dense interlocking groups called thickets that provide important habitat for fish and other reef-dwelling organisms.

The project area contains potential habitat for staghorn coral in areas mapped as Embayments Opening Directly to Gulf or Ocean (FLUCCS – 5410), associated with Biscayne Bay. The submerged portions of the project area include sandy substrate and areas of observed seagrass and/or macroalgal coverage. Aside from the existing bridge piles, the project area lacks significant structure to support corals. This coral species was not observed during benthic surveys and therefore a determination of **No Effect** is made for this species.

2.2.19 Smalltooth sawfish (Endangered- Federal, NMFS)

The smalltooth sawfish belongs to the group of fishes that include rays, skates and sharks and is under the jurisdiction of the NMFS. They have a shark-like body and a distinctive rostrum formed as a long, flattened snout edged with teeth. This saw-like protrusion has made them a target of trophy hunters and is a leading threat along with habitat destruction and commercial fishing. Juvenile smalltooth sawfish inhabit coastal areas like estuaries, river mouths, and bays throughout the year. Adults are more typically found in open water. The historical range extended from the U.S. to Brazil and in Florida they are most common from Charlotte Harbor south to the Florida Keys.

The project area contains potential habitat for small-toothed sawfish in Biscayne Bay, which include areas mapped by SFWMD as Embayments Opening Directly to Gulf or Ocean (FLUCCS – 5410) in **Figure 1.6**. The *NMFS Sea Turtle and Smalltooth Sawfish Construction Conditions* (**Appendix D**) will be implemented to avoid and minimize impacts. Permanent impacts to 0.27 acres of mangroves and temporary impacts to 0.05 acres of mangroves will occur due to this project. Small-toothed sawfish are highly mobile and anticipated to relocate away from any construction, so only minor temporary indirect impacts are anticipated. No blasting would occur during the removal of the existing bridges, and no permanent direct impacts to habitat are anticipated. For these reasons, a determination of **May Affect, Not Likely to Adversely Affect** is made for this species.

2.2.20 Federally listed plant species (USFWS)

The project area is primarily residential and commercial and services type land uses, and there is little natural habitat present. These plant species are endemic to pine rocklands, which are not present within the project area. Field reviews confirmed none of these federally-listed plant species were present within the project area. Because the project area is heavily disturbed and developed, and field reviews did not detect the presence of any of these federally-listed species, a determination of **No Effect** is made.

2.3 State Protected Species in the Project Area

2.3.1 Black skimmer (Threatened- Florida, FWC)

The black skimmer is a seabird with a white face and belly, black back and wings, and a black-capped head. Its defining characteristic is its large red and black bill that is longer on the bottom than the top. Globally, black skimmers are found from the northeastern U.S. coasts down to Mexico and on the Gulf Coast of

Florida. In Florida, they inhabit coastal areas such as beaches, estuaries, and sand bars. Their diet consists primarily of fish, which they hunt by skimming the surface of the water with their lower bill (FWC 2023).

According to the Wildlife Observations layer on the FWC GIS tool available at https://myfwc.com/research/gis/maps-data/, a black skimmer was observed in Pelican Harbor Park in 1976. That bird was observed on the roof of a building. Open water areas of Biscayne Bay, including portions of the project area mapped as Embayments Opening Directly to Gulf or Ocean (FLUCCS – 5410), are potential foraging habitat for black skimmer. The project would replace existing bridges and would not have long term direct impacts on foraging habitat. There are no isolated open sandy areas, beaches, or mud flats that contain limited vegetative cover typical of roosting or breeding habitat, and no buildings would be impacted, so no impacts to roosting or nesting habitat are anticipated. Black skimmers are highly mobile and anticipated to relocate a short distance if disturbed by construction from the proposed project, so construction impacts would be brief and minimal. For these reasons, a determination of **No Adverse Effect Anticipated** is made for this species.

2.3.2 Least tern (Threatened- Florida, FWC)

The least tern is the smallest tern in North America, reaching a length of approximately nine (9) inches in adulthood. It has a yellow beak, black capped head, long pointed wings, and a forked tail. Least terns are found in the United States along the Atlantic Coast and mid-Atlantic states and from Mexico to northern Argentina. In Florida, they inhabit coastal areas, such as bays and estuaries, and along rivers. Their diet consists mostly of fish but can also include small invertebrates (FWC 2023).

According to the Wildlife Observations layer on the FWC GIS tool available at https://myfwc.com/research/gis/maps-data/, a least tern was observed in Pelican Harbor Park in 1976. That bird was observed on the roof of a building. Potential foraging habitat for least tern occurs throughout Biscayne Bay, including portions of the project area mapped as Embayments Opening Directly to Gulf or Ocean (FLUCCS – 5410). The project would replace existing bridges and would not have long term direct impacts on foraging habitat. There are no isolated open sandy areas, beaches, or mud flats that contain limited vegetative cover typical of roosting or breeding habitat, and no buildings would be impacted, so no impacts to roosting or nesting habitat are anticipated. Least terns are highly mobile and anticipated to relocate a short distance if disturbed by construction from the proposed project, so construction impacts would be brief and minimal. For these reasons, a determination of **No Adverse Effect Anticipated** is made for this species.

2.3.3 Little Blue Heron (Threatened- Florida, FWC)

The little blue heron is a small wading bird species that can reach a length up to 29 inches, with a wingspan of 41 inches. It has a grayish-blue body and a dark red head during breeding season, and a purplish head and neck during non-breeding season. Little blue heron occurs along the entire eastern and Gulf coasts of the U.S. as well as throughout the Mississippi River Valley, southern California, and into central and South America. They inhabit a variety of aquatic environments including fresh, salt, and brackish water systems like swamps, estuaries, ponds, lakes, and rivers. Their nests are typically built in trees and shrubs on islands, emergent vegetation, or in dense thickets near water.

Potential foraging habitat for little blue heron occurs throughout Biscayne Bay, including portions of the project area mapped as Embayments Opening Directly to Gulf or Ocean (FLUCCS – 5410). The project would replace existing bridges and would not have long term direct impacts on foraging habitat. The project would permanently impact approximately **0.27** acres of mangroves and temporarily impact 0.05 acres of mangroves during construction, so minor impacts to little blue heron nesting habitat is anticipated. Little blue herons are highly mobile and anticipated to relocate a short distance if disturbed by construction from the proposed project, so construction impacts would be brief and minimal. For these reasons, a determination of **No Adverse Effect Anticipated** is made for little blue heron.

2.3.4 Tricolored Heron (Threatened- Florida, FWC)

The tricolored heron is a midsized wading bird that can reach a length between 24-26 inches with a wingspan of approximately 36 inches. It has a dark slate-blue colored head and upper body, a purple chest, and white underparts. Tricolored herons can be found from Massachusetts, down through the Gulf of Mexico and Caribbean, to northern Brazil. Habitat for tricolored heron includes fresh and saltwater marshes, estuaries, mangrove swamps, lagoons, and river deltas.

Potential foraging habitat for tricolored heron occurs throughout Biscayne Bay, including portions of the project area mapped as Embayments Opening Directly to Gulf or Ocean (FLUCCS – 5410). The project would replace existing bridges and would have no long term direct impacts on foraging habitat. Tricolored herons typically nest in trees or shrubs on salt marsh islands or standing water, which is not found within the project area. Therefore, no impacts to roosting or nesting habitat are anticipated. Tricolored herons are highly mobile and anticipated to relocate a short distance if disturbed by construction from the proposed project, so construction impacts would be brief and minimal. For these reasons, a determination of **No Adverse Effect Anticipated** is made for the tricolored heron.

2.3.5 Reddish Egret (Threatened – Florida, FWC)

The reddish egret is a medium sized heron species that can reach a length up to 32 inches with a wingspan up to 48 inches. They have both a dark and white variation. The dark variation is more common and has a grayish-brown body, with a reddish head and neck. The white variation has a mostly white body, head, and neck, and both variations have dark blue legs and feet with a pink bill with a black tip. This species can be found year round on the coasts from Florida to the northwest coast of Mexico, and on the coasts from southern California to Costa Rica. Reddish egrets inhabit coastal areas, primarily on estuaries near mangroves, and lagoons. Nests are constructed in mangrove keys and dredge spoiled islands.

Potential foraging and nesting habitat for reddish egret occurs throughout Biscayne Bay, including portions of the project area mapped as Embayments Opening Directly to Gulf or Ocean (FLUCCS – 5410). The project would replace existing bridges and would not have long term direct impacts on foraging habitat. The project would permanently impact approximately **0.27** acres of mangroves and temporarily impact 0.05 acres of mangroves during construction, so minor impacts to reddish egret nesting habitat is anticipated. Reddish egrets are highly mobile and anticipated to relocate a short distance if disturbed by construction from the proposed project, so construction impacts would be brief and minimal. For these reasons, a determination of **No Adverse Effect Anticipated** is made for reddish egret.

2.3.6 Roseate Spoonbill (Threatened – Florida, FWC)

The roseate spoonbill is an endemic spoonbill that can reach a length up to 40 inches with a wingspan up to 53 inches. It has pink wings and underparts with a white neck and back, and pinkish legs and feet. They can be found in coastal areas of Central America, the Caribbean, and the Gulf of Mexico as well as South America east of the Andes Mountains. Foraging habitat includes shallow water of varying salinity, including marine tidal flats and ponds, coastal marshes, mangrove dominated inlets and pools, and freshwater sloughs and marshes. Nesting habitat includes coastal mangroves and dredge spoil islands and they often nest near other wading bird species.

Potential foraging and nesting habitat for roseate spoonbill occurs throughout Biscayne Bay, including portions of the project area mapped as Embayments Opening Directly to Gulf or Ocean (FLUCCS – 5410). The project would replace existing bridges and would not have long term direct impacts on foraging habitat. The project would permanently impact approximately **0.27** acres of mangroves and temporarily impact 0.05 acres of mangroves during construction, so minor impacts to roseate spoonbill nesting habitat is anticipated. Roseate spoonbills are highly mobile and anticipated to relocate a short distance if disturbed by construction from the proposed project, so construction impacts would be brief and minimal. For these reasons, a determination of **No Adverse Effect Anticipated** is made for roseate spoonbill.

2.3.7 State Listed Plants (Florida Department of Agriculture and Consumer Services)

Research and field reviews of the project corridor and adjacent areas confirmed that the soils are heavily disturbed and that the islands in the project area are manmade and lack natural habitats. The majority of the project corridor is paved or covered with turf grasses and landscaping. Because of a lack of potential habitat, **No Effect Anticipated** to state listed plant species are anticipated.

2.4 Other Protected Species or Habitats

2.4.1 Tricolored Bat (Federal Candidate Species – USFWS)

On September 14, 2022, this species was proposed by USFWS for listing as endangered under the ESA and is considered a 'Species of Greatest Conservation Need' in Florida. Florida's smallest bat, it generally weighs between 4 and 8 grams. The tricolored bat, formerly the Eastern pipistrelle (Pipistrellus subflavus), can be identified from other bats in Florida by its pink forearms that strongly contrast their black wings. During the spring, summer, and fall, known as the non-hibernating seasons, tricolored bats are found in forested habitats where they roost in trees, primarily among leaves. Tricolored bats will roost singly or in small groups, within caves, tree foliage, tree cavities, and have been known to use bat houses, buildings, and other man-made structures. Tricolored bats exhibit high site fidelity with many individuals returning year after year to the same hibernaculum. These bats are insectivorous and feed on smaller insects such as mosquitoes, flying ants, leafhoppers, and small beetles. During the winter, tricolored bats hibernate in caves and mines; although, in the southern United States, where caves are sparse, tricolored bats often hibernate in culverts, as well as sometimes in tree cavities and abandoned water wells. Tricolored bats emerge early in the evening and forage at treetop level or above but may forage closer to ground later in the evening. This species of bat exhibits slow, erratic, fluttery flight, while foraging and are known to forage most commonly over waterways and forest edges.

As stated previously in the FBB description, multiple landscaped trees are found within the project study area, some of which may be impacted due to this project. However, during the field reviews, no signs of bats were discovered. As this species is not listed at the time of this NRE submittal, no effect determination was made. If the listing status of the tricolored bat is elevated by USFWS to Threatened or Endangered and the Preferred Alternative is located within the consultation area, during the design and permitting phase of the proposed project, FDOT commits to re-initiating consultation with the USFWS to determine the appropriate survey methodology and to address USFWS regulations regarding the protection of the tricolored bat.

2.4.2 Monarch Butterfly (Federal Candidate Species – USFWS)

The Monarch butterfly is currently included in the 2022-2027 USFWS National Listing Workplan for FY24 as a candidate species for the ESA. Inclusion within the Workplan does not automatically list a species as endangered or threatened under the ESA. The species is not currently protected by federal law under this act; however, federal agencies may voluntarily add conservation actions to their projects. The South Florida region potentially serves as a "stopping point" on the species' seasonal migration to Mexico and as a year-round habitat for the Monarchs. Urban and suburban development is eliminating monarch habitat by supplanting agricultural landscapes where an estimated 90% of milkweeds, the Monarch's host plant, occur. Monarchs have the potential to occur wherever their host plant is found; this includes roadside, fields, and urbanized and suburbanized areas.

The project area has the potential to sustain milkweed; therefore, the monarch butterfly may potentially occur within the project area. However, no milkweed was observed during any of the field reviews conducted for this project. If the listing status of the monarch butterfly is elevated by USFWS to Threatened or Endangered and the Preferred Alternative is located within the consultation area, FDOT commits to re-initiating consultation with the USFWS during the design and permitting phase to determine the appropriate survey methodology and to address USFWS regulations regarding the protection of the monarch butterfly.

2.4.3 Waterbirds

According to the FWC GIS tool available at https://myfwc.com/research/gis/maps-data/, the nearest waterbird bird colony, is approximately 2,600 feet to the south of the project, on a small island in Biscayne Bay named Bird Key. Because this colony is more than 330 feet from the project, no additional surveys or coordination are required.

2.4.4 Other Bat Species

In accordance with Florida Administrative Code rule 68A-4.001 General Prohibitions; and rule 68A-9.010 Taking Nuisance Wildlife, all bats in Florida are protected under state law; however, as stated in earlier discussions for the Florida Bonneted and no indications of bats were encountered and no records of bats in the project corridor were identified, so no impacts are anticipated.

2.4.5 Bald Eagle

The bald eagle is protected under The Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. To reduce the potential for human activity to adversely affect bald eagles, USFWS and FWC

Management Guidelines suggest the protection of a 660-ft habitat buffer around each active bald eagle nest. According to Audubon's EagleWatch nest locater, the nearest bald eagle nest is more than five miles away from the project location, in Ives Estates. The project is not anticipated to affect the bald eagle or its habitat. Therefore, no impacts to the bald eagle are anticipated as a result of this project and no further coordination are required.

2.4.6 Critical Habitat

Designated Critical Habitats are described in 50 CFR § 17 and § 226. For listed species, Critical Habitat consists of the specific areas within the geographical area occupied by the species, on which are found those physical or biological features essential to the conservation of the species and which may require special management considerations or protection; and 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.

The USFWS Critical Habitat Mapper as well as feedback from USFWS made through the ETDM system were used to identify the presence of designated Critical Habitat in the project area. Aquatic portions of the project area are within designated Critical Habitat for the West Indian manatee. That Critical Habitat includes all of Biscayne Bay within the project area. The project does not include the construction of marinas or additional docks and will not result in an increase in boat traffic. Additionally, the project will not restrict access to or movement of manatees throughout Biscayne Bay. Therefore, no destruction or adverse modification to Critical Habitat are anticipated.

2.5 Potential Impacts To Protected Species And Habitats

The extent of potential direct impacts from the Preferred Alternative were assessed by overlaying habitat types (as mapped by SFWMD and compared with USFWS NWI maps and field investigations) onto the project corridor, which represents the footprint of direct impacts under the Build Alternative.

2.5.1 Direct Impacts to Protected Species and Habitats

The extent of anticipated direct impacts to habitats from the Build Alternative are reported by FLUCFCS Code in **Table 2.2**. The project would expand FDOT right-of-way on the westernmost island, both north and south of SR 934, into adjacent uplands that are part of Pelican Harbor Park. Impacts to aquatic habitats are addressed in greater detail in the Wetlands and EFH Sections of this document. Temporary construction easements would be required at three locations in North Bay Village but these are developed areas (driveways and turfgrass) that are not wildlife habitats.

Table 2.2 Direct Impacts by FLUCFCS Code

Land Use/Land Cover	FLUCFCS CODE	Temporary Impacts to Construction Easement in Pelican Harbor Park (acres)	Long Term Direct Impacts Under Preferred Alternative (acres)
Bays and Estuaries	5410	0.05	0
Roads and Highways (part of Pelican Harbor Park)	8140	0.05	0.27
	TOTAL	0.10	0.27

2.5.2 Indirect Impacts to Protected Species and Habitats

Indirect impacts are those impacts that are linked and causally related to the proposed project and may be temporary or permanent. For transportation projects, indirect impacts typically include disturbance to areas adjacent to the project area. These impacts include the short-term impacts associated with road construction activities as well as other long-term impacts due to the proximity of the roadway to wildlife habitat.

Potential short-term indirect impacts from the Preferred Alternative could result from the use of heavy equipment on land, barges, and the staging or stockpiling of equipment and materials. These activities can increase erosion on land and contribute to turbidity, scour, and siltation in Biscayne Bay. Indirect shading impacts to Biscayne Bay are anticipated from the 0.3-acre increase in bridge area. Indirect impacts will be avoided and minimized by implementing the FDOT *Standard Best Management Practices for Road and Bridge Construction*, the *NOAA Protected Species Construction Conditions* (2021), the USFWS *Standard Manatee Conditions for In-Water Work*, the NMFS *Sea Turtle and Smalltooth Sawfish Construction Conditions*, and a Barge Plan.

2.5.3 Cumulative Impacts to Protected Species and Habitats

A "cumulative impact", according to the definition in the Council of Environmental Quality Regulations (40 CFR 1508.7), is "the impact on the environment, which results from the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions." The project would impact mangroves and buttonwoods growing on uplands between the roadway and a rip-rap shoreline. Most of the project area is heavily urbanized and the project area lacks wetlands, therefore no wetland impacts are anticipated. No designated Critical Habitats would be affected, and no adverse impacts to any listed species would occur under the Preferred Alternative. FDOT will follow the *Standard Specifications for Road and Bridge Construction*, which contains Best Management Practices to avoid and minimize impacts during construction, as well as the *NOAA Protected Species Construction Conditions* and other measures

to avoid impacts to wildlife. For these reasons, no cumulative impacts are anticipated as a result of the Preferred Alternative.

2.5.4 Avoidance, Minimization, and Mitigation

Impacts to protected species and habitats were sequentially avoided and then minimized during alternatives development, first by utilizing an existing transportation corridor and then by reducing the project footprint to minimize the area impacted. The area of expanded bridge and right-of-way was the minimum required to meet current FDOT standards.

The FDOT *Standards Specifications for Road and Bridge Construction* will be implemented to further minimize impacts. The USFWS *Standard Manatee Conditions for In-Water Work* and NMFS *Sea Turtle and Smalltooth Sawfish Construction Conditions* will be implemented during construction. Additional surveys are anticipated for seagrass and benthic resources prior to construction and unavoidable impacts to EFH will require mitigation. Additional information on impacts to EFH is provided in Section 4.2.

3 Wetland Evaluation

This project was evaluated for impacts to wetlands and other surface waters in accordance with FDOT's *PD&E Manual, Wetlands and Other Surface Waters,* which incorporates the requirements of the National Environmental Policy Act (NEPA) and related federal and state laws. Wetlands are protected under Section 404 of the Clean Water Act. Guidance is provided in Executive Order 11990, Protection of Wetlands, which establishes a national policy to "avoid to the extent possible the long and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative". The USACE has the authority to regulate work in Waters of the U.S. under Section 10 of the Rivers and Harbors Act of 1899 and the USFWS acts as a commenting body where permitted actions may affect listed species. In Florida, state authority over activities in state surface waters and wetlands is administered by the Florida Department of Environmental Protection and the five Water Management Districts.

Wetlands, as stated in Section 373.019(27) F.S. and in 33 CFR 328.3(b) and as used by the USACE in administering Section 404 of the Clean Water Act, are defined as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions."

Surface waters are considered by Section 373.019(21) F.S. to be waters on the surface of the earth, contained in bounds created naturally or artificially, including the Atlantic Ocean, the Gulf of Mexico, bays, bayous, sounds, estuaries, lagoons, lakes, ponds, impoundments, rivers, streams, springs, creeks, branches, sloughs, tributaries, and other watercourses. Regulatory agencies do not typically require mitigation for impacts to surface waters other than wetlands.

3.1 Methodology

Wetlands and OSW were initially evaluated using aerial imagery, NRCS soils data, FLUCCS mapping, and USFWS NWI mapping. Wetlands and OSWS were inspected and their locations in the project corridor were field verified. Preliminary field investigations occurred on September 16, 2022. Benthic surveys were conducted from September 16 to 19, 2022, and on June 13, 2023 to characterize the benthic and marine habitats. Additional wetland assessments, including mapping buttonwoods and mangrove areas, were conducted on August 16, 2023 and January 11, 2024.

Wetlands are typically mapped in the field using three parameters as indicators of wetlands: presence of hydrophytic vegetation, hydric soils, and hydrology, utilizing methodologies consistent with the USACE *Federal Manual for Identifying and Delineating Jurisdictional Wetlands* (1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region* (2010), Chapter 62-340, Florida Administrative Code, and the *Florida Wetlands Delineation Manual* (Gilbert et. al. 2011). Specific information sources and databases utilized for identifying wetlands and OSWs include NRCS soils data, SFWMD Land Use data, and historic aerial imagery.

Through the ETDM system, SFWMD noted the potential presence of wetlands and OSWs associated with Biscayne Bay, including submerged aquatic resources (seagrasses) and the NMFS recommended surveys to assess the seagrass, coral and hardbottom distribution. USFWS noted the need to avoid and minimize impacts to wetlands and to provide compensatory mitigation for unavoidable impacts.

3.1.1 Wetlands and Other Surface Waters in the Project Area

The marine portions of the project area are considered an Other Surface Water and are part of Biscayne Bay. Biscayne Bay is classified as an Outstanding Florida Water and is a designated Aquatic Preserve within the project area. Upland portions of the causeway in Pelican Harbor Park contain buttonwood (*Conocarpus erectus*), black mangrove (*Avicennia germinans)*, red mangrove (*Rhizophora mangle)*, and white mangrove (*Laguncularia racemose*) species with sporadic coverage by invasive and nuisance species (e.g. Tropical almond, Brazilian pepper, etc*.)*. A portion of the temporary construction easement is located below the mean high water line, to facilitate access during construction. Mangroves, seagrass, and buttonwoods were observed at or below the mean high water line within this easement area. The shorelines in the project corridor are either armored or covered in rip-rap. Shoal grass (*Haludule wrightii)* was observed growing along the shallower portions of the permanently inundated shoreline, ranging from sparse to moderate density coverage.

3.1.2 Impact Assessment

Mangroves and buttonwoods growing on that island that are within the project footprint would be directly impacted during construction. Mangroves and buttonwoods in the temporary construction easement in Pelican Harbor Park will be revegetated, the area converted to new right-of-way would not be revegetated. Jurisdictional wetlands were not identified within or adjacent to the project area, as these mangroves are not hydrologically connected to other wetlands and lack suitable soil conditions. The existing mangroves are a fringe community located adjacent to OSW/Biscayne Bay. Shading impacts to Biscayne Bay are anticipated from the 0.3-acre increase in bridge area. See **Table 3.1** and **Table 2.2** for a summary of anticipated impacts to these habitats as a result

Table 3.1 Impacts to Wetland Habitats

	Preferred Alt	
Resource	**Temporary Impacts to Construction Easement in Pelican Harbor Park (acres)**	**Long Term Impacts Under Preferred Alternative (acres)**
NWI (Estuarine and Marine Deepwater Habitat)	0.05	0.3 (shading)
Buttonwoods and Mangroves	0.05	0.27
Seagrass (discontinuous)	0.0094	0.0091 (Shading)
Seagrass (continuous)	0.0054	0.0018 (Shading)

3.1.3 Avoidance, Minimization, and Mitigation

Impacts to protected species and habitats were sequentially avoided and then minimized during alternatives development, first by utilizing an existing transportation corridor and then by reducing the project footprint to minimize the area impacted. The area of expanded bridge and right-of-way was the minimum required to meet current FDOT standards. To minimize potential impacts, FDOT will follow the FDOT Standard Specifications for Road and Bridge Construction including the development of a stormwater management plan and will utilize erosion control BMPs to reduce offsite migration of project-related materials and sediment. BMPs will include turbidity barriers, silt fence or other viable perimeter erosion control, inlet protection systems, sediment barriers, temporary stabilization measures (i.e. seeding or sod), etc. Mangroves adjacent will be tied back and out of the way of construction when possible to avoid unnecessary impacts.

4 Essential Fish Habitat

This project was evaluated for impacts to EFH in accordance with FDOT's *PD&E Manual, Essential Fish Habitat,* which incorporates the requirements of the National Environmental Policy Act (NEPA) and related federal and state laws. The Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1801 et seq), and amendments, require the identification of EFH for Federally managed fishery species and the implementation of measures to conserve and enhance this habitat. EFH is defined as "those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity." For the purpose of interpreting the definition of EFH, "waters" includes aquatic areas and their associated physical, chemical, and biological properties that are used by fish, and may include areas historically used by fish, where appropriate; "substrate" includes sediment, hard bottom, structures underlying the waters, and associated biological communities; "necessary" means the habitat required to support a sustainable fishery and a healthy ecosystem; "spawning, breeding, feeding, or growth to maturity" encompasses a species' full life cycle. The *NMFS Users Guide to Essential Fish Habitat Designations by the South Atlantic Fishery Management Council* (2021) was followed in evaluating potential EFH.

4.1 Methodology

During the ETDM process, the National Marine Fisheries Service (NMFS) provided comments stating that EFH occurs within the project area. Specifically, NMFS identified unconsolidated estuarine bottom and seagrass EFH and also noted the possible presence of hardbottom and coral EFH. NMFS further identified the presence of Habitat Areas of Particular Concern (HAPC) such as seagrass (HAPC for penaeid shrimp) and Biscayne Bay Aquatic Preserve (HAPC for federally managed species including snapper-grouper complex and migratory pelagic species). NMFS also commented that the project area may include coral attached to structures. Multiple meetings were held with NMFS personnel to discuss the proposed project, field survey approach, and assessment of potential impacts (**Appendix E**).

GIS and database research as well as multiple field surveys (**Appendix A**) were conducted to determine the presence, location, and status of NMFS-regulated resources. Specific information sources and databases utilized for identifying EFH includes NOAA Fisheries Essential Fish Habitat Mapper and NMFS EFH data and guidance documents. EFH types that were identified in the project area include corals, hardbottom, macroalgae, mangroves, seagrass, and unconsolidated bottom. Biscayne Bay and Seagrass are HAPCs that occur in the project area. Seagrass bed and coral locations mapped during field surveys are shown in **Figure 4.1**.

In-water surveys were conducted by environmental scientists via viewing buckets, snorkel, and SCUBA diving, depending on conditions within the Survey Area. Results of in-water transect surveys of the project area are documented in the attached EFH Survey Report (**Appendix A**).

4.2 Potential Impacts

The widening of the existing bridges would expand the area of bay overhung by bridge by 0.3 acre, which would expand the area of shading. In general, direct long-term impacts may occur to EFH types that are found within the footprint of the Preferred Alternative as existing bridge footings are replaced and shading

is increased. Shorter-term indirect impacts could occur to down-current EFH from increased siltation or temporary shading from a construction barge. Additional in-water surveys are anticipated before construction to identify the current locations of seagrasses, corals, and other resources relative to the project and area of impacts. This information will guide permitting and mitigation and will also inform the development of a Barge Plan to avoid and minimize impacts from spudding and shading. FDOT's *Standard Best Management Practices for Road and Bridge Construction* will be implemented to reduce indirect impacts such as down-current turbidity, scour or siltation. FDOT will also implement the *NOAA Protected Species Construction Conditions* (2021).

4.2.1.1 Coral

Small stony corals (*Siderastrea* spp.), approximately 5 cm in diameter and 1-2 cm in height, were observed within the shallow, subtidal zones near both bridges (**Figure 4.1**). No corals were found directly on or under any of the existing or proposed bridges. Corals were found to be in good health with no signs of bleaching, stress, or decline observed. Because the corals do not occur on the existing bridges that would be replaced, and would not be shaded by the proposed bridges, no long-term direct impacts to corals are anticipated. Potential short-term impacts could occur from siltation during construction or shading from barges, but those impacts will be avoided and minimized through implementation of BMPs and a Barge Plan. Because corals were not identified in the area of construction and indirect impacts would be avoided and minimized, a determination is made that Minimal impacts are anticipated to coral EFH.

4.2.1.2 Hardbottom

Field surveys revealed patches of hardbottom in the shallow, sub-tidal zones and in the temporary construction easement. Hardbottom that occurs under existing bridges could be directly impacted under the Preferred Alternative when existing bridge footings are removed and where they are replaced with new bridge footings. Potential short-term impacts could occur to a wider area from turbidity, scour or siltation during construction or shading from barges, but those impacts will be avoided and minimized through implementation of BMPs and a Barge Plan. Because hardbottom is widespread in Biscayne Bay and the area of direct impacts is relatively small, and because impacts will be avoided and minimized, a determination is made that Minimal impacts are anticipated to Hardbottom EFH.

4.2.1.3 Macroalgae

The most common benthic community in the project area were macroalgal species which occur throughout the survey area and include *Batophora* spp., *Udotea* spp., *Acetabluaria* spp., *Penicillus* spp., *and Caulerpa* spp. Isolated patches of seagrass were observed between some macroalgal communities. Those seagrass beds were generally discontinuous and intermixed with dense areas of macroalgae coverage. Macroalgae that occurs under existing bridges would be directly impacted by the Preferred Alternative. Potential short-term impacts could occur from siltation during construction or shading from barges, but those impacts will be avoided and minimized through implementation of BMPs and a Barge Plan. Because macroalgae is widespread in Biscayne Bay and the area of direct impacts is relatively small, and because impacts will be avoided and minimized, a determination is made that Minimal impacts are anticipated to Macroalgae EFH.

Figure 4.1 Results of In-Water Surveys

4.2.1.4 Mangroves

Mangrove species are present on the westernmost island in the project area, along the causeway that is part of Pelican Harbor Park, including areas that would be impacted under the Preferred Alternative (**Figure 4.1**). The impacted area includes black mangrove (*Avicennia germinans)*, red mangrove (*Rhizophora mangle)*, and white mangrove (*Laguncularia racemosa*) but buttonwood (*Conocarpus erectus*) is the dominant canopy species. These mangroves and buttonwoods are on uplands and are inaccessible to aquatic species during the regular tidal period.

Mangroves and buttonwoods within the area of new right-of-way would be removed under the Preferred Alternative to accommodate bringing the sidewalks up to current ADA Standards, resulting in 0.27 acre of permanent impacts. The area of new ROW was minimized as much as practicable through the alternatives development process while still meeting FDOT standards. Up to 0.05 acres of mangroves and buttonwoods would be temporarily impacted in the construction easement in Pelican Harbor Park. Because the area of direct impacts is relatively small and occurs in uplands adjacent to a rip-rap shoreline, and because impacts to mangroves will be minimized, a determination is made that Minimal impacts are anticipated to Mangrove EFH.

4.2.1.5 Seagrass

Seagrass is EFH for spiny lobster, penaid shrimp, and snapper-grouper species. Seagrass coverage as mapped by the FWC Marine Resources GIS tool is shown in **Figure 1.8**. In-water surveys were performed in September 2022 and June 2023 to map the current extent of seagrass and the results are shown in **Figure 4.1**. Seagrasses, including *Thalassia testudinum, Halodule wrightii, Syringodium filiforme*, and *Halophila decipiens*, were mapped in multiple locations throughout the project area, but the areas underneath the existing bridges did not contain seagrass. Seagrass beds were generally discontinuous and intermixed with dense areas of macroalgaes. As mapped by field surveys, under the Preferred Alternative the widened bridges would result in the additional shading of approximately 0.0109 acre of seagrass beds (discontinuous and continuous). The temporary construction easement would result in a total of 0.0148 acre of impacts to seagrass beds (discontinuous and continuous). The location and extent of seagrass beds changes over time and additional field surveys to map seagrass prior to construction are anticipated. A Barge Plan will be developed to avoid and minimize impacts to seagrasses (and other resources). Unavoidable impacts to seagrasses will be mitigated in accordance with NMFS requirements.

4.2.1.6 Unconsolidated Estuarine Bottom

Sand and shell bottom occurs throughout marine portions of the project area and is considered Unconsolidated Estuarine Bottom EFH. This EFH is found beneath the existing bridges, including where direct impacts would occur under the Preferred Alternative. Unconsolidated bottom forms EFH for specific life stages of estuarine and nearshore snapper-grouper species as well as spiny lobster. Snapper-grouper and spiny lobster are mobile species that are anticipated to leave the vicinity of construction, so construction impacts would be brief and temporary. FDOT will also implement the *NOAA Protected Species Construction Conditions* (2021) to further avoid and minimize impacts from construction. Unconsolidated Estuarine Bottom EFH is common and widespread in the vicinity of the project. Long term direct impacts would result from new bridge footings; however, these are relatively small in size compared

with the expanse of unconsolidated bottom and would replace existing bridge footings. The FDOT *Standard Best Management Practices for Road and Bridge Construction* and a Barge Plan will be followed, minimizing temporary impacts during construction. Because of the small relative size of direct impacts and avoidance and minimization measure, Minimal impacts are anticipated to Unconsolidated Estuarine Bottom EFH.

4.2.1.7 Habitat Areas of Particular Concern

Seagrass occurs in the project area and is a HAPC for penaeid shrimp. The results of in-water surveys for seagrass are displayed in **Figure 4.1**. Seagrass was observed within shallow, subtidal zones to the north and south of both bridge pairs and ranged in coverage from continuous and moderately dense to discontinuous with sparse coverage. Condition of seagrass varied from good (with no signs of decline or stress observed) to poor (with heavy epiphytic coverage on seagrass and signs of decline observed). Additional surveys to map seagrass coverage prior to construction are anticipated. A Barge Plan will then be developed that avoids and minimizes impacts to seagrasses. The Barge Plan will address barge placement, timing, and spudding locations, as well as transit and docking locations.

The NMFS through the ETDM system identified that Biscayne Bay is a HAPC for federally managed species including snapper-grouper complex and migratory pelagic species. According to the *NMFS Users Guide to Essential Fish Habitat Designations by the South Atlantic Fishery Management Council* (2021), Biscayne Bay is classified as a HAPC for spiny lobster. The Biscayne Bay HAPC includes all marine portions of the project area, including the project corridor where direct impacts would occur. Long term direct impacts to Biscayne Bay would result from new bridge supports in the water; however, these supports are relatively small in size compared with Biscayne Bay and would replace existing bridge supports, creating relatively little change from the existing conditions. The FDOT *Standard Best Management Practices for Road and Bridge Construction* will be followed, minimizing temporary impacts during construction. Snappers, groupers, migratory pelagics, and spiny lobster are mobile species that are anticipated to leave the vicinity of construction, so construction impacts would be brief and temporary. FDOT will also implement the *NOAA Protected Species Construction Conditions* (2021) and will implement measures to prevent discharge of demolition and construction debris, sediments and turbidity into the Biscayne Bay Aquatic Preserves HAPC. For these reasons, Minimal effects to Biscayne Bay HAPC are anticipated.

4.2.2 Avoidance, Minimization, and Mitigation

Avoidance and minimization of impacts occurred throughout the alternatives development process. While repair options were considered, they would not meet the purpose and need of the project and would not address the structural deficiencies of the existing bridges. The width of the proposed bridges was minimized as much as possible while meeting current FDOT requirements for spacing. The FDOT *Standard Best Management Practices for Road and Bridge Construction* will be implemented to further avoid and minimize impacts. As a result of the proposed drainage features included in the Preferred Alternative, the project would ultimately improve the treatment of stormwater runoff into Biscayne Bay.

Because seagrass beds can shift location and move from year-to-year, additional in-water surveys are anticipated prior to construction. Those surveys will map the location of seagrasses, corals, and other resources so that they can be avoided as much as possible by barge placement and construction activities.

Anchoring, spudding and grounding of work vessels, including barges, in mapped seagrass habitat should be avoided as much as possible. The location of the temporary construction should be reviewed to possibly be repositioned, if possible, to further avoid and minimize impacts. A Barge Plan will be developed that provides acceptable barge placement areas, maps barge avoidance areas, prescribes schedules for moving barges to minimize impacts from shading, and addresses the transit routes and docking locations used by the barge for the project. Avoiding and minimizing impacts to seagrasses and corals is of paramount importance in the Barge Plan because of the challenges with re-establishing and mitigating impacts.

Because the EFH types that occur in the project area are common and widespread, because avoidance and minimization measures will be implemented, and only Minimal impacts are anticipated to EFH, no cumulative impacts are anticipated to result from the Preferred Alternative.

5 Anticipated permits

Class I and III Permits from Miami-Dade County are anticipated. These permits will address work on, over, and in tidal coastal waters of Miami-Dade County, unavoidable impacts to mangrove/green buttonwood, and minor modifications to stabilized shoreline within County property.

Work within navigable and tidally influenced Waters of the US and alterations to the shoreline (e.g., temporary easement access) below the mean high water line is Federally jurisdictional and requires approval from the USACE under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act.

Under operating agreement with the Florida Department of Environmental Protection, the SFWMD maintains state jurisdiction for Environmental Resource Permit reviews under 62-330 FAC for roadway and transportation projects. SFWMD will coordinate any required Sovereign Submerged Lands easement or lease from the Florida Department of Environmental Protection Bureau of State Lands as part of the ERP permitting process, if necessary. Biscayne Bay within the project limits is not a designated navigation channel by the United States Coast Guard (USCG) and the project will not alter navigation within the project area, so no USCG jurisdiction/permit is required.

Coordination regarding impacts and permitting occurred with Miami-Dade County during meetings on October 12, 2023 and January 29, 2023. An initial meeting was held with NMFS on September 17, 2022 to discuss the approach and methods for field surveys. An additional meeting was held with NMFS on October 19, 2023 to discuss the results of surveys and approach to addressing EFH impacts. Coordination occurred with SFWMD and NMFS at an interagency meeting on September 21, 2023 (**Appendix E**).

6 Conclusion

Protected Species and Habitats

This project was evaluated for impacts to protected plant and animal species and their habitats in accordance with the FDOT's *PD&E Manual, Protected Species and Habitat,* which incorporates the requirements of the National Environmental Policy Act (NEPA) and related federal and state laws. Federal and state listed species with potential to occur in the project corridor were identified through research and coordination with US Fish and Wildlife Service, National Marine Fisheries Service, and the Florida Fish and Wildlife Conservation Commission. The project area includes portions of Biscayne Bay, which is considered an Aquatic Preserve, an Outstanding Florida Water, and designated Critical Habitat for the manatee. Field investigations of the project area were also conducted on multiple days and in different seasons to evaluate the potential presence of protected species and habitats. No adverse impacts are anticipated to any listed species from the Preferred Alternative, and protected species that may occur in the project area are shown in **Table 6.1** along with effect determinations. The next steps of this project will include agency coordination throughout the design phase as part of the permitting efforts.

Table 6.1 Species Effect Determinations Under Preferred Alternative

Common Name	Scientific Name	Federal Status	State Status	Occurrence Potential in Project Area	Effect Determination
Fauna Species					
American crocodile	*Crocodylus acutus*	FT	-	High	MANLAA
Boulder Star Coral	*Orbicella franksi*	FT	-	Medium	No Effect
Black skimmer	*Rynchops niger*	-	ST	High	No Adverse Effect Anticipated
Eastern indigo snake	*Drymarchon couperi*	FT	-	No	MANLAA
Elkhorn Coral	*Acropora palmata*	FT	-	Medium	No Effect
Florida bonneted bat	*Eumops floridanus*	FE	-	No	No Effect
Florida manatee	*Trichechus manatus latirostris*	FT	-	High	MANLAA
Giant Manta Ray	*Manta birostris*	FT	-	High	MANLAA
Green sea turtle	*Chelonia mydas*	FE	-	High	MANLAA
Hawksbill sea turtle	*Eretmochelys imbricata*	FE	-	Medium	MANLAA
Kemp's ridley sea turtle	*Lepidochelys kempii*	FE	-	Medium	MANLAA
Least tern	*Sternula antillarum*	-	ST	High	No Adverse Effect Anticipated
Leatherback sea turtle	*Dermochelys coriacea*	FE	-	Medium	MANLAA
Little blue heron	*Egretta caerulea*	-	ST	Medium	No Adverse Effect Anticipated

Common Name	Scientific Name	Federal Status	State Status	Occurrence Potential in Project Area	Effect Determination
Lobed Star Coral	*Orbicella annularis*	FT	-	Medium	No Effect
Loggerhead sea turtle	*Caretta caretta*	FT	-	High	MANLAA
Monarch butterfly	*Danaus plexippus*	FC	-	Medium	No Determination
Mountainous Star Coral	*Orbicella faveolate*	FT	-	Medium	No Effect
Pillar Coral	*Dendrogyra cylindrus*	FT	-	Medium	No Effect
Piping plover	*Charadrius melodus*	FT	-	Low	No Effect
Reddish egret	*Egretta rufescens*	-	ST		No Adverse Effect Anticipated
Roseate spoonbill	*Plataea ajaja*	-	ST		No Adverse Effect Anticipated
Rough cactus coral	*Mycetophyllia ferox*	FT	-	Medium	No Effect
Small-toothed sawfish	*Pristis pectinate*	FE	-	High	MANLAA
Staghorn coral	*Acropora cervicornis*	FT	-	Medium	No Effect
Tricolored bat	*Perimyotis subflavus*	FC	-		No Determination
Tricolored heron	*Egretta tricolor*	-	ST		No Adverse Effect Anticipated
Flora Species					
Beach jacquemontia	*Jacquemontia reclinata*	FE	-	No	No Effect
Big pine partridge pea	*Chamaecrista keyensis*	FE	-	No	No Effect
Blodgett's silverbush	*Argythamnia blodgettii*	FT	-	No	No Effect
Carter's small-flowered flax	*Linum carteri*	FE	-	No	No Effect
Carter's warea	*Warea carteri*	FE	-	No	No Effect
Cape Sable thoroughwort	*Chromolaena frustrata*	FE	-	No	No Effect
Crenulate lead-plant	*Amorpha crenulate*	FE	-	No	No Effect
Deltoid spurge	*Euphorbia deltoidea ssp. deltoidea*	FE	-	No	No Effect
Everglades bully	*Sideroxylon reclinatum ssp. austrofloridense*	FT	-	No	No Effect
Few-flowered fingergrass	*Digitaria pauciflora*	FT	-	No	No Effect
Florida Brickell-bush	*Brickellia mosieri*	FE	-	No	No Effect
Florida filmy fern	*Didymoglossum punctatum ssp. floridanum*	FE	-	No	No Effect
Florida prairie clover	*Dalea floridana*	FE	-	No	No Effect
Fragrant prickly apple	*Harrisia fragrans*	FE	-	No	No Effect
Garber's spurge	*Euphorbia garberi*	FT	-	No	No Effect

Common Name	Scientific Name	Federal Status	State Status	Occurrence Potential in Project Area	Effect Determination
Pinelands spurge	*Euphorbia deltoidea ssp. pinetorum*	FT	-	No	No Effect
Sand flax	*Linum arenicola*	FE	-	No	No Effect
Semaphore pricklypear	*Consolea corallicola*	FE	-	No	No Effect
Small's milkpea	*Galactia smallii*	FE	-	No	No Effect
Tiny polygala	*Polygala smallii*	FE	-	No	No Effect
Wedge spurge	*Euphorbia deltoidea ssp. adhaerens*	FE	-	No	No Effect
Wedge spurge	*Euphorbia deltoidea ssp. serpyllum*	FE	-	No	No Effect

Notes: FE = Federally Endangered, FT = Federally Threatened, FC= Federal Candidate, ST = State Threatened, MANLAA = May Affect, Not Likely to Adversely Affect

Wetlands and Other Surface Waters

This project was evaluated for impacts to wetlands and other surface waters in accordance with FDOT's *PD&E Manual, Wetlands and Other Surface Waters,* which incorporates the requirements of the National Environmental Policy Act (NEPA) and related federal and state laws. The Preferred Alternative would result in 0.27 acre of permanent, direct impacts as well as 0.05 acre of temporary impacts to mangroves and buttonwoods growing adjacent to Biscayne Bay. The project area includes portions of Biscayne Bay, which is considered an Other Surface Water, an Aquatic Preserve, an Outstanding Florida Water, and designated Critical Habitat for manatee.

Class I and III Permits from Miami-Dade County are anticipated. These permits will address work on, over, and in tidal coastal waters of Miami-Dade County, unavoidable impacts to mangrove/green buttonwood, and minor modifications to stabilized shoreline within County property.

Work within navigable and tidally influenced Waters of the US and alterations to the shoreline (e.g., temporary easement access) below the mean high water line is Federally jurisdictional and requires approval from the US Army Corps of Engineers under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act. Mangroves above the mean high water line are not jurisdictional wetlands and are anticipated to require mitigation.

Under operating agreement with the Florida Department of Environmental Protection, the South Florida Water Management District maintains State jurisdiction for Environmental Resource Permit reviews under 62-330 FAC for roadway and transportation projects. The South Florida Water Management District will coordinate any required Sovereign Submerged Lands easement or lease from the Florida Department of Environmental Protection Bureau of State Lands as part of the Environmental Resource Permit process, if necessary. Biscayne Bay within the project limits is not a designated navigation channel by the United

States Coast Guard and the project will not alter navigation within the project area, so no US Coast Guard permit is required.

Essential Fish Habitat

This project was evaluated for impacts to EFH in accordance with FDOT's *PD&E Manual, Essential Fish Habitat,* which incorporates the requirements of the National Environmental Policy Act (NEPA) and related federal and state laws. EFH is present in the form of corals, hardbottom, macroalgae, mangroves, seagrass, and unconsolidated bottom. Additionally, Biscayne Bay and Seagrass in the project area are classified by the National Marine Fisheries Service as Habitat Areas of Particular Concern.

Under the Preferred Alternative, the widened bridges would result in the additional shading of approximately 0.0109 acre of seagrass beds. The temporary construction easement would result in a total of 0.0148 acre of impacts to seagrass beds. Only Minimal impacts to EFH and HAPCs are anticipated under the Preferred Alternative. Avoidance and minimization has been incorporated into alternative development and will be further achieved through special construction conditions and a Barge Plan. Additional in-water surveys are anticipated prior to construction. Unavoidable impacts to seagrass will be mitigated in accordance with NMFS requirements.

6.1 Implementation Measures

- BMPs will be incorporated during construction to minimize wetland impacts and provide sediment and erosion control.
- BMPs will be incorporated during construction to minimize impacts to corals ,wetlands, seagrass, and managed species and provide turbidity, sediment, and erosion control.

6.2 Commitments

In order to assure that the proposed project will not adversely impact protected species with the potential to occur within the project area, the FDOT will adhere to the following commitments:

- Implement the *USFWS Standard Manatee Conditions for In-Water Work*.
- Implement the *NMFS Sea Turtle and Smalltooth Sawfish Construction Conditions*.
- Based on coordination with the National Marine Fisheries Service to comply with Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), FDOT commits to reinitiate consultation and provide information necessary to complete consultation on EFH prior to advancing the project to construction. FDOT's commitment is intended to provide reasonable assurance, per 23 CFR § 771.133, that requirements of the MSFCMA are able to and will be met prior to construction and this approach is affirmed by the National Marine Fisheries Service. The status of this commitment will be updated in any subsequent project re-evaluations.
- Prior to construction, in-water surveys will be conducted to map EFH, including seagrasses and corals, in the project area.

- Unavoidable impacts to seagrass will be mitigated in accordance with NMFS requirements.
- A Barge Plan will be developed that incorporates the results of in-water surveys to avoid and minimize impacts to EFH, including seagrasses and coral. The Barge Plan will also avoid and minimize potential impacts along all barge transit and docking routes used for the project.
- Implement the *NOAA Protected Species Construction Conditions* (2021.)
- If the listing status of the tricolored bat is elevated by USFWS to Threatened or Endangered and the Preferred Alternative is located within the consultation area during the design and permitting phase of the proposed project, FDOT commits to re-initiating consultation with the USFWS to determine the appropriate survey methodology and to address USFWS regulations regarding the protection of the tricolored bat.
- If the listing status of the monarch butterfly is elevated by USFWS to Threatened or Endangered and the Preferred Alternative is located within the consultation area, FDOT commits to re-initiating consultation with the USFWS during the design and permitting phase to determine the appropriate survey methodology and to address USFWS regulations regarding the protection of the monarch butterfly.

7 References

Efficient Transportation Decision Making (ETDM). 2022. Summary Report for Project #14484 – SR 934/NE 79th Street Bridges.

Florida Natural Areas Inventory (FNAI). 2001. Field guide to the rare animals of Florida. http://www.fnai.org/FieldGuide/pdf/Podomys_floridanus.PDF.

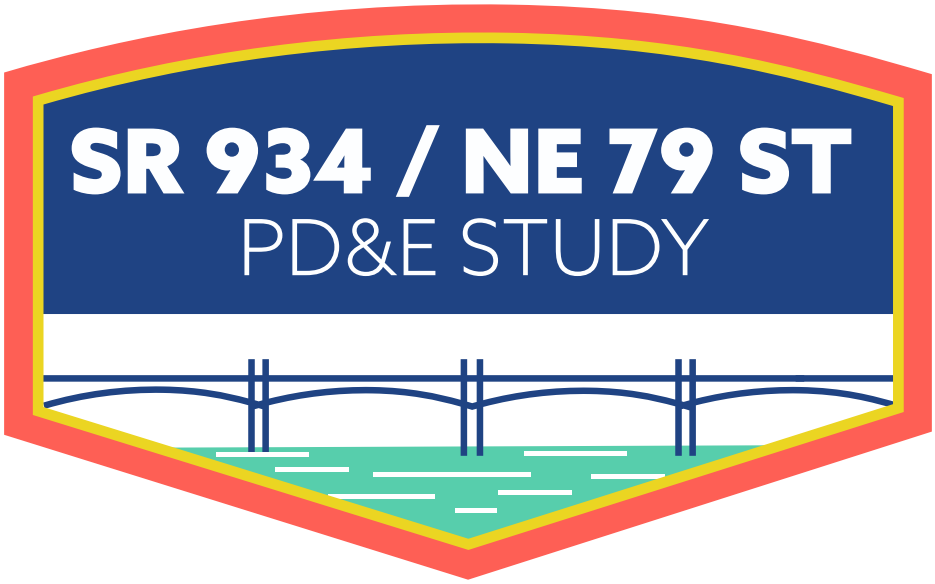
Gilbert, K.M., J.D. Tobe, R.W. Cantrell, M.E. Sweeley, and J.R. Cooper. 2011. The Florida Wetlands Delineation Manual. Florida Department of Environmental Protection. Tallahassee, Fl.

Natural Resources Conservation Service. 2023. Web Soil Survey. Online tool provided by U.S. Department of Agriculture. Available at: http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm.

U.S. Army Corps of Engineers (USACE). 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1. USACE Environmental Laboratory, Vicksburg, MS.

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

Appendix A Essential Fish Habitat Survey Report



ESSENTIAL FISH HABITAT FIELD SURVEY REPORT

FM Number- 449007-1-22-01

ETDM Number: 14484

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.

OCTOBER 2023

1. INTRODUCTION

FDOT District 6 is conducting a Project Development and Environment (PD&E) Study to determine the potential impacts of replacing four existing bridges on State Road (SR) 934 where they cross Biscayne Bay. The project area contains Essential Fish Habitat (EFH) and other protected resources. This document reports the methods and results of in-water surveys for EFH and benthic resources in the vicinity of the proposed bridge replacements. A full analysis of potential impacts from the build alternative will be documented in a Natural Resources Evaluation report that is being prepared as part of this PD&E study.

The Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), its amendments, and the 1996 Sustainable Fisheries Act specifies that each federal agency shall consult with the Secretary of Commerce with respect to any action authorized, funded, or undertaken, or proposed to be authorized, funded, or undertaken, by such agency that may adversely affect any EFH identified under this Act. The MSFCMA defines EFH as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." [16 U.S.C. § 1802(10)]. 'Waters' include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate (50 CFR 600.10). 'Substrate' includes sediment, hard bottom, structures underlying the waters, and associated biological communities (50 CFR 600.10). Necessary means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem (50 CFR 600.10).

The MSFCMA (16 U.S.C. § 1801 et. seq.) created regional Fishery Management Councils (FMCs) "responsible for the fisheries that require conservation and management in their region" and are required to "develop and amend Fishery Management Plans" (FMP). FMPs also provide information on Habitat Areas of Particular Concern (HAPC), which are subsets of EFH that are rare, particularly susceptible to human-induced degradation, especially ecologically important, or located in an environmentally stressed area. In 1996 the MSFCMA was amended and set forth a mandate for NMFS and regional FMCs to identify and protect important marine and anadromous (species born in fresh water that migrate to the ocean to mature, and then return to fresh water to spawn) fish habitat, and to establish means for designating EFH. Rules to implement the EFH provisions of this Act, [50 Code of Federal Regulations (CFR) §§ 600.805 - 600.930], specify that FMP amendments be prepared to describe and identify EFH. The rules also establish procedures to promote the protection of EFH through interagency coordination.

Section 305 (b)(2) of the MSFCMA [16 U.S.C. § 1855(b)(2)] states that federal agencies are required to consult with NMFS regarding projects that fund, permit, or carry out activities that may adversely affect EFH. An adverse effect "means any impact that reduces quality and/or quantity of EFH" (Preparing Essential Fish Habitat Assessments: A Guide for Federal Action Agencies. V1, 2004). EFH consultations are required for federal projects as well as projects requiring a federal action (i.e., a federal permit).

As required by the MSFCMA, an EFH assessment pursuant to *Part 2, Chapter 17 Essential Fish Habitat of the Project Development and Environment Manual* is in development for the SR 934/NE 79th St PD&E Study. The regional FMC that has jurisdiction in the project area is the South Atlantic Fishery Management Council (SAFMC).

Project Background

This project involves the potential replacement of four prestressed concrete slab bridges (two bridge pairs) connecting three islands within the Cities of Miami and North Bay Village in Miami-Dade County (**Figure 1**). The bridges are part of SR 934/NE 79th Street (John F. Kennedy Causeway). A complete description of the alternatives under evaluation is provided in the Natural Resources Evaluation Report. The build alternatives would replace the two bridge pairs but would not introduce new vehicle lanes or increase capacity. The bridges cross Biscayne Bay, which is designated as an Aquatic Preserve, Outstanding Florida Water (OFW), and state-designated nursery area for marine species. Biscayne Bay is also designated as a Habitat Area of Particular Concern (HAPC) as nursery habitat for federally managed species including snapper-grouper complex and migratory pelagic species.

During the Efficient Transportation Decision Making (ETDM) screening phase, comments were received from the National Marine Fisheries Service (NMFS) Environmental Technical Advisory Team (ETAT) member on 12/22/2021. NMFS project screening comments indicated that unconsolidated estuarine bottom, seagrass, hardbottom, and coral EFH may occur at the project site. NMFS identified the level of importance for these resources as high. The SAFMC identifies seagrass, corals, and hardbottom habitat as EFH supporting several species, including adult white grunt (*Haemulon plumieri*), juvenile and adult gray snapper (*Lutjanus griseus*), lane snapper (*L. synagris*), juvenile mutton snapper (Lutjanus analis), schoolmaster snapper (*L. apodus*), dog snapper (*L. jocu*), juvenile goliath grouper (*Epinephilus itijara*), and larval and juvenile pink shrimp (*Farfantepenaeus duorarum*). The SAFMC recognizes marine sandy (unconsolidated) bottom within the project area as EFH for black seabass (*Centropristis striata),* king mackerel (*Scomberomorus cavalla*), Spanish mackerel (*S. maculatus*), spiny lobster, and pink shrimp. The SAFMC also recognizes mangrove fringe and macroalgae as EFH supporting species within the snapper-grouper complex and for the spiny lobster. Seagrass is also an HAPC for penaeid shrimp and species in the snapper-grouper complex.

As part of the EFH assessment for this PD&E Study, field surveys were conducted to identify types and condition of EFH so that potential impacts from the proposed project can be evaluated.

Field Surveys

METHODOLOGY

Benthic surveys were conducted from September 16 to 19, 2022, and on June 13, 2023, to delineate seagrass within the project area, document existing EFH and its condition, and record any observations of protected species. Coordination occurred with NMFS before benthic surveys in order to identify appropriate survey methods, the targets of surveys (e.g. seagrasses, corals) and a proper survey area. Consistent with feedback provided by NMFS, in-water surveys were conducted by environmental scientists via viewing buckets, snorkel, and SCUBA diving, depending on conditions within the Survey Area. The location of seagrasses and corals was noted along with their condition. Surveys were planned around low tide utilizing NOAA tidal data to maximize visibility, beginning just after sunrise or in the afternoon, as daylight allowed. Water temperature ranged from 83°F to 88°F and visibility ranged from 3’ to 12’ during surveys.

The Survey Area (**Figure 1**) is defined as the waters within 100 feet of the bridges (approximately 7.2 acres total) and the temporary construction easement (approximately 0.8 acre). The in-water Survey Area was assessed along transects where scientists towed a GPS receiver with sub-meter accuracy to record transects and resource locations. Transects were oriented

Figure 1 Survey Area and Transects

perpendicular to SR 934 (north-south) and were spaced approximately 50 feet apart within the Survey Area (**Figure 1**).

Following transects within the Survey Area, scientists recorded benthic communities and conditions and noted any EFH types. For delineations of seagrass beds, 'start' and 'stop' points were collected and seagrass coverage density (estimated according to broad classification categories), species composition, and notes about health (e.g., heavy epiphytic coverage) were recorded.

Locations of any corals were recorded with a GPS receiver, identified to species, and hand-measured (approx. diameter and height). Notes about coral health (e.g., stressed, bleached, etc.) were recorded when observed. Sponge and macroalgae communities were recorded on data sheets when encountered along transects, including species composition and notes about coverage (e.g., transects dominated by macroalgae coverage). Substrate observations were recorded to characterize the benthic structure of the Survey Area, such as sand, shell, or hardbottom substrate. Other regulated species, such as marine mammals, imperiled birds, etc., were recorded when observed. Mangroves in the Survey Area were also delineated when encountered.

RESULTS

EFH types that were identified in the Survey Area include corals, hardbottom, macroalgae, mangroves, seagrass, and unconsolidated bottom (**Table 1**). The locations and conditions of each type of EFH are described below and presented in **Photographs 1** through **13** and **Figure 2**. Habitats in the Survey Area generally fell into three distinct areas or community types: the shallow, subtidal zone; bridge pilings and footings; and deepwater zones. Additionally, information on existing resources within a temporary construction easement (shown in blue hatching on **Figures** 1 and **2**) that is predominantly on land is also included.

Table 1 EFH Types Observed Within the Survey Area

EFH Type	Community Where Observed (Community Number)	Associated FMP
Corals	Shallow, Sub-Tidal Zone (1)	Coral
Hardbottom	Shallow, Sub-Tidal Zone (1); Temp. Construction Easement (4)	Snapper-grouper, Spiny lobster
Macroalgae	Shallow, Sub-Tidal Zone (1); Deep Water Zone (3); Temp. Construction Easement (4)	Shrimp, Snapper-Grouper, Spiny Lobster
Mangroves	Temp. Construction Easement (4)	Shrimp, Snapper-Grouper, Spiny Lobster
Seagrass	Shallow, Sub-Tidal Zone (1); Deep Water Zone (3); Temp. Construction Easement (4)	Shrimp, Snapper-Grouper, Spiny Lobster
Unconsolidated Bottom	Deep Water Zone (3)	Snapper-Grouper, Spiny Lobster

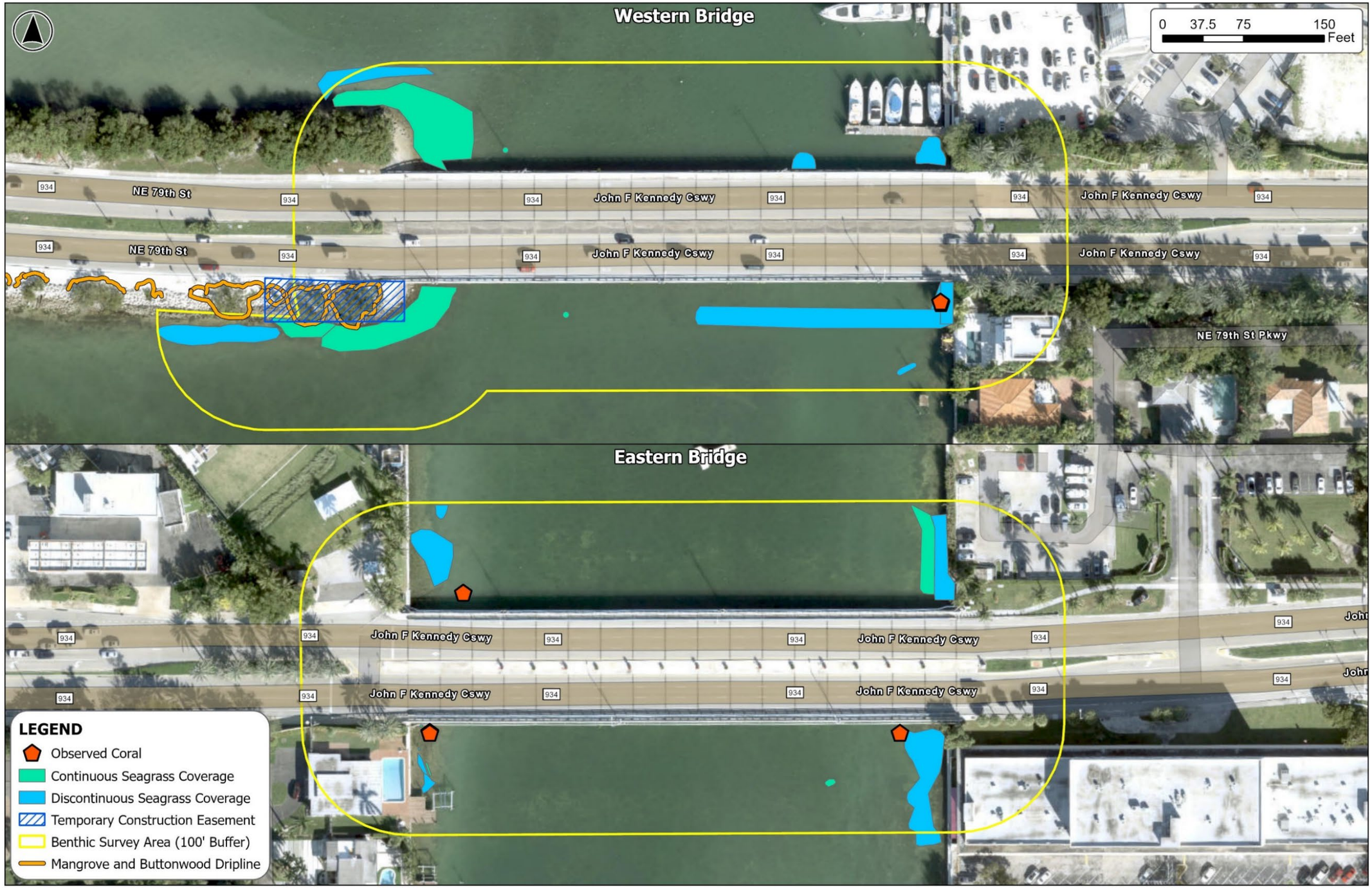


Figure 2 Benthic Observations in Survey Area

COMMUNITY NO. 1 – Shallow, Subtidal Zones

Shallow, subtidal zones occur at the western and eastern termini of each bridge pair, nearest to the land and extending approximately 45 feet from shore. At the western end of the westernmost bridges, small rubble or riprap substrate lines the shore. Seawalls line the shore at the eastern end of the westernmost bridges and at each end of the easternmost bridges. Small stony corals (*Siderastrea* spp.*),* approximately 5 cm in diameter and 1-2 cm in height*,* were observed within the shallow, subtidal zones near both bridges, but no corals were found directly on or under any of the bridges. Corals were found to be in good health with no signs of bleaching, stress, or decline observed.

Seagrass was observed within shallow, subtidal zones to the north and south of both bridge pairs and ranged in coverage from continuous and moderately dense to discontinuous with sparse coverage (**Figure 2**). Observed seagrass species within this community include *Halodule wrightii*, *Thalassia testudinum,* and *Syringodium filiforme*. Condition of seagrass varied from good (with no signs of decline or stress observed) to poor (with heavy epiphytic coverage on seagrass and signs of decline observed).

COMMUNITY NO. 2 – Bridge Pilings and Footings

Bridge pilings and footings occur underneath and are shaded by the bridges. Bridge pilings and footings occur in both the shallower photic zone, where sunlight is most available, and in a deeper zone toward the center of the bridges where sunlight is less available. Within the shallower zone, bridge pilings and footings exhibit dense coverage by sponges, octocorals, and tunicates. No stony corals were observed on any bridge structure. Substrates around bridge footings included rubble and unconsolidated bottom, such as sand. The deepest area under the bridges is approximately 9 to 12 feet deep and in these deeper areas the bridge pilings and footings were devoid of benthic resources.

COMMUNITY NO. 3 – Deep Water Zones

The most common benthic community in deep water areas were macroalgal species, including *Batophora* spp*., Udotea* spp*., Acetabluaria* spp*., Penicillus* spp*., and Caulerpa* spp*.* Isolated patches of seagrass were observed between some macroalgal communities. Those seagrass beds were generally discontinuous and intermixed with dense areas of macroalgae coverage. Seagrass species observed within this community include *Thalassia testudinum, Halodule wrightii*, *Syringodium filiforme*, and *Halophila decipiens*. Seagrass was generally found to be in good condition in the deeper water zones, with some shading from drift algal communities and minor epiphytic coverage observed. The substrate in deepwater areas was mostly comprised of sand and shell bottom.

COMMUNITY NO. 4 – Temporary Construction Easement

The temporary construction easement (**Figures 1** and **2**) is mostly an upland area with a substrate of rubble and riprap that transitions into discontinuous seagrass coverage (*Halodule wrightii* and *Syringodium filiforme*) in the shallow, subtidal zone of Biscayne Bay. Mangrove species are located within and adjacent to the proposed easement, including *Avicennia germinans* (black mangrove), *Rhizophora mangle* (red mangrove), and *Laguncularia racemosa* (white mangrove). Buttonwood (*Conocarpus erectus)* is the dominant canopy plant in this area*.* These mangroves and buttonwoods are predominantly upland and are inaccessible to aquatic species during the regular tidal period.

Field Photographs

The following photographs were taken in the Survey Area to document existing conditions.

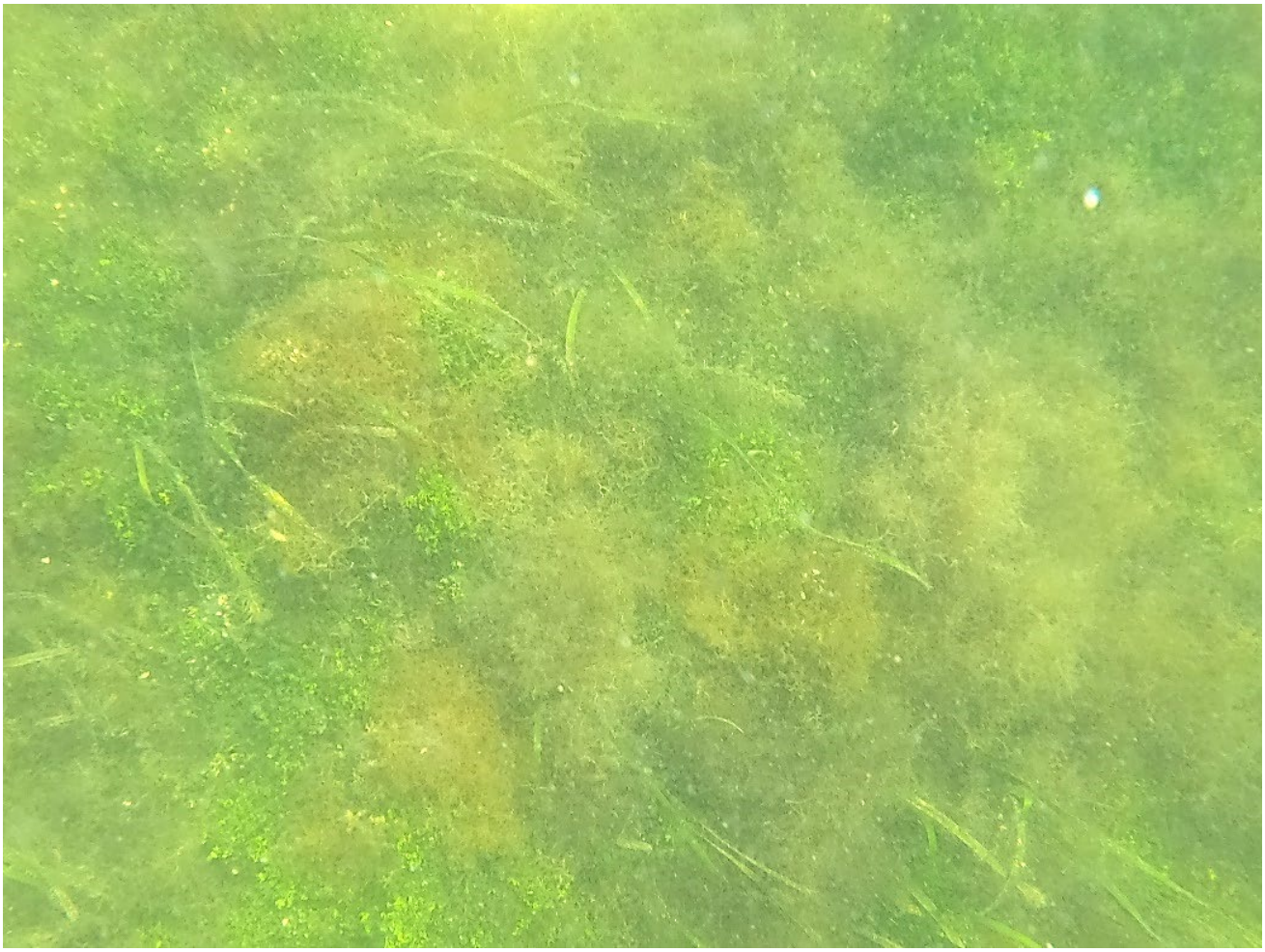


Photo 1 Sparse seagrass (*Thalassia testudinum*) observed growing within dense macroalgal (*Halimeda* spp.) and drift algae communities in the shallow, sub-tidal zone on the north side of the eastern bridge pair.

Photo 2 Continuous seagrass (*Syringodium filiforme*) with heavy epiphytic coverage observed along the southwestern shoreline of the western bridge (in the shallow, subtidal zone).

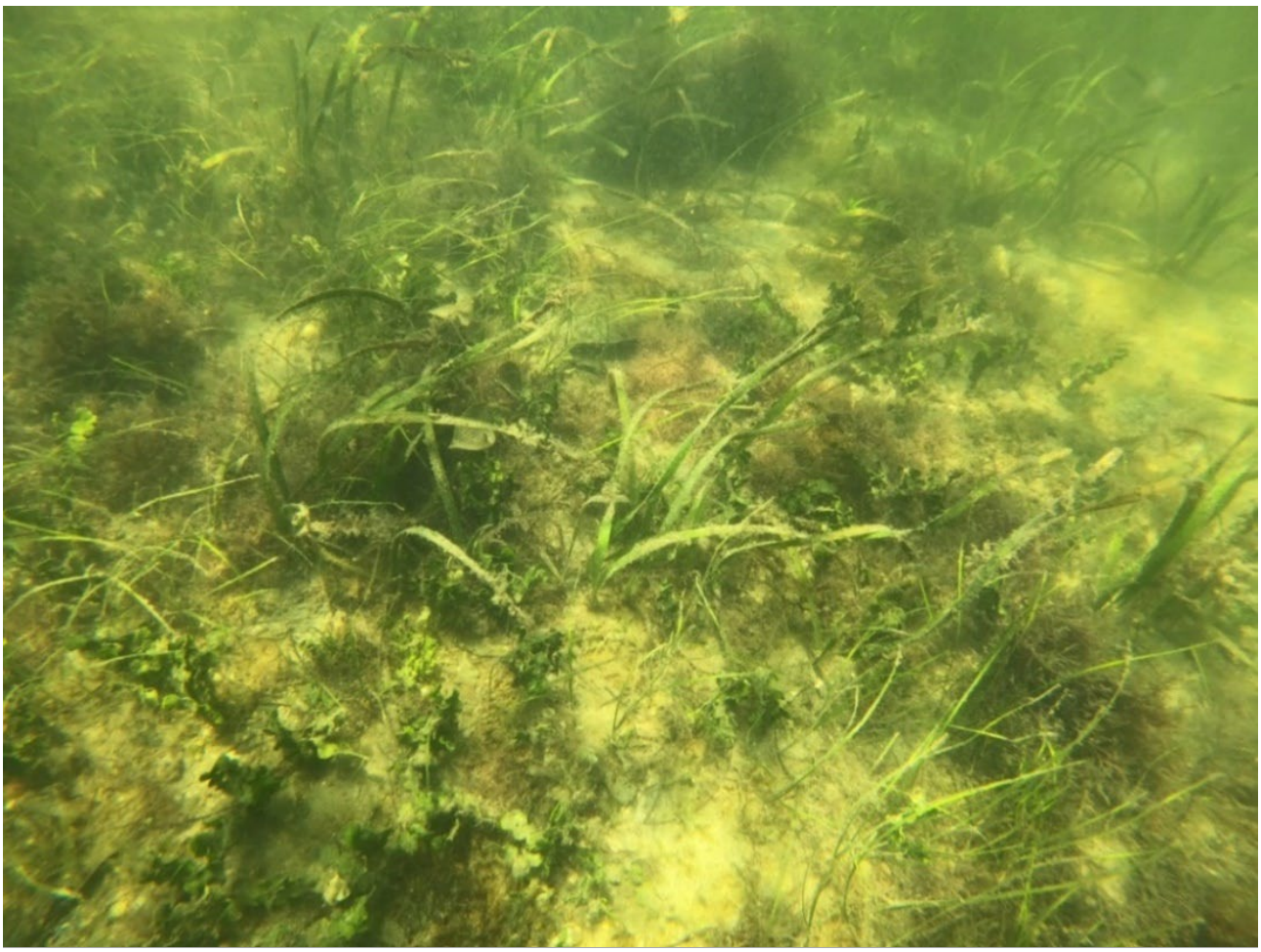


Photo 3 Continuous, moderately sparse seagrass (*Thalassia testudinum* and *Halodule wrightii*) observed intermixed with macroalgae (*Halimeda* spp.) near the southeast corner of the western bridge (in the shallow, subtidal zone).

Photo 4 Small stony coral (*Siderastrea siderea*) observed in shell hash substrate with discontinuous seagrass (*Halodule wrightii*) and macroalgae (*Caulerpa* spp.) near the southeastern corner of the eastern bridge (in the shallow, subtidal zone).

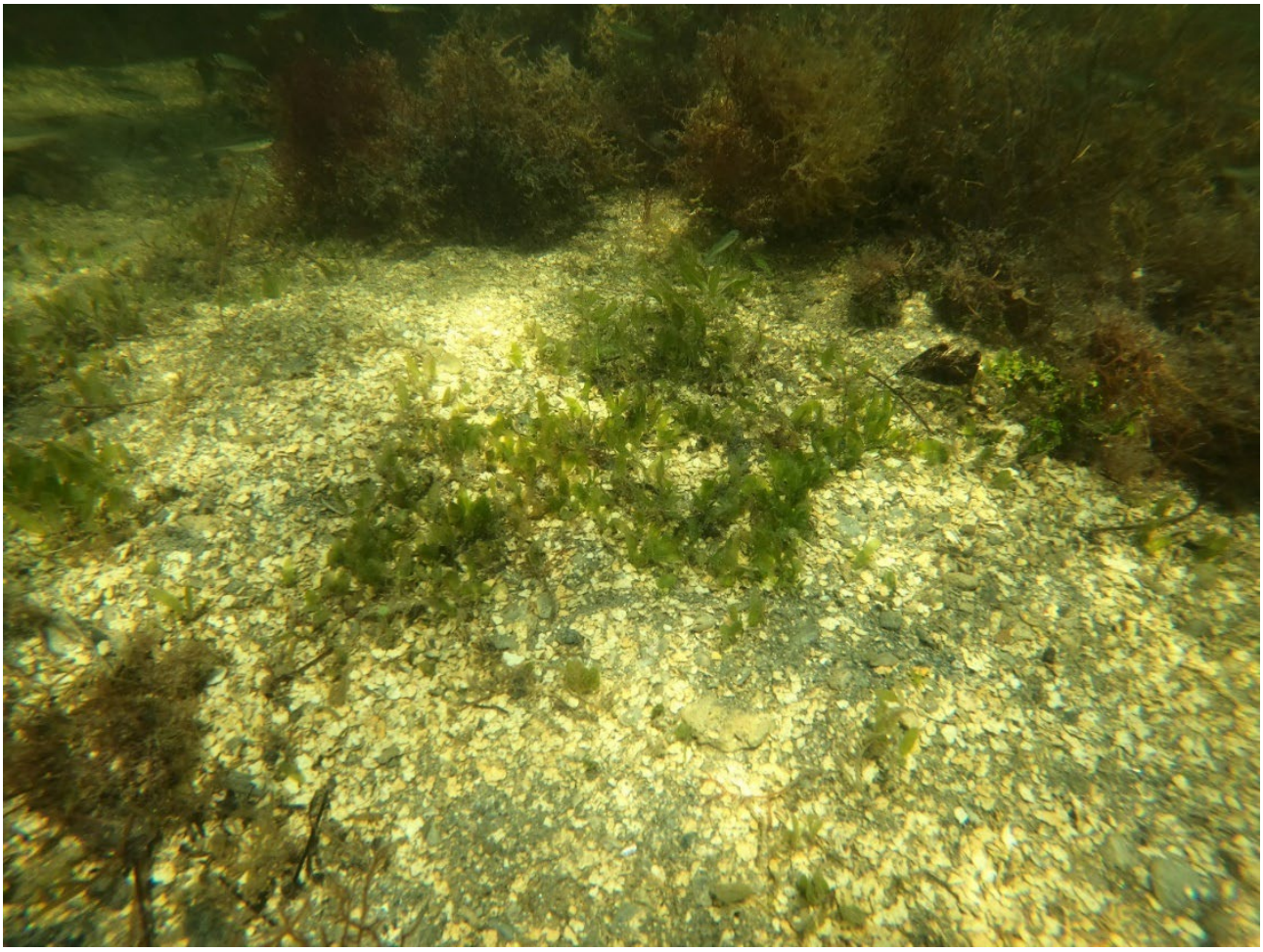


Photo 5 Discontinuous seagrass (*Halophila decipiens)* observed in shell hash substrate near the southeast corner of the eastern bridge (within the shallow, subtidal zone).

Photo 6 Moderately dense seagrass (*Halodule wrightii*) intermixed with macroalgae (*Halimeda* spp. and *Caulerpa* spp.) observed along the northwest limits of the Survey Area for the western bridges (in the deep water zone).

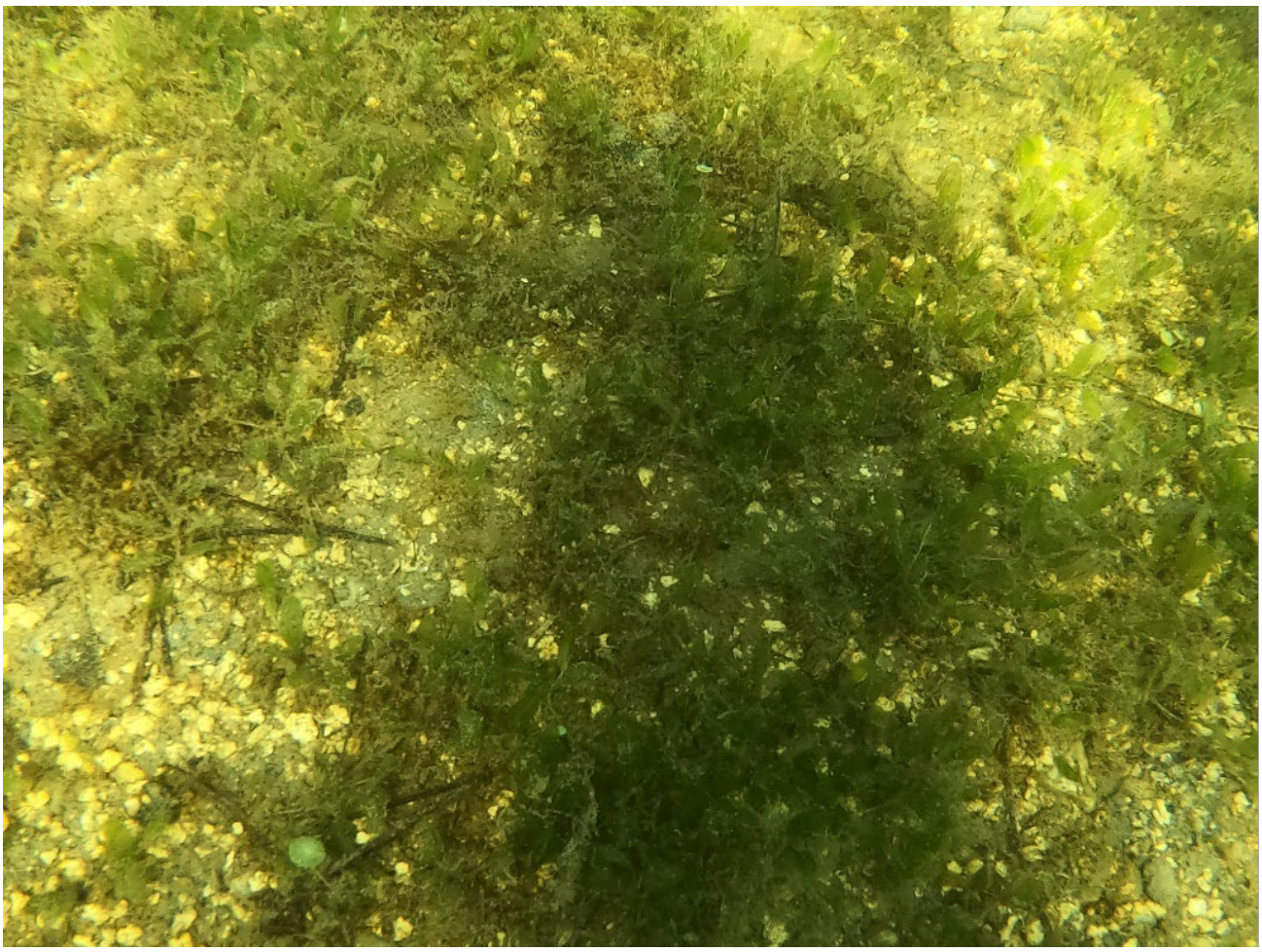


Photo 7 Seagrass (*Halophila decipiens*) observed colonizing areas of shell hash between macroalgal beds near the center of the western bridge crossing (in the deep water zone).

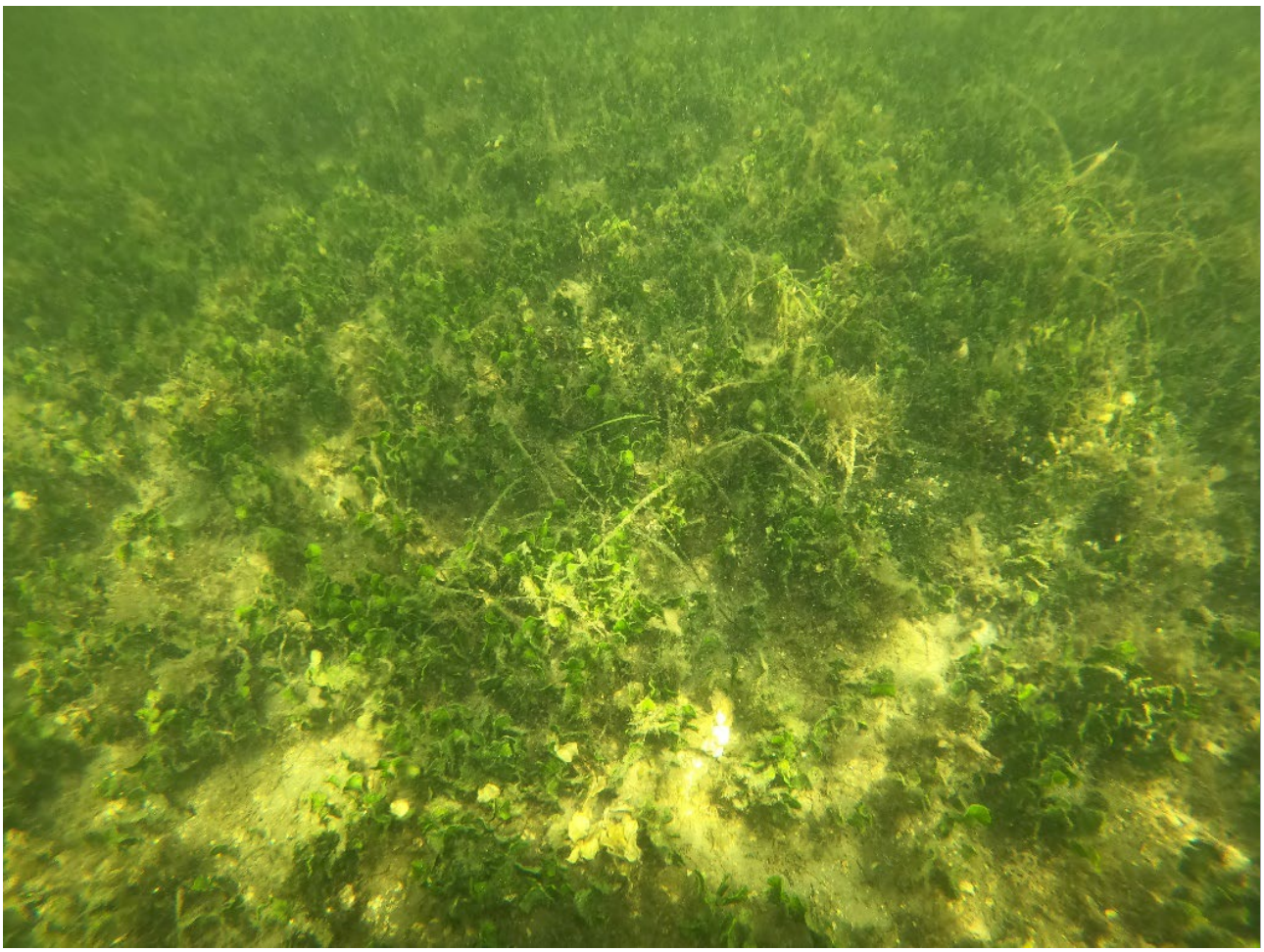


Photo 8 Sparse, discontinuous seagrass (*Halodule wrightii)* observed growing within beds of macroalgae (*Halimeda* spp.) in the southwestern portion of the western bridge Survey Area (in the deep water zone).

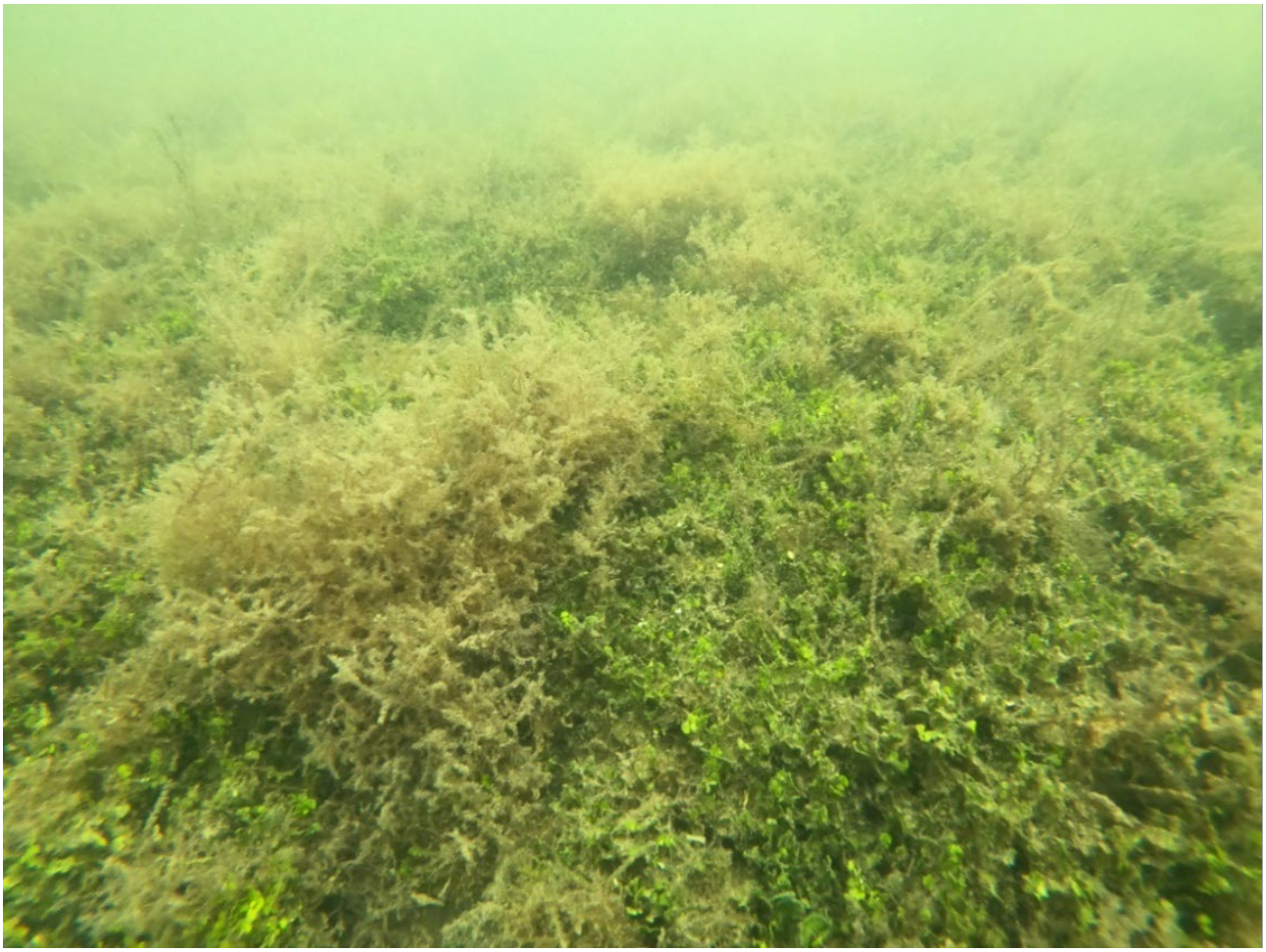


Photo 9 Dense macroalgal communities (*Halimeda* spp.) observed in the deep water zone of the western bridges (typical).

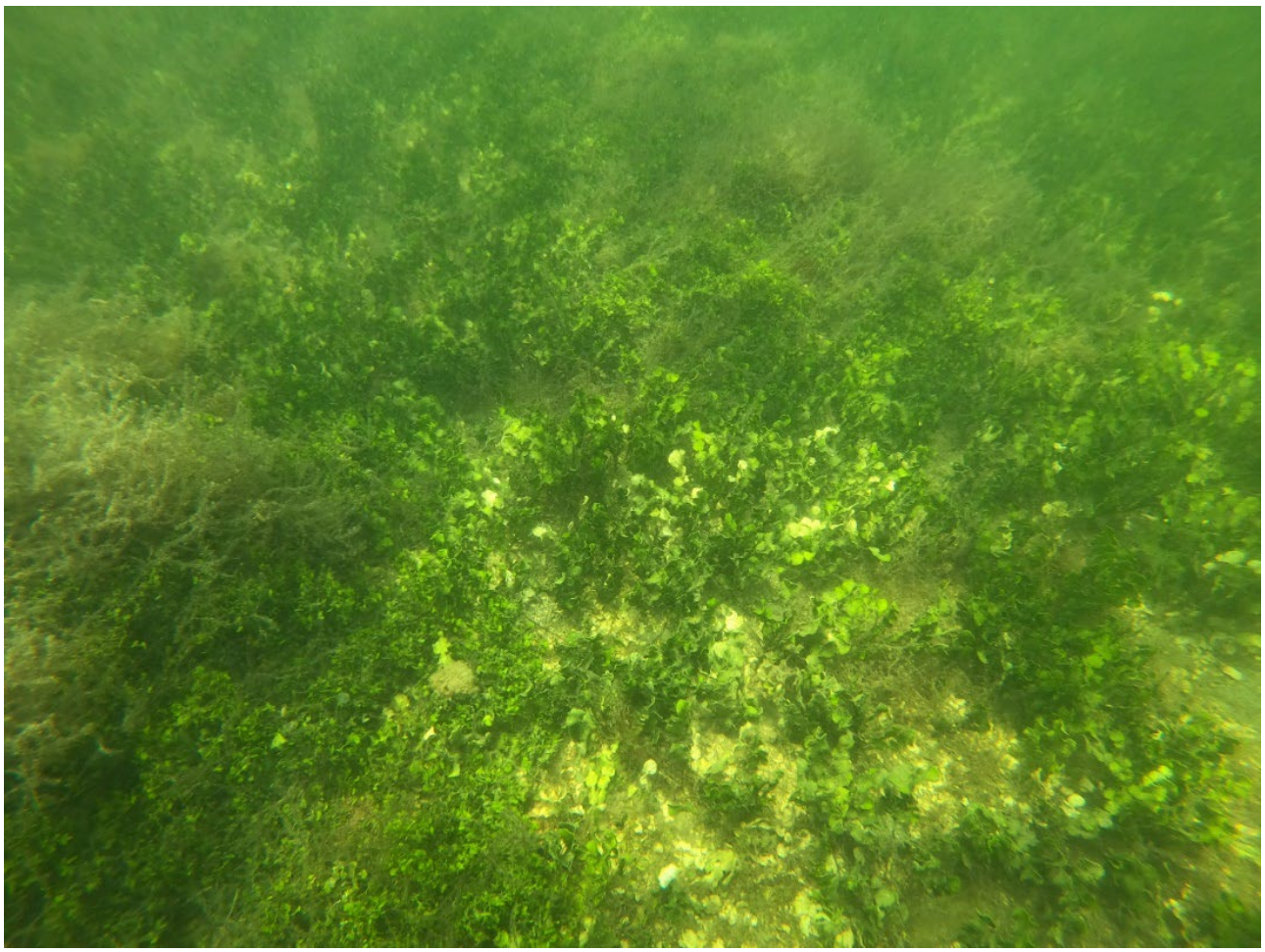


Photo 10 Dense macroalgal communities (*Halimeda* spp.) observed in the deep water zone of the eastern bridges (typical).

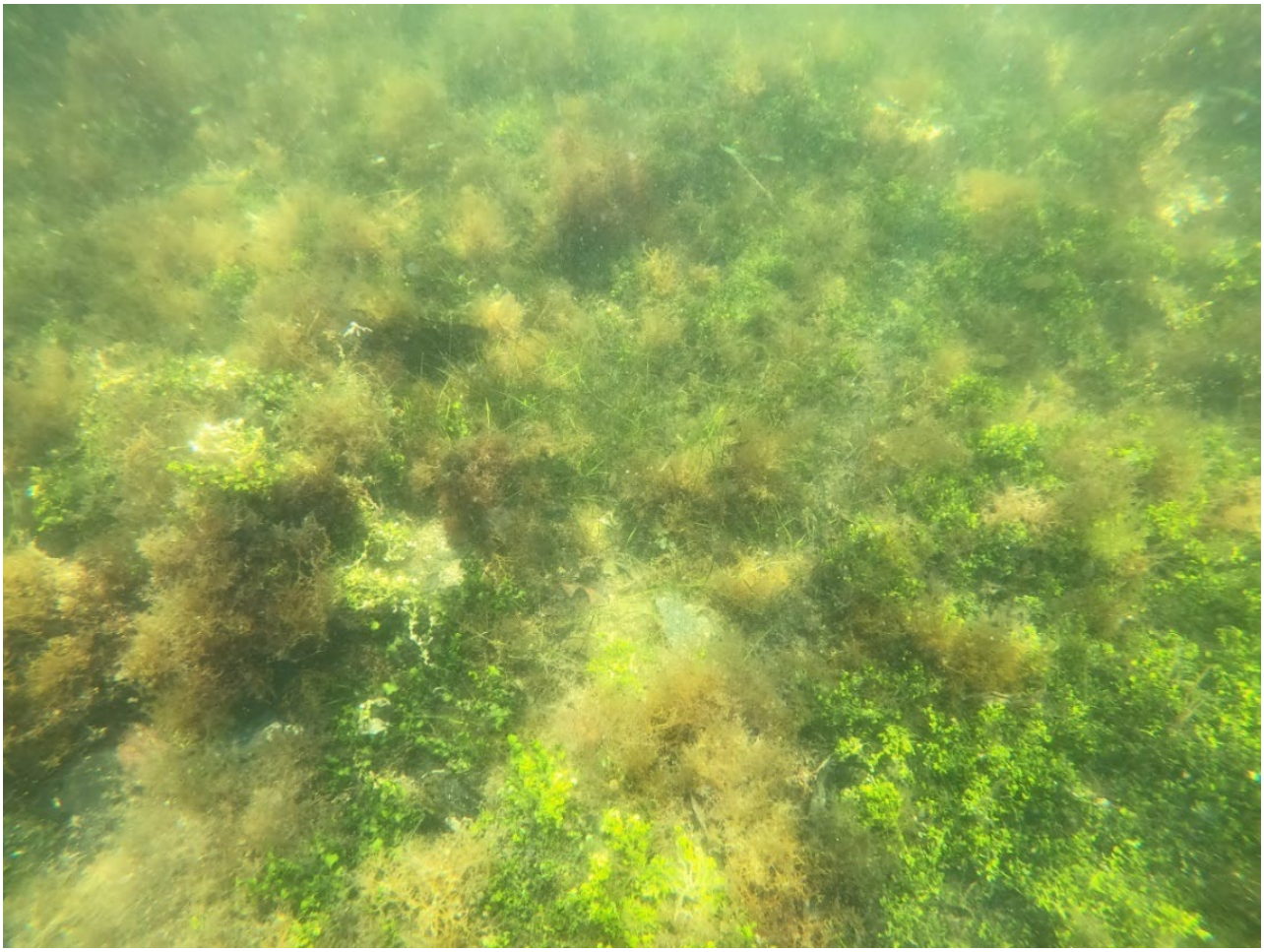


Photo 11 Discontinuous seagrass (*Halodule wrightii)* observed intermixed with macroalgae (*Halimeda* spp.*)* and drift algae*,* observed near the southwest corner of the eastern bridge (in the deep water zone).

Photo 13 Dense coverage by sponges, octocorals, and tunicates observed on bridge pilings in the photic zone on the south side of the eastern bridges (typical).

Photo 12 Mangrove and buttonwood fringe located on the southwestern shoreline of the western bridges within the temporary construction easement.

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ANTICIPATED PERMITS

Class I and III Permits from Miami-Dade County are anticipated. These permits will address work on, over, and in tidal coastal waters of Miami-Dade County, unavoidable impacts to mangrove/green buttonwood, and minor modifications to stabilized shoreline within County property.

Work within navigable and tidally influenced Waters of the US and alterations to the shoreline (e.g., temporary easement access) below the mean high water line is Federally jurisdictional and requires approval from the USACE under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act.

Under operating agreement with the Florida Department of Environmental Protection (FDEP), the South Florida Water Management District (SFWMD) maintains State jurisdiction for Environmental Resource Permit reviews under 62-330 FAC for roadway and transportation projects. SFWMD will coordinate any required Sovereign Submerged Lands easement or lease from the FDEP Bureau of State Lands as part of the ERP permitting process, if necessary. Biscayne Bay within the project limits is not a designated navigation channel by the United States Coast Guard (USCG) and the project will not alter navigation within the project area, so no USCG jurisdiction/permit is required. Anticipated permits are summarized in **Table 2**.

Table 2 Anticipated Permits

Agency with Jurisdiction	Permit Type
USACE	Federal Section 404 and Section 10 Permit
SFWMD	Environmental Resource Permit, Sovereign Submerged Lands Easement and/or Lease (as needed)
Miami-Dade County	Class I Coastal Permit, Class III Proprietary Permit
FDEP/USEPA	National Pollutant Discharge Elimination System Construction Generic Permit

Appendix B Florida Bonneted Bat Survey Report

SR 934 / NE 79 ST
PD&E STUDY

FLORIDA BONNETED BAT LIMITED ROOST SURVEY REPORT

FM Number- 449007-1-22-01
ETDM Number: 14484

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.

OCTOBER 2023

1. INTRODUCTION

FDOT District 6 is conducting a Project Development and Environment (PD&E) Study to determine the potential impacts of replacing four existing bridges on State Road (SR) 934 where they cross Biscayne Bay. Parts of the project are located within Urban Bat Area portions of the US Fish and Wildlife Service (USFWS) Consultation Area for Florida bonneted bat (*Eumops floridanus)*. This document reports the methods and results of limited roost surveys for Florida bonneted bat. A full analysis of potential impacts from the build alternative will be documented in a Natural Resources Evaluation report that is being prepared as part of this PD&E study.

Project Background

This project involves the potential replacement of four prestressed concrete slab bridges (two bridge pairs) along SR 934/NE 79th Street (John F. Kennedy Causeway). A complete description of the alternatives under evaluation is provided in the Natural Resources Evaluation Report. The build alternatives would replace the two bridge pairs but would not introduce new vehicle lanes or increase capacity. These bridges connect three islands within the Cities of Miami and North Bay Village, Miami-Dade County (**Figure 1**). No new right-of-way is required for the proposed project.

During the Efficient Transportation Decision Making (ETDM) screening phase, both the USFWS and the Florida Fish and Wildlife Conservation Commission (FWC) noted that Florida bonneted bat have potential to occur in or near the project area and USFWS recommended following the USFWS Florida Bonneted Bat Consultation Key. The consultation key is included in the attached USFWS Florida Bonneted Bat Consultation Guidelines (October 2019)(**Attachment 1**) and was followed in evaluating potential impacts from the project to Florida bonneted bat. There are no records of Florida bonneted bat in the project corridor, but because part of the project is located in the USFWS Consultation Area and potential roosting habitat occurs in the form of trees, a Limited Roost Survey was conducted. The methods and results of those surveys are provided below.

2. Field Surveys

METHODOLOGY

Field surveys of the project corridor were conducted on March 14, 2023 and followed the protocols in the USFWS Limited Roost Survey Framework (**Attachment 1**). The intent of surveys was to determine if Florida bonneted bats are roosting in the project corridor and if so, to locate active roosts so that take can be avoided and minimized. Biologists with prior experience conducting Florida bonneted bat roost surveys traversed the project corridor, visually inspecting all trees and elevated structures for cavities and any sign of use by bats (e.g. staining, presence or smell of guano). Observers had binoculars and a camera mounted on a pole to aid observations. No acoustic surveys or emergence surveys were conducted. Potential roost evaluations focused on the footprint for the proposed improvements (**Figure 1**) and any immediately adjacent trees. Within the limited area of the project footprint, approximately 60 trees were inspected.

Figure 1 Project Corridor and Consultation Area

The bridges that would be replaced by the proposed project currently have a clearance of approximately four feet above mean high water. Guidance from USFWS notes that Florida bonneted bats require at least 15 feet of clearance beneath a roost. There are no buildings that would be impacted by the proposed project.

RESULTS

The westernmost island in the project corridor is outside the USFWS consultation area for Florida bonneted bat. The bridges that are the subject of the proposed project are also outside the USFWS consultation area and are not considered potential roosting habitat due to insufficient vertical clearance.

The two islands that form North Bay Village are within the USFWS Consultation Area for Florida bonneted bat. These islands are completely urbanized with no natural habitats. The project corridor contains utility poles and landscaping trees but lacks any buildings or other man-made structures that may form potential roosting habitat. Landscaping trees are located within medians and along the edges of some portions of the right-of-way in North Bay Village. Most of the trees in the project corridor are date palms (*Phoenix dactylifera*), coconut palms (*Cocos nucifera*), royal palms (*Roystonea regia*), cabbage palms (*Sabal palmetto*), black olive (*Bucida buceras*), and green or silver Buttonwoods (*Conocarpus erectus*). No suitable cavities above 15 feet were observed in any trees, and no guano, staining, visual or auditory indications of bats were detected.

Because the project area does not contain any forest, snags or trees with cavities, hollows, deformities, decay, crevices or loose bark typical of roosting sites, it was determined that the project corridor lacks any suitable roosting habitat for Florida bonneted bats. While landscaping trees do occur in the median and along the edge of FDOT right-of-way, none of the trees in the project corridor meet the USFWS guidelines for potential roosting habitat because they lack voids of sufficient height. Metal utility poles are also present but lack voids that might support roosting by bats.

Field Photographs

The following photographs were taken in the project corridor to document existing conditions.

Photo 1 Planted median (Date palms, Kapok trees) and trees adjacent to sidewalk (Coconut palms, Royal Poincianas) at entrance to North Bay Village, immediately east of the western bridges

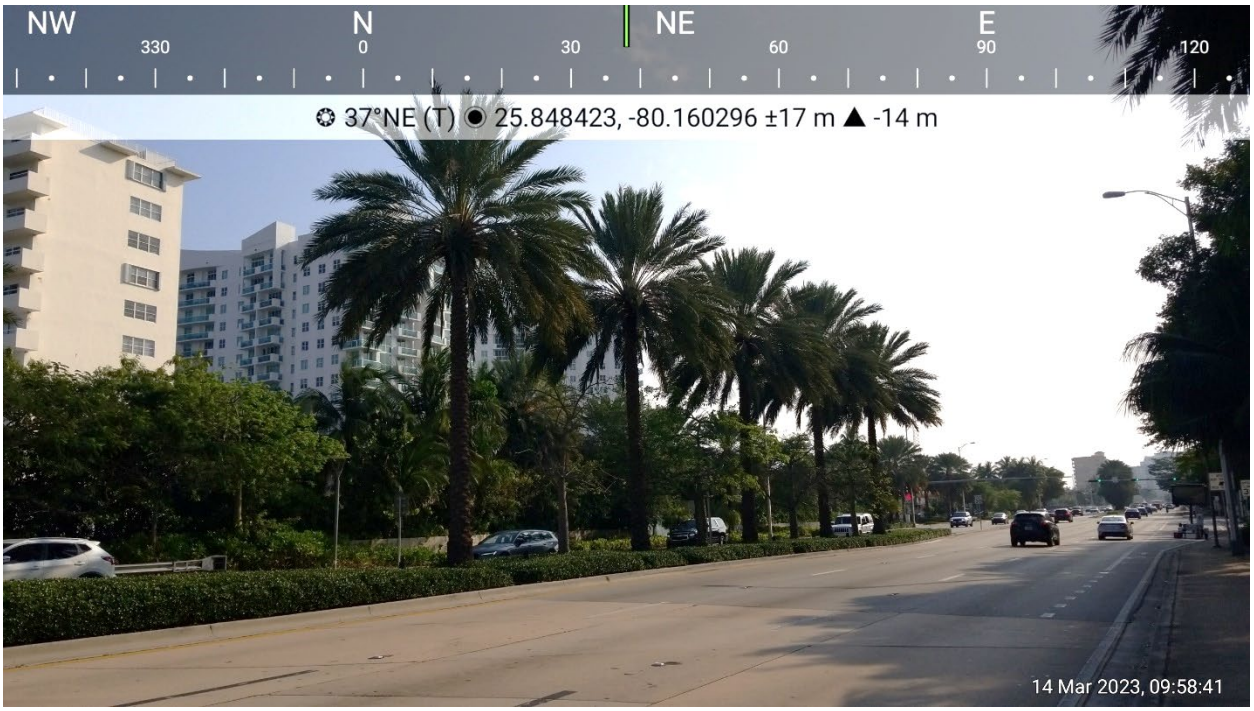


Photo 2 Landscaping located adjacent to the sidewalk and roadway west of Harbor Island Drive; predominantly Coconut and Date palms.

Photo 3 Landscaping planted around Harbor Island entrance/Harbor Island Drive; predominantly Date, cabbage, and royal palms.

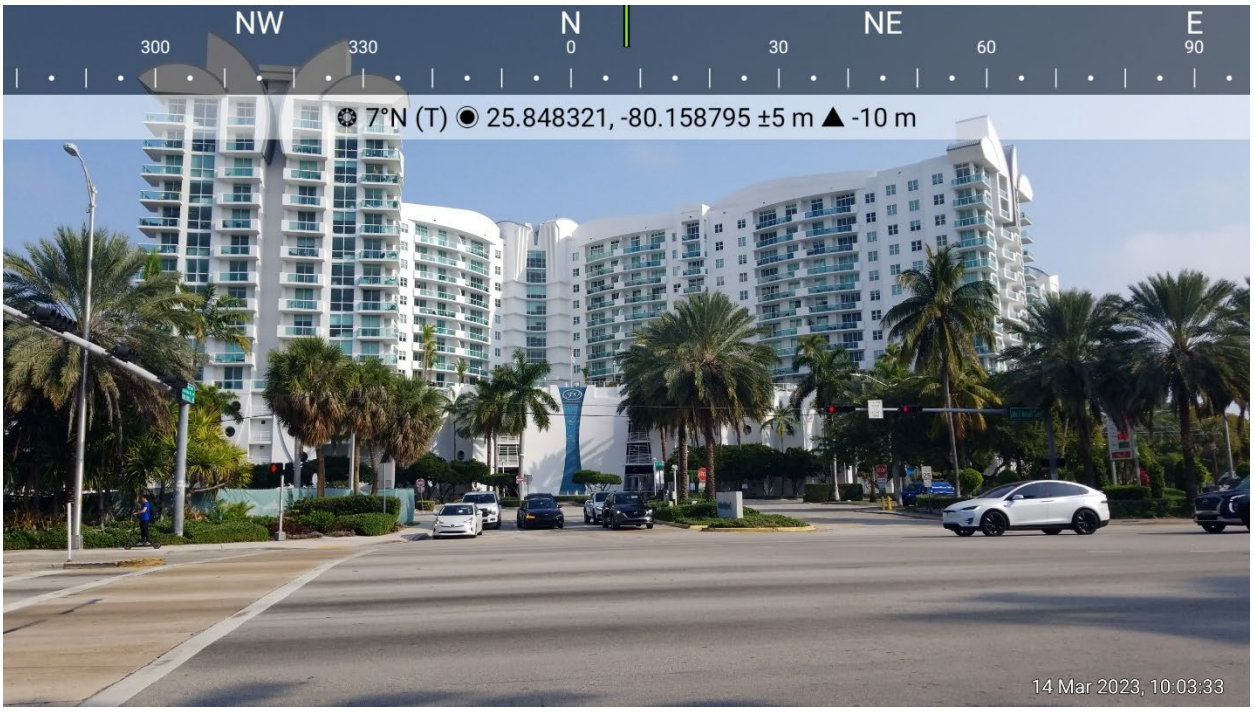


Photo 4 Landscaping adjacent to roadway and sidewalk east of Harbor Island Dr; predominantly *Ficus* spp. and Gumbo Limbo trees. Ficus tree in foreground had cavities identified, but none of suitable height for bat utilization.

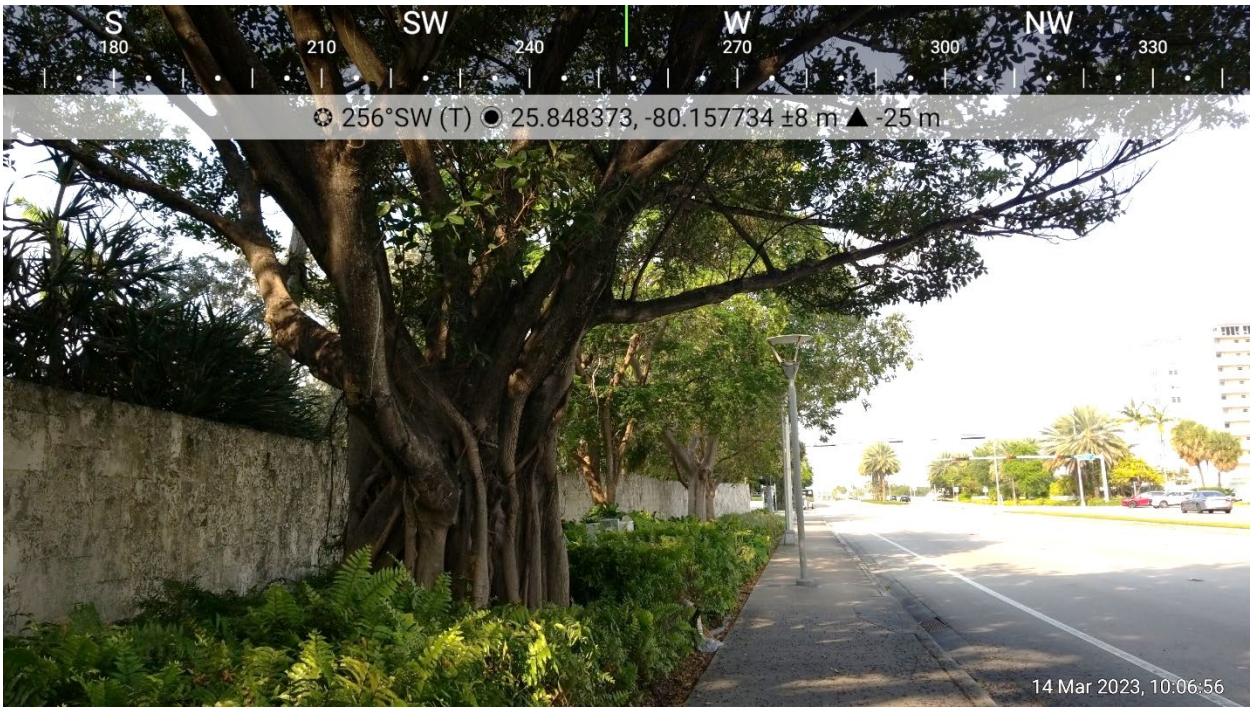


Photo 5 Landscaping immediately west of the eastern bridge pairs; predominantly Coconut palms, Black olive trees, Date palms, and Silver buttonwoods.

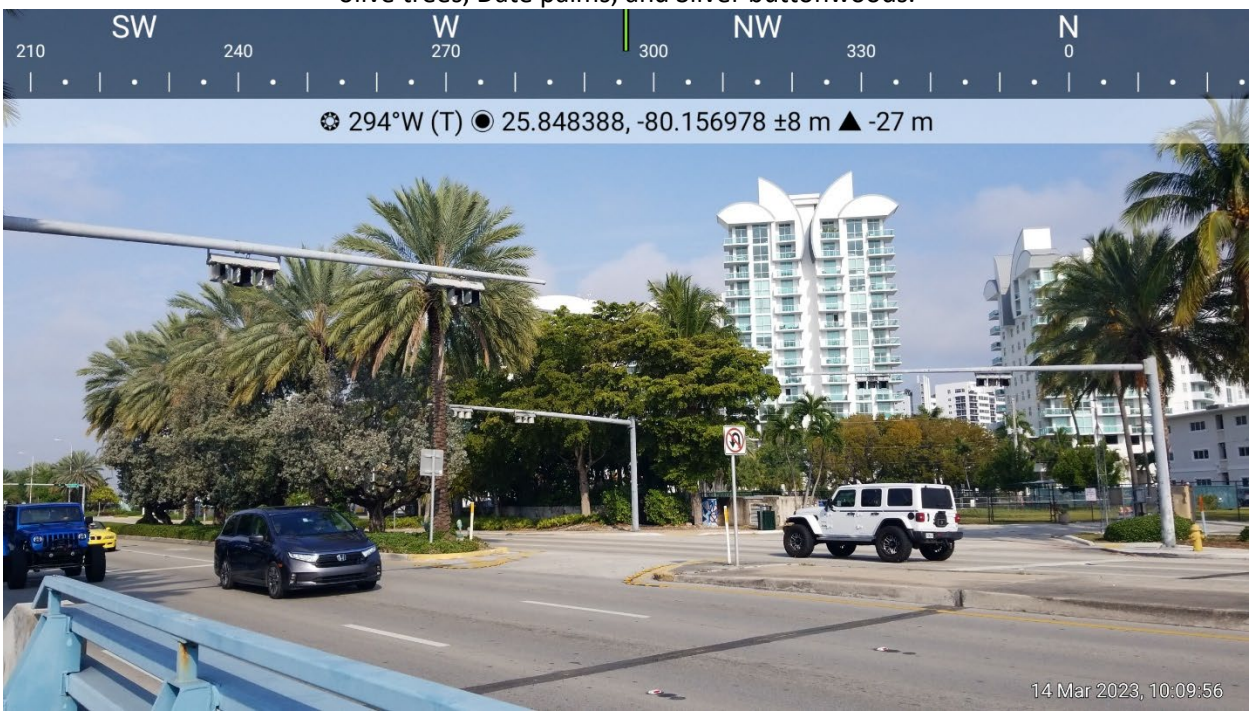


Photo 6 Landscaping located east of the eastern bridge pairs; predominantly Cabbage palms and Coconut palms.

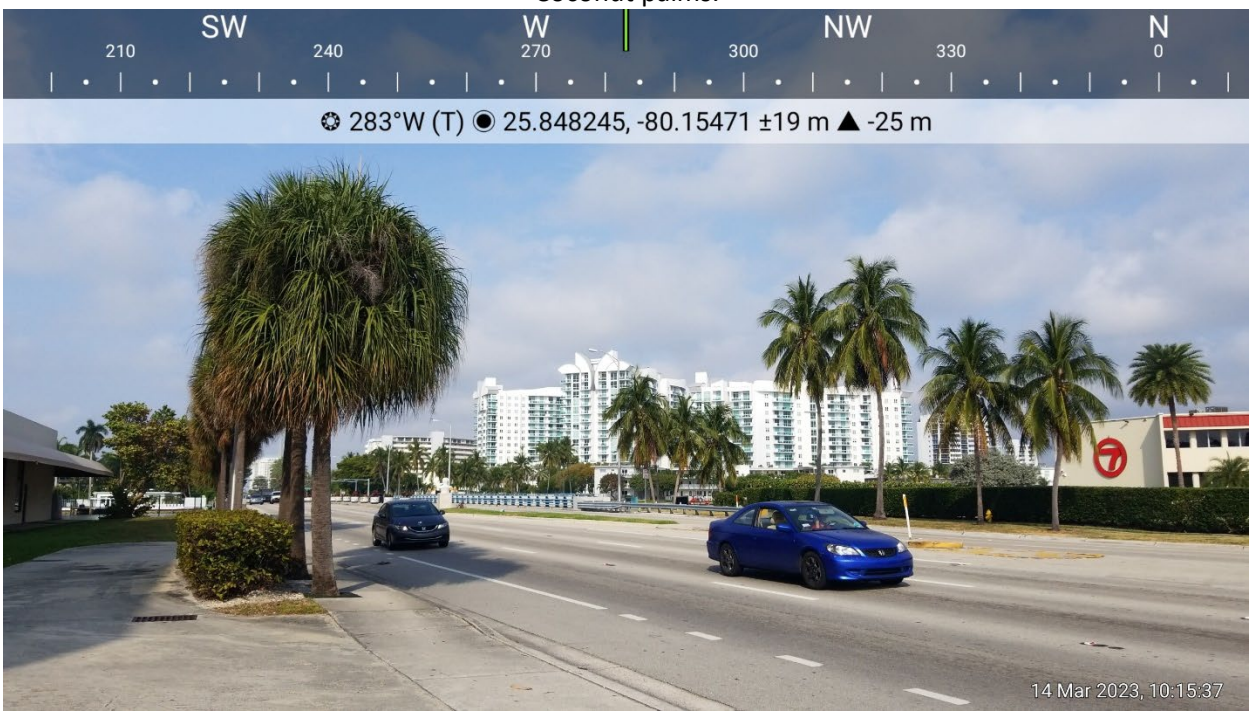


Photo 7 Landscaping located adjacent to sidewalk east of Adventure Avenue; predominantly Cabbage palms and Buttonwoods.

Photo 8 Close up of palm immediately southeast of westernmost bridges, on North Bay Island.

Photo 9 Palm tree in median and palms along southern right-of-way on North Bay Island

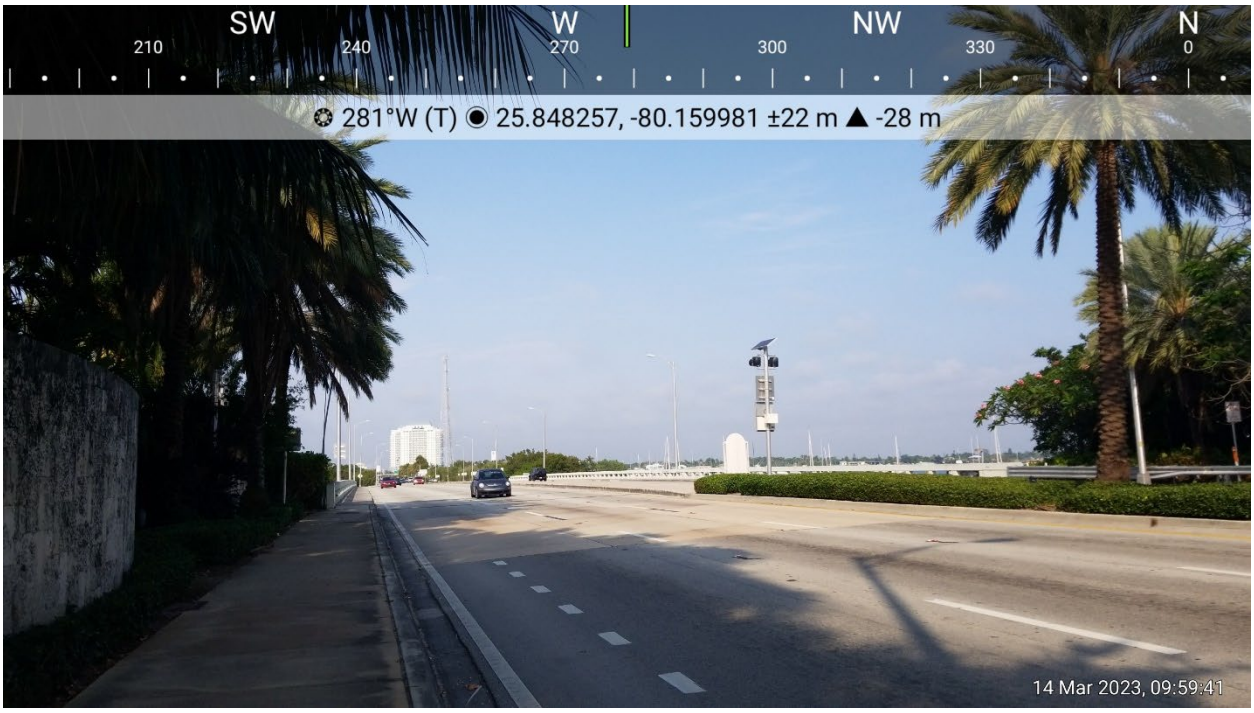


Photo 10 Trees along southern right-of-way on North Bay Island

Photo 11 Palms in median and beside sidewalk on North Bay Island

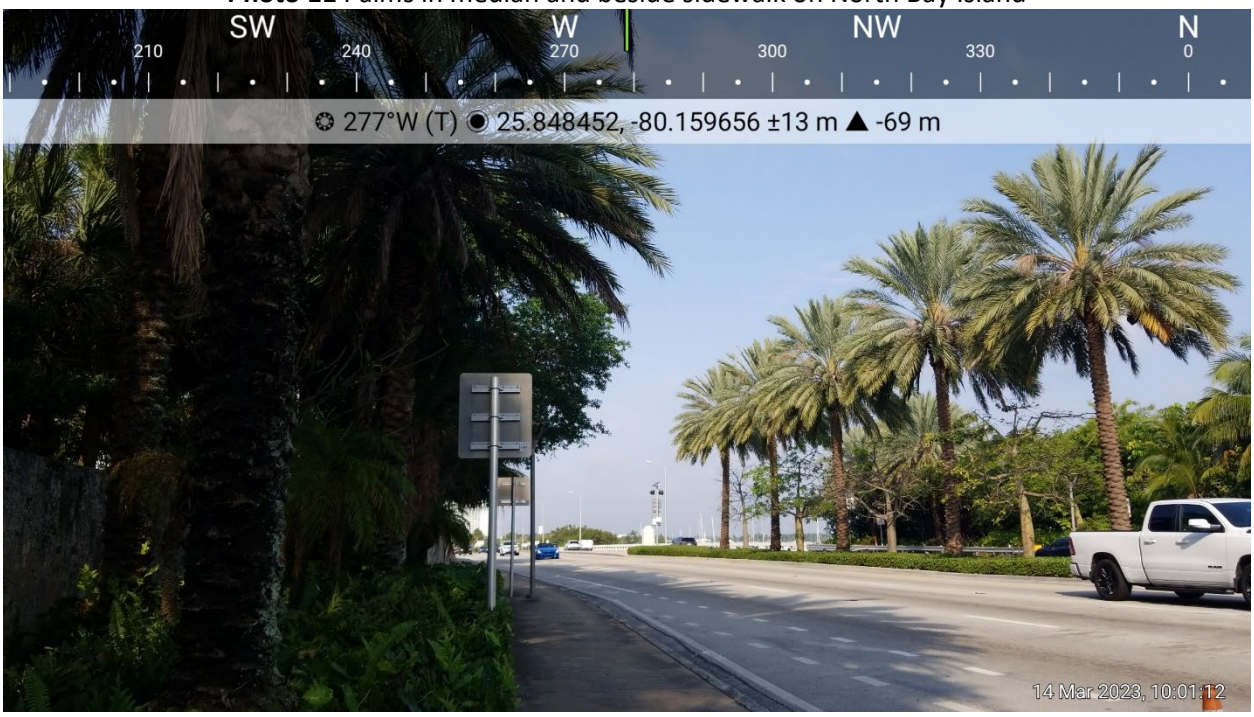


Photo 12 Close-up of palms on North Bay Island

Photo 13 Multi-trunk tree on North Bay Island

Photo 14 Close up of multi-trunked tree on North Bay Island

Photo 15 Close-up of strangler fig on North Bay Island

3. Summary

Part of the SR 934 bridge replacement project occurs in the USFWS consultation area for Florida bonneted bat. Limited roost surveys were conducted in the project corridor following USFWS guidelines. Those surveys included visual inspections of potential roost sites. The project corridor is heavily urbanized and contains landscaping trees but no natural plant communities. The existing bridges are too low to provide potential roosting sites, and there are no records of Florida bonneted bats in the project corridor. No indications of presence or use by bats was encountered during field surveys.

Florida Bonneted Bat Habitat Evaluation Supplementary Data

Data from additional field investigations that was gathered in January 2024 is presented below. This includes maps and corresponding tables showing tree species and data pertinent to evaluation as potential roosting habitat for Florida Bonneted Bat. No indications of bat utilization or potential roosting were observed.


West Dr
East Dr
79th S
Pirates Al
Pelican Harbor Marina
Miami View Dr
Center Bay Dr
Coquina Dr
Beachview Dr
North Bay Village
VICINITY MAP
1-4
1-3
1-2
1-1
NE 79th St
934
Pelican Harbor Dr
LEGEND
Tree Areas
Project Impacts (Permanent)
Project Corridor/Footprint
Project Impacts (Temporary Easements)
SR 934 PD&E STUDY
FBB LIMITED ROOST SURVEY - LOCATION MAP
SECTION 1 - WESTERN PROJECT LIMITS
0
125
250
500
Feet

SECTION 1 – WESTERN PROJECT LIMITS

Area 1 – SR 934 & Pelican Harbor Drive Intersection, West of Project Limits

Species Observed in Area	**Any above 17' H?**	**Any with cavities above 17' H?**	**Any disposition other than 'Remain'/'No Impacts'?**
Pigeon Plum (*Coccoloba diversifolia)*	No	No	No impacts anticipated.
Coconut palm (Cocos nucifera*)*	Yes	No	No impacts anticipated.
Brazilian pepper (*Schinus terebinthifolia)*	No	No	No impacts anticipated.
Seaside mahoe (*Thespesia populnea)*	Yes	No	No impacts anticipated.
Red mangrove (*Rhizophora mangle)*	Yes	No	No impacts anticipated.
White mangrove (*Laguncularia racemosa)*	Yes	No	No impacts anticipated.
Green buttonwood (*Conocarpus erectus)*	No	No	No impacts anticipated.

NOTES: Mangroves are located northwest of this intersection and tall coconut palms (17'+ H) are located west of Pelican Harbor Drive. No impacts anticipated, west of project limits. No signs of bat utilization observed.

REPRESENTATIVE PHOTOS OF AREA:


NW
300
330
N
0
NE
30
60
E
90
10°N (T) 25.848441, -80.167026 ±9m -20m
11 Jan 2024, 1:07:30 PM


SE
120
150
S
180
SW
210
240
W
270
185°S (T) 25.84856, -80.166745 ±12m -20m
11 Jan 2024, 1:08:39 PM

Area 2– South of SR 934

Species Observed in Area	Any above 17' H?	Any with cavities above 17' H?	Any disposition other than 'Remain'/'No Impacts'?
Seagrape (*Coccoloba uvifera)*	No	No	Some overhanging branches will require pruning.
Brazilian pepper (*Schinus terebinthifolia)*	No	No	Invasive/Prohibited Plant Species. Several overhanging branches will require pruning, small shrubs will require removal.
Seaside mahoe (*Thespesia populnea)*	No	No	Invasive/Prohibited Plant Species. Several overhanging branches will require pruning, small shrubs and trees located within the temporary construction easement (SE corner) will require removal.
Red mangrove (*Rhizophora mangle)*	Yes	No	Some overhanging branches will require pruning.
White mangrove (*Laguncularia racemosa)*	Yes	No	Overhanging branches will require pruning. Trees located within the temporary construction easement (SE corner).
Green buttonwood (*Conocarpus erectus)*	Yes	No	Overhanging branches will require pruning. Trees located within the temporary construction easement (SE corner).
Tropical almond (*Terminalia catappa)*	No	No	Invasive/Prohibited Plant Species. Overhanging branches will require pruning.
Black mangrove (*Avicennia germinans)*	Yes	No	Overhanging branches will require pruning. Trees located within the temporary construction easement (SE corner).
Australian pine (*Pinus eliotti)*	No	No	Trees located within the temporary construction easement (SE corner).

NOTES: A narrow strip of land parallel to the existing SR 934 ROW will be impacted under the proposed project; the majority of larger trees are located south/waterward of the proposed project footprint, however a temporary construction easement in the southeast corner of this area will have additional impacts (reported above by species). Heavy vulture presence in the area; roosting at radio tower located northeast of Pelican Harbor Drive intersection. No signs of bat utilization observed.

REPRESENTATIVE PHOTOS OF AREA:


NE
E
SE
S
30
60
90
120
150
180
115°E (T) 25.848249, -80.1621 ±18m -21m
11 Jan 2024, 1:36:02 PM


NE
E
SE
S
30
60
90
120
150
180
95°E (T) 25.848291, -80.162407 ±19m -21m
11 Jan 2024, 1:38:05 PM

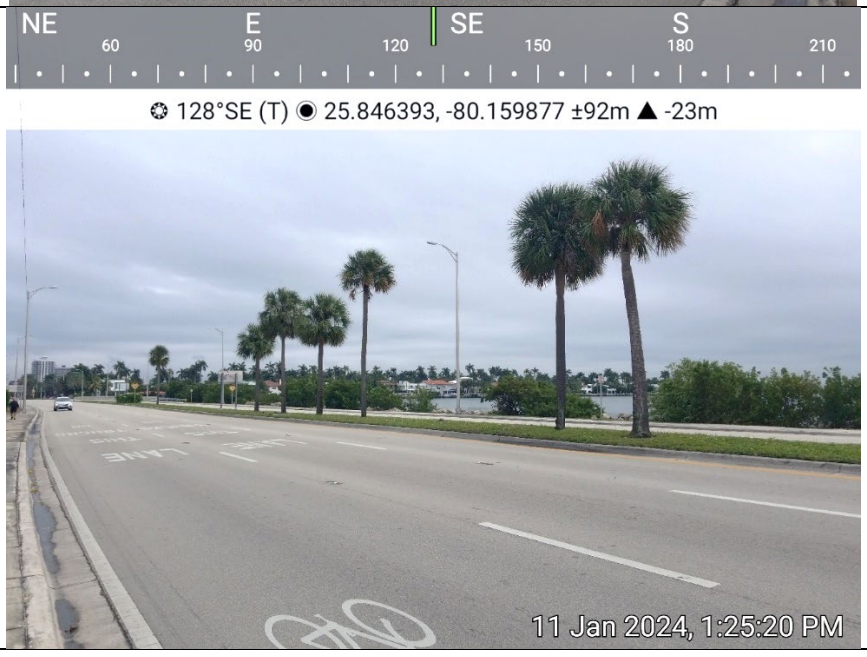

S
SW
W
NW
180
210
240
270
300
330
247°SW (T) 25.848409, -80.163694 ±23m -20m
11 Jan 2024, 1:42:58 PM

Area 3– SR 934 Median

Species Observed in Area	Any above 17' H?	Any with cavities above 17' H?	Any disposition other than 'Remain'/'No Impacts'?
Cabbage palm (*Sabal palmetto)*	Yes	No	Trees located within the median may require removal/relocation during construction.
Orange Geiger (*Cordia sebestena*)	No	No	
Pink Tabebuia (*Tabebuia rosea)*	Yes	No	
Coconut palm (*Cocos nucifera)*	Yes	No	

NOTES: Large Tabebuia trees located within in median, however no cavities were observed. Heavy vulture presence in the area; roosting at radio tower located northeast of Pelican Harbor Drive intersection. No signs of bat utilization observed.

REPRESENTATIVE PHOTOS OF AREA:



Area 4– North of SR 934

Species Observed in Area	Any above 17' H?	Any with cavities above 17' H?	Any disposition other than 'To Remain'/'No Impacts'?
Cabbage palm (*Sabal palmetto)*	No	No	No impacts anticipated.
Seagrape (*Coccoloba uvifera)*	No	No	Some overhanging branches will require pruning.
Seaside mahoe (*Thespesia populnea)*	No	No	Several overhanging branches will require pruning.
Green buttonwood (*Conocarpus erectus)*	Yes	No	Several overhanging branches will require pruning.
Brazilian pepper (*Schinus terebinthifolia)*	No	No	Several overhanging branches will require pruning.
Australian Pine (*Pinus eliotti)*	Yes	No	Some overhanding branches will require pruning, trunk/central leader located beyond limits of construction.
Oleander tree (*Nerium oleander)*	No	No	No impacts anticipated.

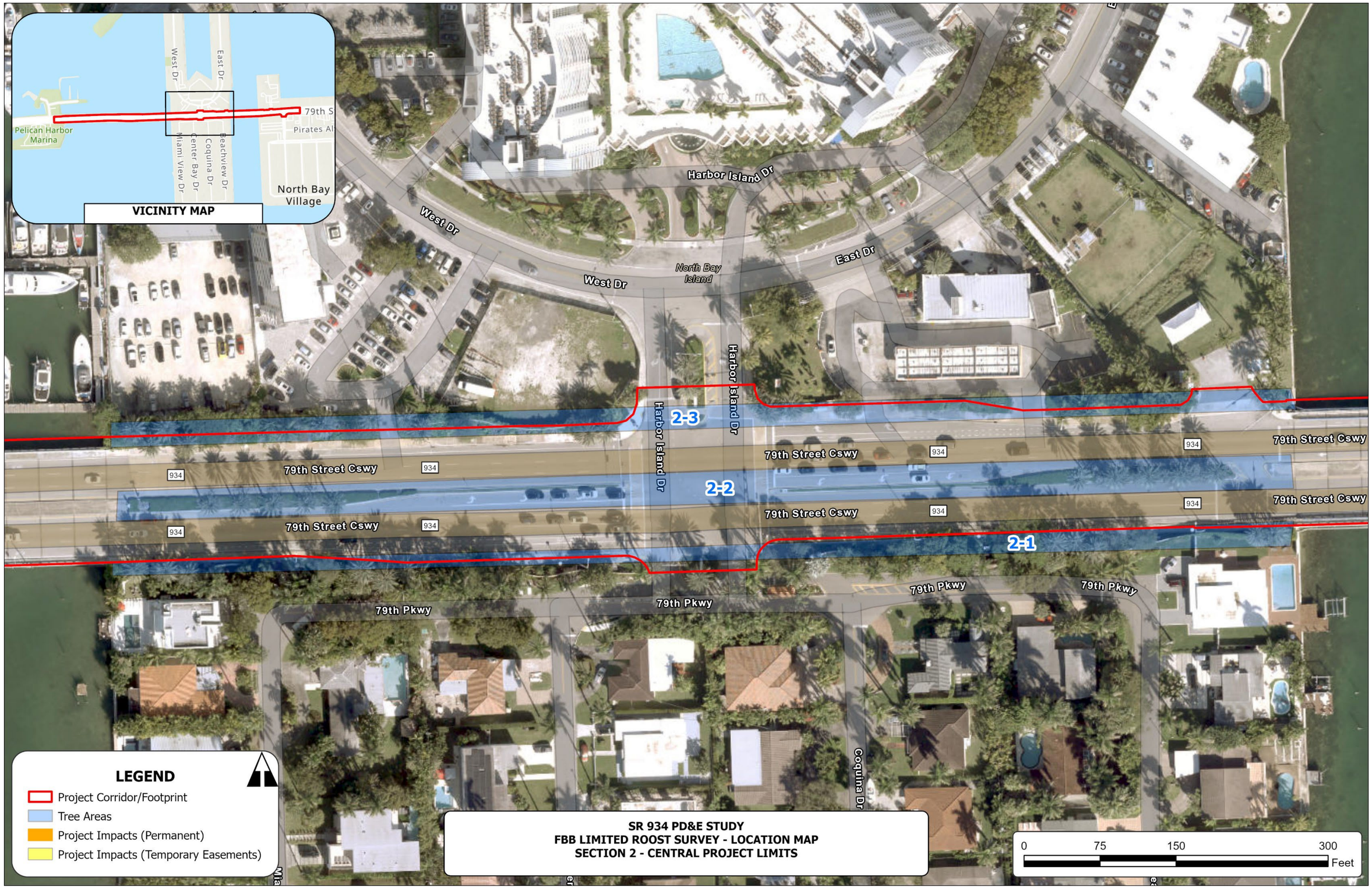
NOTES: The majority of tress in this area are shorter, less than 17' in total height. Generally, the taller trees are located waterward/north of the proposed limits of construction. No signs of bat utilization observed.

REPRESENTATIVE PHOTOS OF AREA:


N
NE
E
SE
0
30
60
90
120
150
70°NE (T) 25.848532, -80.164873 ±13m -24m
11 Jan 2024, 1:22:13 PM


NE
SE
30
60
120
150
90°E (T) 25.848707, -80.164188 ±20m -24m
11 Jan 2024, 1:23:53 PM


SW
W
NW
N
210
240
270
300
330
0
286°W (T) 25.848607, -80.161669 ±8m -21m
11 Jan 2024, 1:31:19 PM


VICINITY MAP
Pelican Harbor Marina
West Dr
East Dr
Miami View Dr
Center Bay Dr
Coquina Dr
Beachview Dr
79th S
Pirates Al
North Bay Village
Harbor Island Dr
West Dr
North Bay Island
East Dr
Harbor Island Dr
Harbor Island Dr
2-3
2-2
2-1
79th Street Cswy
934
79th Pkwy
Coquina Dr
LEGEND
Project Corridor/Footprint
Tree Areas
Project Impacts (Permanent)
Project Impacts (Temporary Easements)
SR 934 PD&E STUDY
FBB LIMITED ROOST SURVEY - LOCATION MAP
SECTION 2 - CENTRAL PROJECT LIMITS
0
75
150
300
Feet

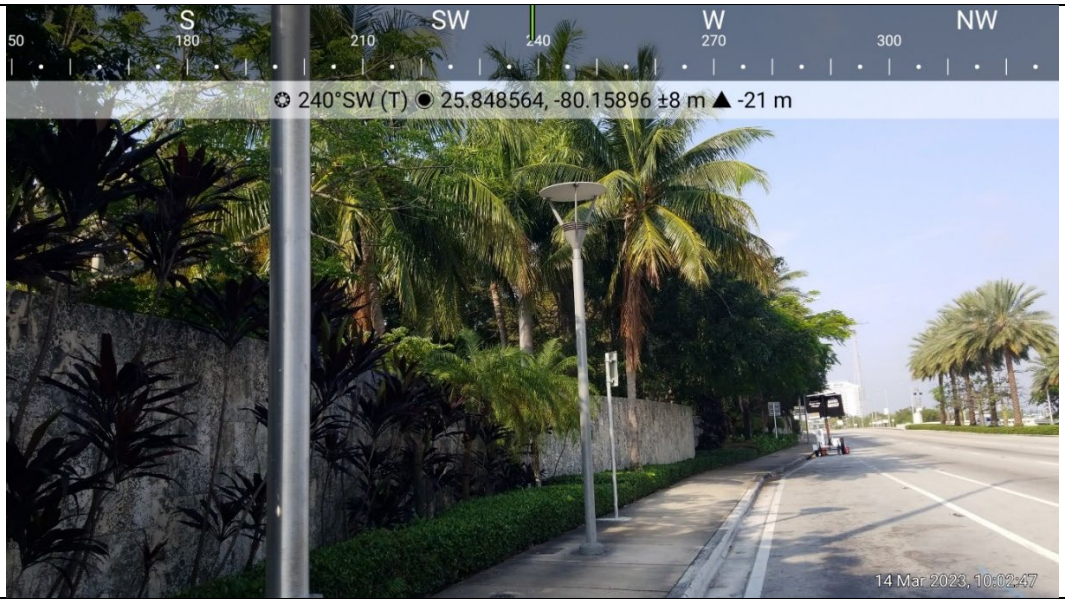
SECTION 2 – CENTRAL PROJECT LIMITS

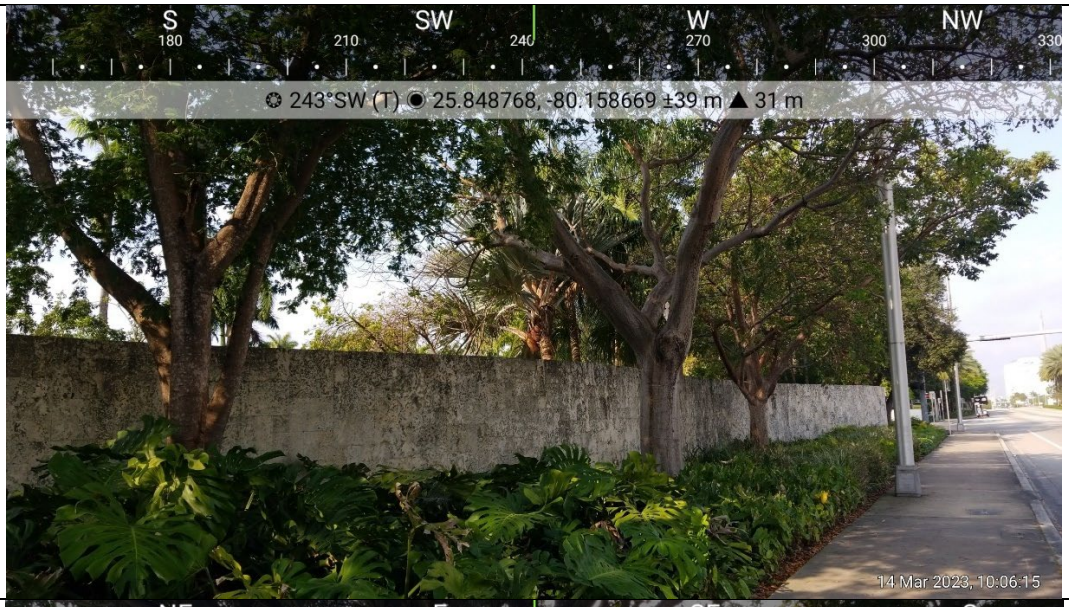
Area 2-1 – South of SR 934

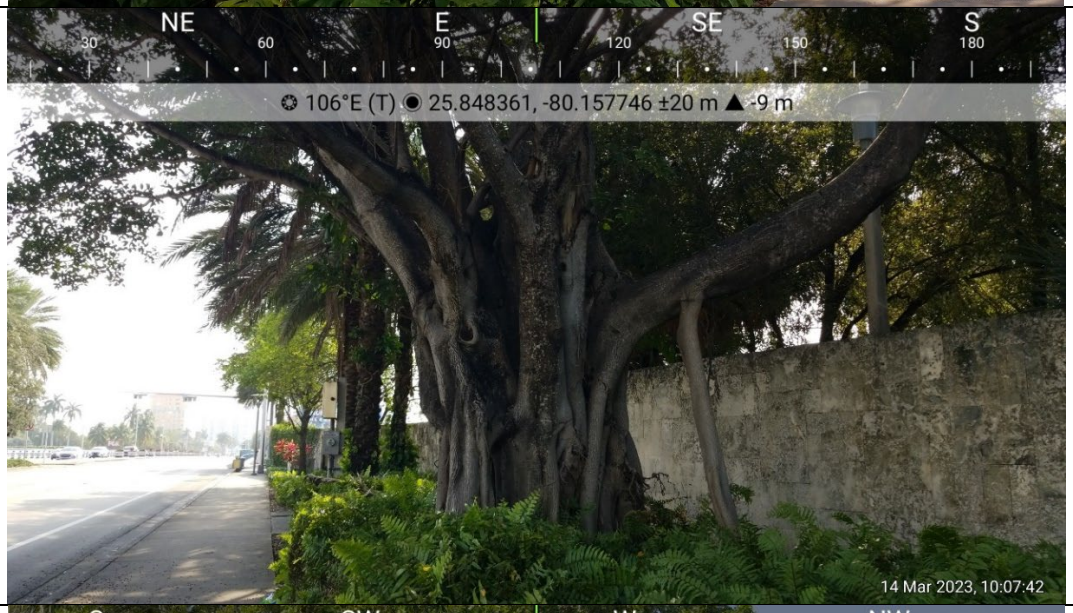
Species Observed in Area	**Any above 17' H?**	**Any with cavities above 17' H?**	**Any disposition other than 'Remain'/'No Impacts'?**
Phoenix date palm (*Phoenix dactylifera)*	Yes	No	No impacts anticipated.
Strangler fig *(Ficus aurea)*	Yes	No	Pruning may be required for any overhanging branches.
Gumbo Limbo (*Bursera simaruba)*	Yes	No	Pruning may be required for any overhanging branches.
Live oak (Quercus virginiana)	Yes	No	Pruning may be required for any overhanging branches.
Bismark palm (*Bismarkia nobilis)*	Yes	No	No impacts anticipated.
Royal palm (*Roystonea regia)*	Yes	No	No impacts anticipated.
Coconut palm (*Cocos nucifera)*	Yes	No	No impacts anticipated.

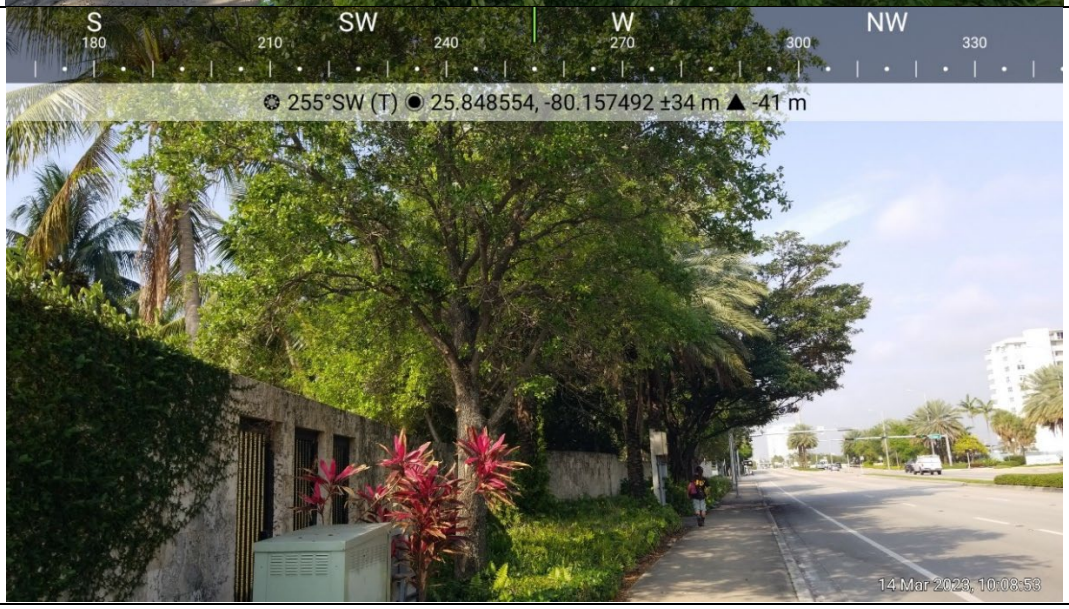
NOTES: Trees in this segment of the project area located south of the existing sidewalk and eastbound SR 934, before/just north of a wall surrounding a community to the south. No impacts are anticipated based on the footprint of the project. No signs of bat utilization observed.

REPRESENTATIVE PHOTOS OF AREA:




S
180
210
SW
240
W
270
300
NW
330
243°SW (T) 25.848768, -80.158669 ±39 m -31 m
14 Mar 2023, 10:06:15


NE
30
60
E
90
120
SE
150
S
180
106°E (T) 25.848361, -80.157746 ±20 m -9 m
14 Mar 2023, 10:07:42

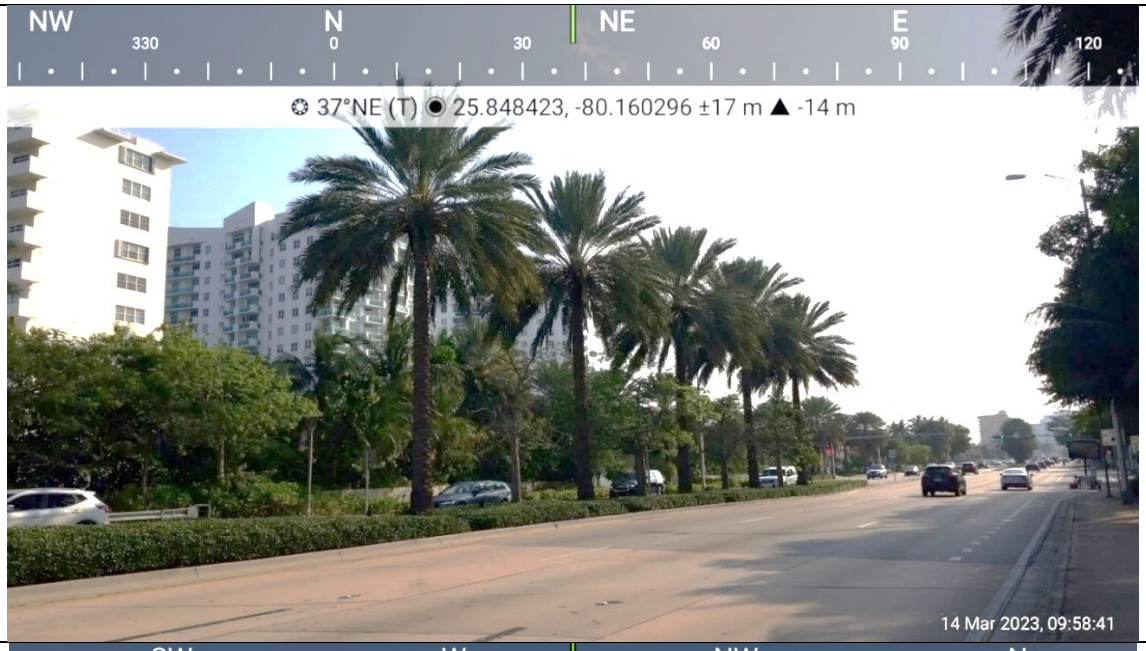

S
180
210
SW
240
W
270
300
NW
330
255°SW (T) 25.848554, -80.157492 ±34 m -41 m
14 Mar 2023, 10:08:53

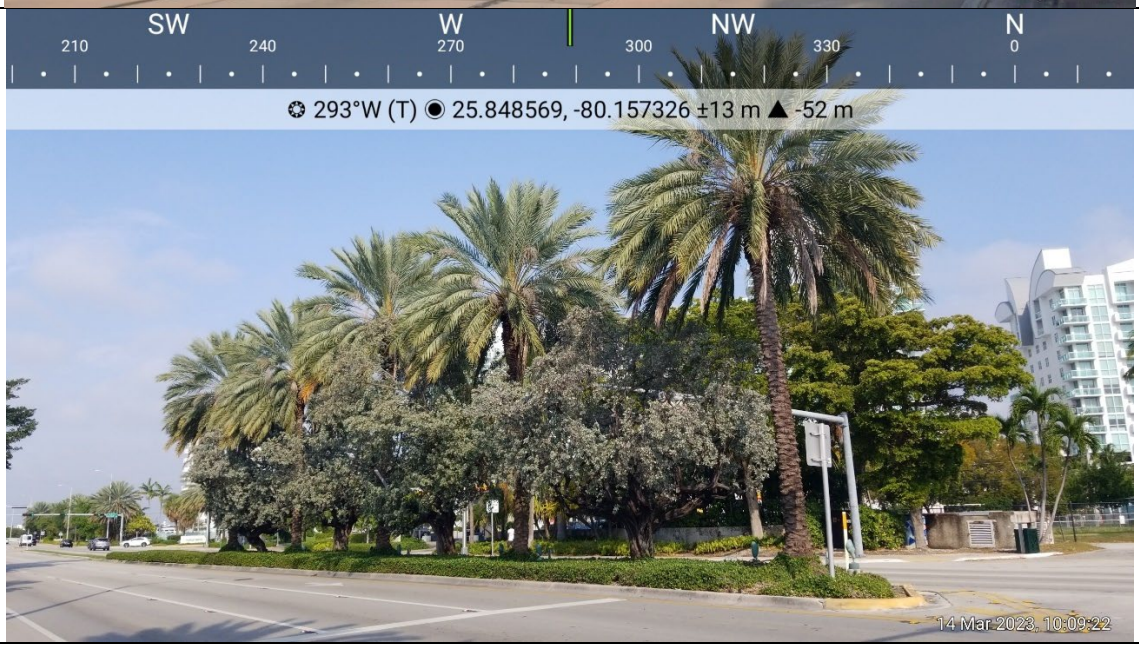
Area 2-2 – SR 934 Median

Species Observed in Area	Any above 17' H?	Any with cavities above 17' H?	Any disposition other than 'Remain'/'No Impacts'?
Phoenix date palm (*Phoenix dactylifera)*	Yes	No	Trees located within the median will likely require removal/relocation during construction.
Silk floss tree (*Ceiba spp.)*	No	No	
Silver buttonwood (*Conocarpus erectus var. sericeus)*	No	No	

NOTES: No signs of bat utilization observed.

REPRESENTATIVE PHOTOS OF AREA:



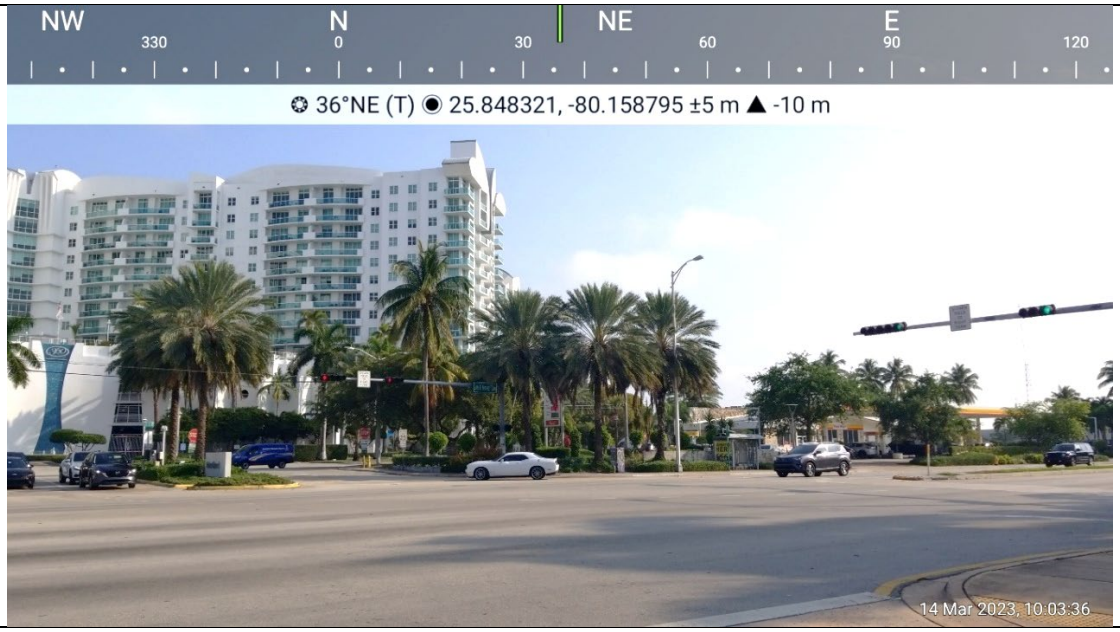


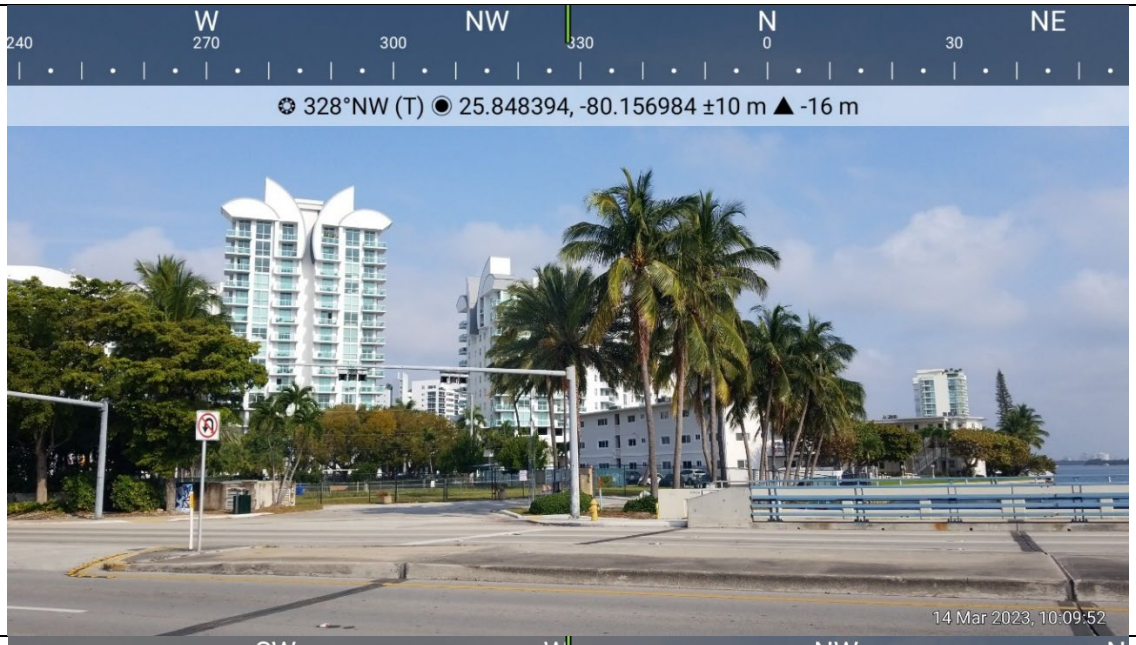
Area 2-3 – North of SR 934

Species Observed in Area	Any above 17' H?	Any with cavities above 17' H?	Any disposition other than 'Remain'/'No Impacts'?
Phoenix date palm (*Phoenix dactylifera)*	Yes	No	Some date palms (near western limits of this area) conflict with the project footprint and may require relocation.
Verawood (*Bulnesia arborea)*	No	No	No impacts anticipated.
Screw pine (*Pandanus spp.)*	No	No	No impacts anticipated
Live oak (Quercus virginiana)	Yes	No	Overhanging branches may require pruning.
Umbrella tree (*Schefflera actinophylla)*	No	No	No impacts anticipated.
Royal palm (*Roystonea regia)*	Yes	No	No impacts anticipated.
Coconut palm (*Cocos nucifera)*	Yes	No	Some coconut palms may require relocation/removal.
Silk floss tree (*Ceiba spp.)*	No	No	No impacts anticipated.
Orange Geiger (*Cordia sebestena*)	No	No	No impacts anticipated.
Black olive (*Bucida buceras)*	Yes	No	Overhanging branches may require pruning.
Frangipani (*Plumeria rubra)*	No	No	No impacts anticipated.

NOTES: Trees in this area are located north of the existing sidewalk and SR 934 westbound. No impacts are anticipated based on the footprint of the project. No signs of bat utilization observed.

REPRESENTATIVE PHOTOS OF AREA:

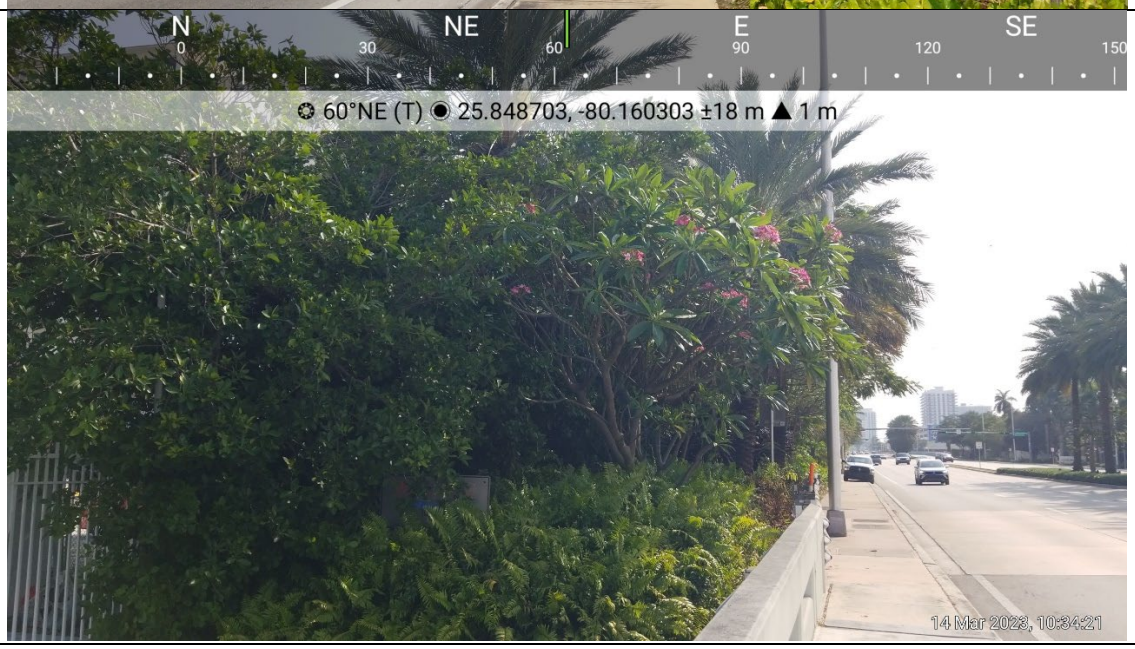


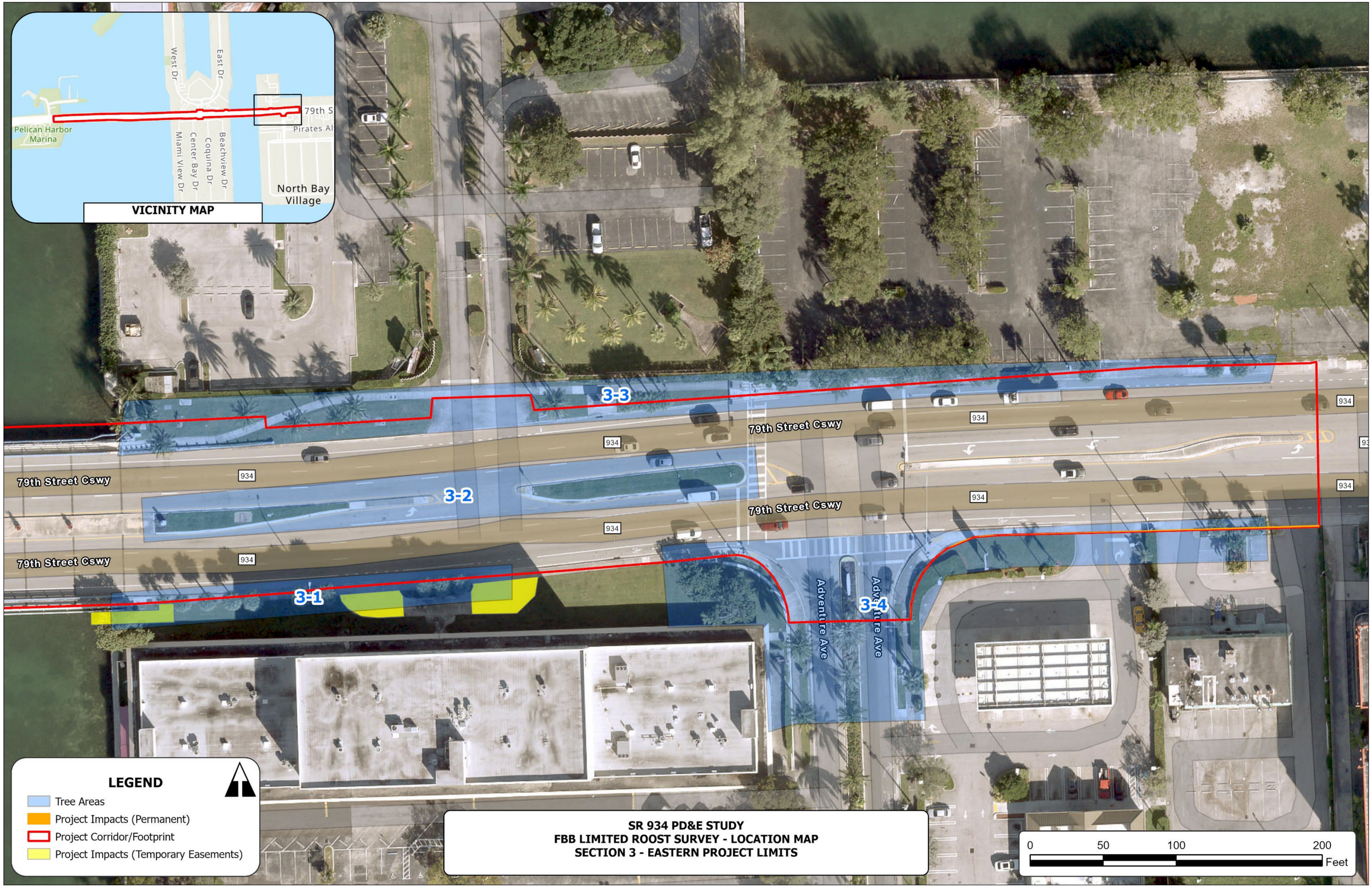

W NW N NE
240 270 300 330 0 30
328°NW (T) 25.848394, -80.156984 ±10 m -16 m
14 Mar 2023, 10:09:52


SW W NW N
210 240 270 300 330 0
275°W (T) 25.848716, -80.157668 ±5 m -25 m
14 Mar 2023, 10:29:20


SW W NW N
210 240 270 300 330 0
286°W (T) 25.848746, -80.158309 ±5 m -12 m
Harbor Island
STOP
14 Mar 2023, 10:30:43


S
SW
W
NW
180
210
240
270
300
330
262°W (T) 25.848667, -80.159049 ±5 m -21 m
14 Mar 2023, 10:32:19


N
NE
E
SE
0
30
60
90
120
150
60°NE (T) 25.848703, -80.160303 ±18 m 1 m
14 Mar 2023, 10:34:21


VICINITY MAP
West Dr
East Dr
79th S
Pirates Al
Pelican Harbor Marina
Miami View Dr
Center Bay Dr
Coquina Dr
Beachview Dr
North Bay Village
3-3
3-2
3-1
3-4
79th Street Cswy
934
Adventure Ave
LEGEND
Tree Areas
Project Impacts (Permanent)
Project Corridor/Footprint
Project Impacts (Temporary Easements)
SR 934 PD&E STUDY
FBB LIMITED ROOST SURVEY - LOCATION MAP
SECTION 3 - EASTERN PROJECT LIMITS
0
50
100
200
Feet

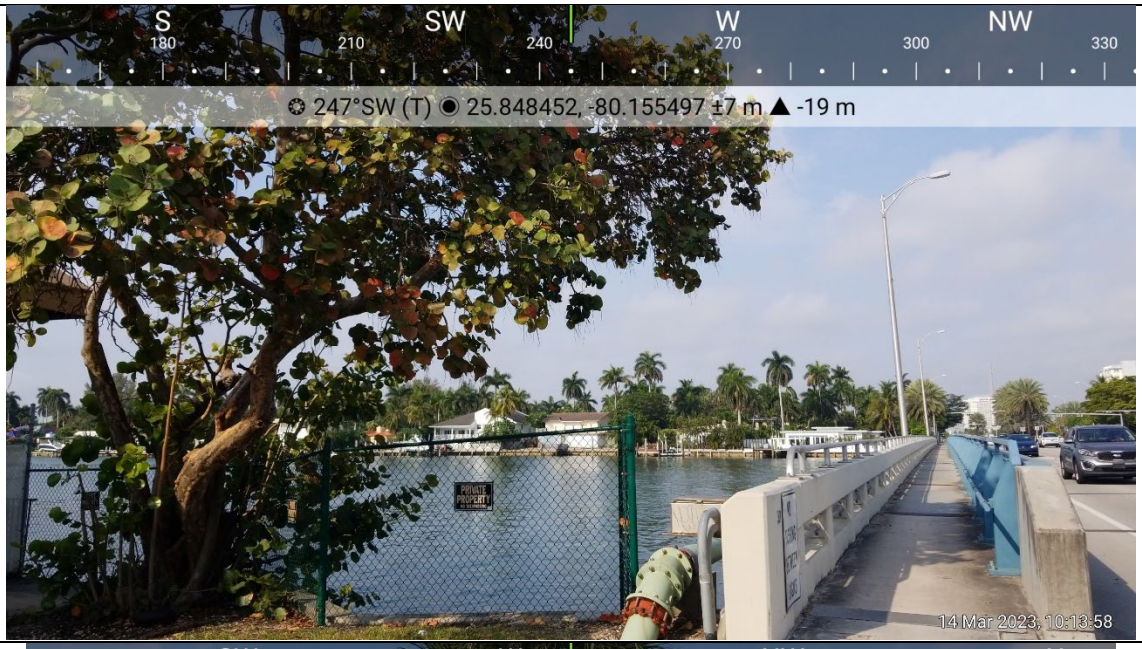
SECTION 3 – EASTERN PROJECT LIMITS

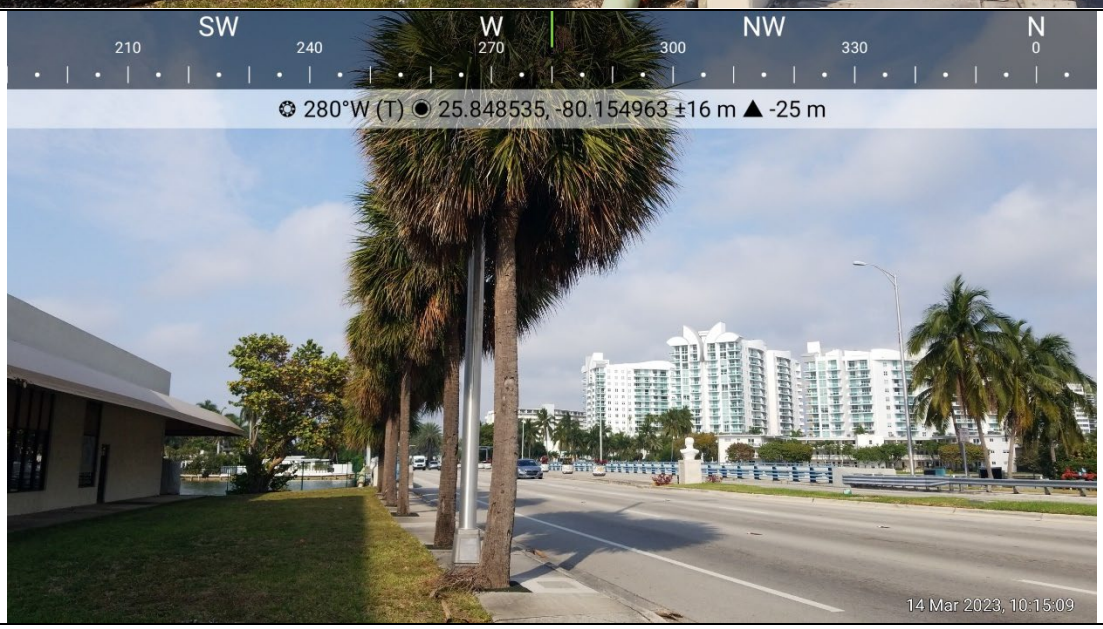
Area 1 – South of SR 934

Species Observed in Area	Any above 17' H?	Any with cavities above 17' H?	Any disposition other than 'Remain'/'No Impacts'?
Cabbage palm (*Sabal palmetto)*	Yes	No	Located immediately adjacent to proposed work, some will require relocation/removal.
Seagrape (*Coccoloba uvifera)*	Yes	No	Overhanging branches may require minor pruning during construction for access.

NOTES: Temporary easements are proposed in this location to accommodate construction and access. Impacts to the seagrape and one of the cabbage palms would result from the use of the temporary easement. Some of the western row of cabbage palms could require relocation/removal to accommodate construction. No signs of bat utilization observed.

REPRESENTATIVE PHOTOS OF AREA:





Area 2 – Median of SR 934

Species Observed in Area	Any above 17' H?	Any with cavities above 17' H?	Any disposition other than 'Remain'/'No Impacts'?
Royal palm (*Roystonea regia)*	Yes	No	No

NOTES: One royal palm is located in the median of this section of the project area, remaining median area is groundcover species only. No signs of bat utilization observed.

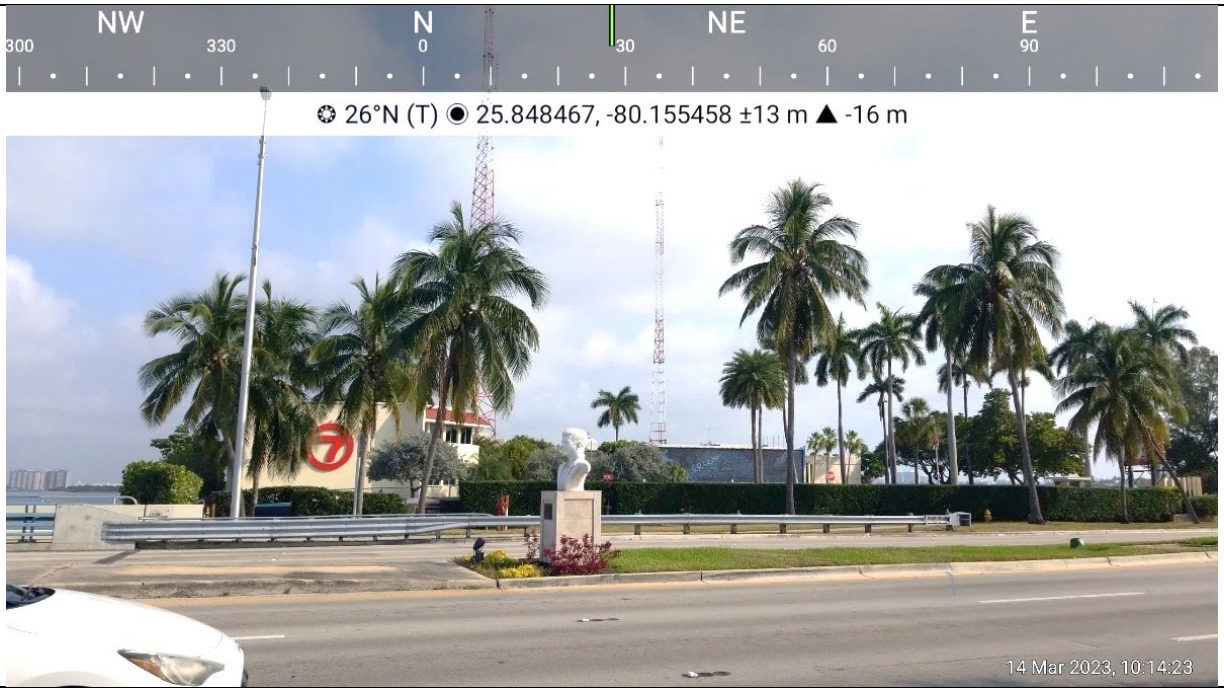
REPRESENTATIVE PHOTOS OF AREA:

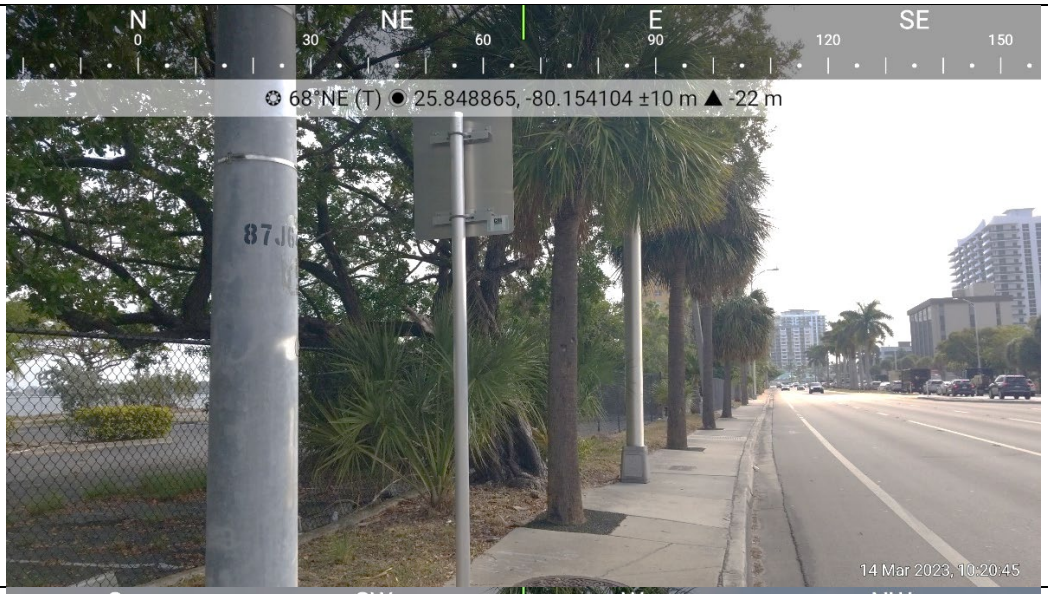
Area 3 – North of SR 934

Species Observed in Area	Any above 17' H?	Any with cavities above 17' H?	Any disposition other than 'Remain'/'No Impacts'?
Cabbage palm (*Sabal palmetto)*	No	No	Some may require relocation/removal during construction, near eastern terminus and at entrance to Channel 7 News.
Green buttonwood (*Conocarpus erectus)*	Yes	No	Overhanging branches may require pruning, not directly in conflict with project footprint.
Coconut palm (*Cocos nucifera)*	Yes	No	Some coconut palms, near western limits of this Section, may require relocation/removal.
Umbrella tree (*Schefflera actinophylla)*	Yes	No	Invasive/Prohibited Species. Overhanging branches may require pruning, not directly in conflict with project footprint.
Brazilian pepper (*Schinus terebinthifolia)*	No	No	Invasive/Prohibited Species. Overhanging branches may require pruning, not directly in conflict with project footprint.

NOTES: West of Adventure Avenue, there is a row of palms (Cabbage and Coconut) planted between the westbound SR 934 travel lanes and the sidewalk (which may require removal/relocation to accommodate construction, access, and staging). From Adventure Avenue to the east, there is a row of Cabbage palms planted north of the sidewalk and taller invasive trees growing up against the northern property's fence or reaching over. No signs of bat utilization observed.

REPRESENTATIVE PHOTOS OF AREA:




N
0
30
NE
60
E
90
120
SE
150
68°NE (T) 25.848865, -80.154104 ±10 m -22 m
14 Mar 2023, 10:20:45


S
180
210
SW
240
W
270
300
NW
330
253°SW (T) 25.8488, -80.154342 ±9 m -29 m
SPEED LIMIT 30
14 Mar 2023, 10:21:43

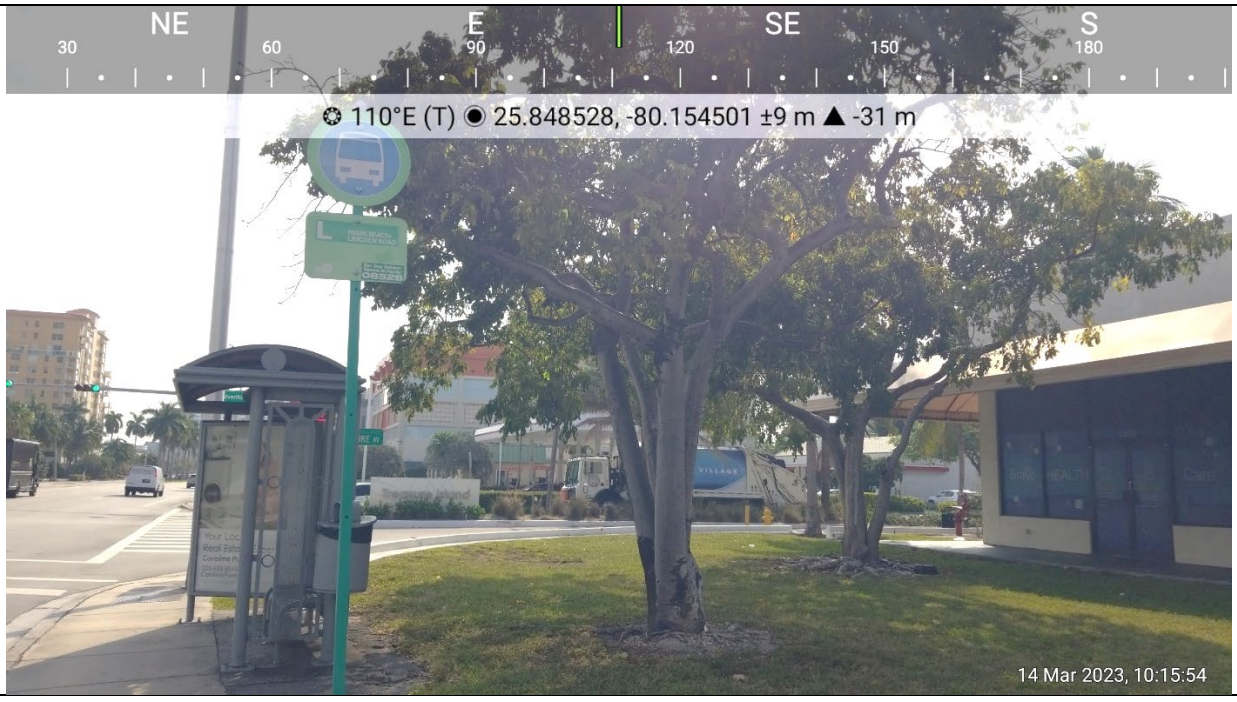

S
180
210
SW
240
W
270
300
NW
330
259°W (T) 25.848763, -80.154904 ±12 m 2 m
14 Mar 2023, 10:23:04

Area 4 – Entrance to Treasure Island, Adventure Avenue

Species Observed in Area	**Any above 17' H?**	**Any with cavities above 17' H?**	**Any disposition other than 'Remain'/'No Impacts'?**
Gumbo Limbo (*Bursera simaruba)*	Yes	No	No impacts anticipated.
Phoenix date palm (*Phoenix dactylifera)*	No	No	One of the date palms (closest to the intersection) may require relocation to accommodate construction, the remainder are further south and do not conflict.
Coconut palm (*Cocos nucifera)*	Yes	No	No impacts anticipated.
Cabbage palm (*Sabal palmetto)*	Yes	No	Two cabbage palms near eastern terminus will require relocation to accommodate construction. Both of these palms are less than 17' tall.
Solitaire palm (*Ptychosperma elegans)*	No	No	No impacts anticipated.
Christmas palm (*Adonidia merrillii)*	No	No	No impacts anticipated.

NOTES: Some coconut palms are located between the road and the sidewalk (southbound Adventure Avenue) while most (coconut and date palms) are planted in a row in the median set back south from the intersection. No signs of bat utilization observed.

REPRESENTATIVE PHOTOS OF AREA:




SE
S
SW
W
150
180
210
240
270
300
222°SW (T) 25.848536, -80.154108 ±8 m -39 m
Grove Bay
14 Mar 2023, 10:19:00

Appendix C Manatee Effect Determination Key

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.

Appendix D NMFS Sea Turtle and Smalltooth Sawfish Construction Conditions

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
263 13th Avenue South
St. Petersburg, FL 33701

SEA TURTLE AND SMALLTOOTH SAWFISH CONSTRUCTION CONDITIONS

The permittee shall comply with the following protected species construction conditions:

a. The permittee shall instruct all personnel associated with the project of the potential presence of these species and the need to avoid collisions with sea turtles and smalltooth sawfish. All construction personnel are responsible for observing water-related activities for the presence of these species.

b. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing sea turtles or smalltooth sawfish, which are protected under the Endangered Species Act of 1973.

c. Siltation barriers shall be made of material in which a sea turtle or smalltooth sawfish cannot become entangled, be properly secured, and be regularly monitored to avoid protected species entrapment. Barriers may not block sea turtle or smalltooth sawfish entry to or exit from designated critical habitat without prior agreement from the National Marine Fisheries Service's Protected Resources Division, St. Petersburg, Florida.

d. All vessels associated with the construction project shall operate at "no wake/idle" speeds at all times while in the construction area and while in water depths where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will preferentially follow deep-water routes (e.g., marked channels) whenever possible.

e. If a sea turtle or smalltooth sawfish is seen within 100 yards of the active daily construction/dredging operation or vessel movement, all appropriate precautions shall be implemented to ensure its protection. These precautions shall include cessation of operation of any moving equipment closer than 50 feet of a sea turtle or smalltooth sawfish. Operation of any mechanical construction equipment shall cease immediately if a sea turtle or smalltooth sawfish is seen within a 50-ft radius of the equipment. Activities may not resume until the protected species has departed the project area of its own volition.

f. Any collision with and/or injury to a sea turtle or smalltooth sawfish shall be reported immediately to the National Marine Fisheries Service's Protected Resources Division (727-824-5312) and the local authorized sea turtle stranding/rescue organization.

g. Any special construction conditions, required of your specific project, outside these general conditions, if applicable, will be addressed in the primary consultation.

Revised: March 23, 2006
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Appendix E Agency Coordination

AGENDA

FM: 449007-1 SR 934/NE 79th ST. PD&E

Date: October 19, 2023
Time: 2:45 pm – 3:30 pm
Location: Microsoft Teams

Agenda Items:

A. Project Background

- Previous Coordination with NMFS

B. Project Alternatives

- Essential Fish Habitat/Protected Resources
    i. Field Surveys
        1. Methodology
        2. Results
- Recommendations for Avoidance and Minimization
- Anticipated Permits

C. Project Schedule

Discussion and Next Steps

Project: I-195 PD&E Study
Subject: Kickoff Meeting with National Marine Fisheries Service (NMFS)
Meeting Date: 9/19/2022
Location: Video Conference Meeting

1. Attendees:

Name	Company/Agency	Email
Steven Craig James	FDOT	Steven.James@dot.state.fl.us
Katherine Bernabeo	FDOT	katherine.bernabeo@dot.state.fl.us
Kurtis Gregg	NMFS	Kurtis.Gregg@noaa.gov
Robert Linares	Metric Engineering	RLinares@metriceng.com
Rob Myers	Metric Engineering	Rob.Myers@metriceng.com
Caitlin Hill	Metric Engineering	caitlin.hill@metriceng.com

This intent of the meeting was to describe the project to NMFS and to discuss benthic surveys needs within Biscayne Bay at two separate project locations, including I-195. This meeting also included a project to the north of the I-195 PD&E Study, the SR 934/79th Street PD&E Study.

- The project teams introduced themselves. Mr. James then described the I-195 and SR 934 PD&E studies and anticipated benthic survey needs.
- Ms. Hill gave a brief presentation showing the project areas and results of a Corridor Planning Study for I-195 and renderings from SR 934/79th Street PD&E Study marketing.
- Mr. Linares and Mr. James described that the PD&E studies have just begun and that plans for each are still under development. Preliminary plans from earlier phases were being shown to give an idea of the potential project designs.
- Ms. Hill described proposed benthic survey methodology.
- Mr. Gregg agreed that the proposed methods are a good initial step and that additional surveys will likely be required for specific structures and locations that will be impacted (once designs are available).
- Mr. Gregg stated that indirect and temporary impacts will need to be considered prior to permitting the projects and may require additional surveys.

Meeting Notes

SR 934/NE 79th Street PD&E Study

Coordination Meeting with Miami-Dade County Parks, Recreation, & Open Spaces Department (PROS) and Regulatory & Economic Resources Department (RER)

FPID Number: 449007-1-22-01

Project Manager: Paola Martinez

Date: Monday, January 29th, 2024, 11:00am – via Microsoft Teams

Attendees: FDOT: Paola Martinez, Mauricio Gomez, Kimberely Tavares,
Miami-Dade PROS: Alejandro Zizold, Alissa Turtletaub
Miami-Dade RER: Marsel Fakrutdinov, Rockell Alhale, Camilo Ignacio
FDOT PD&E Study Team: Steve Schnell (HDR), Rob Myers (Metric), Carl Sandin (HDR)

Purpose of Meeting:

This meeting was held to discuss the proposed impacts to Pelican Harbor Marina by the project.

Meeting Notes:

Steve Schnell provided an overview of the project, discussing the project limits and project purpose to replace the existing bridges. After the previous Public Meeting, the FDOT has discussed additional changes to the roadway between Pelican Harbor Drive and the west bridges.

The project intends to bring the roadway up to standards, including adding bicycle lanes, wider sidewalks, and guardrail. The proposed concept requires work within the park property of Pelican Harbor Marina, owned by Miami-Dade County, Parks, Recreation, and Open Spaces Department (PROS). Steve Schnell and Rob Myers discussed the typical section and plan exhibit identifying the proposed narrow strips of permanent right of way (3' wide strip, shown in yellow, ±0.136 ac.) along both sides of the roadway for the proposed sidewalk and light poles. In addition, a temporary construction easement (additional 3' wide strip, shown in orange, ±0.244 ac.) is identified to harmonize the slopes along both sides of the roadway and additional area at the bridge area. The temporary construction easement area gets larger at the bridge approach area. Alejandro Zizold requested FDOT send the exhibit with typical section view to PROS for review.

There are existing mangroves along the corridor, between the sidewalk and shoreline at Biscayne Bay. The proposed work may impact some of the existing mangroves and buttonwood trees close to the existing sidewalk. Rockell Alhale requested FDOT review what are the minimum necessary impacts to the existing mangroves and there is no difference between the permanent and temporary impacts. Mangroves impacts would require mitigation, potentially on-site or paying into the trust fund. RER asked about potential construction staging or fill in the bay. Any fill within the tidal waters would require approval of the Board of County Commissioners. The PD&E Team noted the intent is for fill to be above the high tide line and the temporary construction easement at the bridge is intended to support the barge for bridge construction. It was discussed a barge requires adequate depth and clearance to the

bay bottom. Rob Myers noted the PD&E Team anticipates a commitment from National Marine Fisheries Service and the Barge Placement Plan would be developed during the next phase of the project. It was discussed whether the impacts to the existing buttonwood trees require permitting with the mangroves; RER clarified the buttonwoods are protected if the area is considered a wetland. The existing riprap shoreline is not an indicator for wetlands, so the permitting may only be required for mangrove impacts. The construction staging for the sidewalk and roadside work can be done using other methods, without additional fill or park area.

Steve Schnell discussed the Section 4(f) process, noting the intent is to improve bicycle and pedestrian facilities and roadside safety to better connect Pelican Harbor Marina across the bridge to North Bay Village. It was discussed any conveyance of parkland is restricted by County Charter, Article 7. PROS stated it supports FDOT efforts to improve bicycle and pedestrian facilities, but Miami-Dade PROS preference is for ownership to remain with the county. FDOT and Miami-Dade County can develop an Agreement or Easement for construction & maintenance the proposed sidewalk and other work within the park property.

Marsel Fakrutdinov asked about the drainage impacts, potential dewatering, and stormwater treatment requirements. The drainage engineers from the PD&E Team were not in attendance at the meeting; but the intent is to meet the treatment requirements since Biscayne Bay is an outstanding Florida Waterway. If the area remains county property, a Class II permit would be required.

Action Items:

- FDOT PD&E Team to send typical section and plan exhibit to PROS for review.
- FDOT to internally discuss the decision to proceed with right of way acquisition or an easement/agreement for the proposed work in the Pelican Harbor Marina property.

FLORIDA DEPARTMENT OF TRANSPORTATION
INTERAGENCY MEETING MINUTES

10:30 –11:30 am: FDOT 6 - SR 934/NE 79th Street PD&E (FM 449007-1)

AGENDA SUMMARY:

PROJECT INFO

1. FPID/FM Number: 449007-1-22-01

2. FDOT Project Name: SR 934/NE 79th Street PD&E Study from west of Pelican Harbor Dr. to east of Adventure Ave.

3. FDOT Project Manager: Paola Martinez, P.E.
   FDOT Drainage Liaison: Nathaniel V. Pulido, P.E.
   FDOT PLEMO Liaison: Kimberly Tavares

4. Consultant/Company Name and Contact information: Steve Schnell, HDR, Email: steve.schnell@hdrinc.com; Phone: 904-598-8964
   Rob Myers, Metric, Email: rob.myers@metriceng.com; Phone: 850-919-3780

5. SR/Local Name: SR 934/NE 79th Street/John F Kennedy Causeway

6. County: Miami-Dade County

7. Project Limits (provide location map and figures): SR 934/NE 79th Street from west of Pelican Harbor Dr. to east of Adventure Ave. A project location map has been included.

8. General Project Scope (include stage of project - PD&E, Design, Design/Build, Construction, etc.): The project is currently in PD&E with anticipated LDCA of fall 2024. The project purpose is to evaluate bridge replacement alternatives to address the structural deficiencies of four existing bridges (two bridge pairs) along SR 934/NE 79th Street. An additional project goal is to maintain emergency evacuation capabilities. In addition to the replacement of the bridges, the project includes milling and resurfacing, bike lanes, sidewalk improvements, associated drainage improvements, and signing and pavement marking upgrades.

9. Anticipated Permits:

   USACE Section 404 and Section 10 Permits
   SFWMD Environmental Resource Permit and Sovereign Submerged Lands Easement
   Miami-Dade County Class I and Class III Permits

10. Provide specific agenda discussion topics (i.e. goal of meeting):
    The goal of this meeting is to introduce this PD&E study and discuss likely permit needs and any potential fatal flaws or regulatory agency concerns. Potential construction-phase impacts to

mangroves and buttonwoods will be discussed, particularly with Miami-Dade County. Essential Fish Habitat will also be discussed with NMFS.

11. Requested Attendees (SFWMD - Environmental Resources, Surface Water Management, Water Use, ROW; USACE; USFWS; NMFS, etc.): USACE, SFWMD, NMFS, Miami-Dade County

12. Does your project include impacts to any environmental resources? If yes, please answer Questions a- d:

    a. Have wetland and/or protected species impacts been identified? If so define the impact amount and type:
    No adverse impacts are anticipated to any listed species. A total of 0.056 acre of impacts to mangroves, 0.0094 acre of impacts to discontinuous seagrass beds, and 0.0054 acre of impacts to continuous seagrass beds are anticipated under the current build alternative.

    b. Have the project representatives discussed the wetland and/or protected species impacts with PL&EM? (List the PL&EM person who you discussed with and the date of the meeting/discussion): Potential impacts to benthic resources were discussed with D6 environmental staff beginning with a meeting on August 26, 2022. Katherine Bernabeo was in attendance from FDOT. An additional coordination meeting was held on Sept 19, 2022 and included Ms. Bernabeo and a representative from NMFS. A meeting was most recently held on October 6, 2023 with attendance from Jacquelyn DeAngelo and Kimberley Taveras. At that meeting the cumulative results of field inspections were displayed on maps and potential impacts were discussed.

    c. During the meeting/discussion with PL&EM did project representatives discuss avoidance and minimization criteria? Has PL&EM concurred these criteria were applied? (For District IV projects, participation in this interagency meeting is not permitted if elimination and reduction has not been explored with PL&EM): Avoidance and minimization of impacts has been incorporated into alternative development and will continue to be discussed and implemented throughout the PD&E Study. This project involves the replacement of existing bridges without change in capacity.

    d. Have mitigation options for unavoidable impacts been discussed with PL&EM, and concurrence on the amount and type been achieved? (For District IV projects, participation in this interagency meeting is not permitted if options for unavoidable impacts been discussed with PL&EM): Mitigation options have only been discussed categorically as the proposed build alternative is still in development. No concurrence on the final amount and type has been achieved and is not anticipated until later in the PD&E study.

PRIOR COORDINATION

13. Has the project approach been discussed with:
    a. FDOT Drainage Liaison

Yes, the project has been discussed with the D6 drainage office, including District Drainage Engineer, Nathaniel V. Pulido, P.E. and Environmental Permit Coordinators, Kylie Shivers and Jacquelyn DeAngelo.

b. PLEMO Liaison

Yes, this project has been discussed with Kimberley Taveras and Craig James.

Have you coordinated with Cultural Resource Manager to determine if a SHPO concurrence letter has been received and can be included in the application? A draft Cultural Resource Assessment Survey (CRAS) has been submitted to D6 and D6 staff provided comments. Responses to comments is pending. No eligible resources were identified, and coordination is ongoing with D6 and SHPO.

14. Have you coordinated with the Contamination Coordinator to determine if there are contamination concerns in the event a dewatering permit is required?

    A draft Contamination Screening Evaluation Report (CSER) has been submitted to D6 and D6 contamination staff provided comments. Responses to those comments have been returned to D6 and the CSER will be updated with the proposed alternative and responses to all comments.

15. Have you coordinated with Natural Resource Manager to determine if a USFWS concurrence letter has been received and can be included in the application?
    No permit application is proposed at this time and no USFWS concurrence has yet been obtained. The project is in the PD&E phase and an alternatives public workshop is anticipated in October 2023. Following that workshop a Natural Resources Evaluation will be submitted to D6 and eventually to USFWS for concurrence.

16. For projects going into the permitting phase: Has a pre-application meeting been held or any preliminary correspondence been made by FDOT PM or Consultant with the regulatory agencies/reviewers? Specify the agencies and dates when meetings were held:
    This project is in the PD&E phase with LDCA anticipate in Fall 2024, the project is not in the permitting phase yet.

17. For project in the permitting phase, please provide any application numbers and the reviewer's name:
    The project is not yet in the permitting phase.

18. Anticipated Permits (or, if you already applied for or received any permits, please include the application/permit numbers):
    USACE Section 404 and Section 10 Permits
    SFWMD Environmental Resource Permit and Sovereign Submerged Lands Easement
Miami-Dade County Class I and Class III Permits

PROJECT MEETING SUMMARY:

ATTENDEES:

Name	Organization	Email Address
Dustin Wood	SFWMD	duwood@sfwmd.gov
Sophie Wild	SFWMD	swild@sfwmd.gov
Elizabeth Allen	SFWMD	eallen@sfwmd.gov
Suzanne Halverson	SFWMD	shalvers@sfwmd.gov
Veronica Beech	USACE	veronica.c.beech@usace.army.mil
Heather Mason	USACE	heather.m.mason@usace.army.mil
Kurtis Gregg	NMFS	kurtis.gregg@noaa.gov
BaoYing Wang	FDOT	baoying.wang@dot.state.fl.us
Kylie Shivers	FDOT	kylie.shivers@dot.state.fl.us
Kimberly Tavares	FDOT	kimberly.taveras@dot.state.fl.us
Steven Schnell	HDR	steve.schnell@hdrinc.com
William Leidy	HDR	william.leidy@hdrinc.com
Rohan Hameed	HDR	rohan.hameed@hdrinc.com
Rob Myers	Metric	rob.myers@metriceng.com
Ryan St. George	Metric	ryan.stgeorge@metriceng.com
Jennifer Shipley	Miller Legg	jshipley@millerlegg.com

The Project meeting started around 10:30 am and was completed by 11:20 am. After roll call of attendees, the overall project scope, limits, and approach were reviewed and presented by representatives of HDR and Metric Engineering. The project is in the PD&E phase and it was emphasized the intent of this meeting is for early coordination with the agencies.

The project consists of four (4) bridges west and east of Harbor Island in Miami-Dade all of which have been identified as candidates for repair or replacement. After a cost benefit analysis, it was determined a Major Rehabilitation (replacement of the superstructure deck, pier caps, widening of the bridge and installation of pile jackets) is necessary as the bridges are at the end of their life cycle. The two Bridge Replacement Alternatives being explored are: 2A: Maintain similar profile as existing (min vertical clearance of 3”), or 2B: Raise the profile to meet current guidelines. The second option would raise the profile by 7’ vertical clearance to account for sea level rise and property and environmental impacts and require a retaining wall for the roadway/bridge approach.

The anticipated environmental considerations were presented for some feedback in preparation for an upcoming public meeting. A preliminary environmental assessment was completed with a Benthic survey at 100’ boundary of the project area. Transects within the project area were completed using snorkel, scuba and bucket this summer and in September. Some continuous and discontinuous seagrass coverage was identified as well as some observed coral. Of note, a temporary construction easement is anticipated at the Pelican Harbor park causeway as this is County property outside of FDOT Right-of-Way. There are mangrove and buttonwood temporary impacts anticipated at this location. Potential impacts to NWI, Mangroves, and Seagrasses could total under 0.13 acres based on this early review. Barge usage and

staging areas have not yet been identified. Consultant indicated they anticipate permitting from USACE for 404 and Section 10, SFWMD ERP and Sovereign Submerged Lands Easement (SSL), and a Class I and III permit from Miami-Dade County. Miami Dade county representatives were not on the call. Agency discussion of the environmental considerations is as follows:

Agency Discussion:

- USACOE
  - Veronica confirmed they would lead permitting vs. USCG as it is not a USCG bridge. Early coordination for the seagrass mitigation is encouraged due to the complexity of the project. Look at the 2008 hierarchy rules and they have a new proximity factor they can use for mangroves (not available for seagrasses).

  - Veronica indicated that Nationwide 14 may not be applicable since it is in a critical water body identified for Biscayne Bay. (General Condition 22 or 23)

- NMFS (Kurtis Gregg)
  - Kurtis indicated EFH assessment and Section 7 will be required. The avoidance and minimization will be required and appears to be considered. Evaluation for barge staging and storage will need to be considered. There will be ESA coordination, sawfish, all 5 turtles.
    - Rob Myers of Metric indicated survey found corals though were not listed species, and were also outside of the project footprint

  - Ryan St. George inquired how the agency differentiates disturbance to seagrasses due to temporary construction access areas and potential shading by barges.
    - Kurtis indicated avoiding existing resource vs mitigating elsewhere is preferred. Looking at the map, barge staging could be in the less dense area of seagrasses. Mangrove and buttonwood mitigation is more amenable than seagrass mitigation.

  - Rob Myers of Metric indicated the NRE and benthic assessment is being finalized and will be provided via ETDM

- SFWMD
  - Dustin indicated the project as described would not be an exemption, would be individual. Need volumetric treatment for the bridges and bridge deck surface waters would have to be captured and transported to the drainage system. However the general permit for minor bridge alterations may apply if meets the criteria (ex. impacts meet under 0.5 acres).

  - Consultant indicated the extent of mitigation has not been evaluated yet. And Section 4f may be in play and require public property to be restored.
  - SFWMD indicated the evaluation of general permit is applicable. But SFWMD does not want to discourage environmental resource plantings, littoral shelf or other shoreline activities that could be done.

Appendix F Eastern Indigo Snake Programmatic Effect Determination Key

United States Department of the Interior

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

August 1, 2017

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

Subject: Consultation Key for the Eastern Indigo Snake – Revised

Dear Mr. Kinard:

This letter revises and replaces the January 25, 2010, and August 13, 2013, letters to the U.S. Army Corps of Engineers (Corps) regarding the use of the eastern indigo snake programmatic effect determination key (Key) for projects occurring within the South Florida Ecological Service's Office (SFESO) jurisdiction. This revision supersedes all prior versions of the Key in the SFESO area. The purpose of this revision is to clarify portions of the previous keys based on questions we have been asked, specifically related to habitat and refugia used by eastern indigo snakes (*Drymarchon corais couperi*), in the southern portion of their range and within the jurisdiction of the SFESO. This Key is provided pursuant to the Service's authorities under the Endangered Species Act of 1973, as amended (Act) (87 Stat. 884; 16 U.S.C.1531 *et seq.*). This Key revision has been assigned Service Consultation Code: 41420-2009-I-0467-R001.

The purpose of this Key is to assist the Corps (or other Federal action agency) in making appropriate effects determinations for the eastern indigo snake under section 7 of the Act, and streamline informal consultation with the SFESO for the eastern indigo snake when the proposed action can be walked through the Key. The Key is a tool available to the Corps (or other Federal action agency) for the purposes of expediting section 7 consultations. There is no requirement to use the Key. There will be cases when the use of the Key is not appropriate. These include, but are not limited to: where project specific information is outside of the scope of the Key or instances where there is new biological information about the species. In these cases, we recommend the Corps (or other Federal action agency) initiates traditional consultation pursuant to section 7 of the Act, and identify that consultation is being requested outside of the Key.

This Key uses project size and home ranges of eastern indigo snakes as the basis for making determinations of "may affect, but is not likely to adversely affect" (NLAA) and "may affect, and is likely to adversely affect" (may affect). Suitable habitat for the eastern indigo snake consists of a mosaic of habitats types, most of which occur throughout South Florida. Information on home ranges for individuals is not available in specific habitats in South Florida. Therefore, the SFESO uses the information from a 26-year study conducted by Layne and Steiner (1996) at Archbold Biological Station, Lake Placid, Florida, as the best available

information. Layne and Steiner (1996) determined the average home range size for a female eastern indigo snake was 46 acres and 184 acres for a male.

Projects that would remove/destroy less than 25 acres of eastern indigo snake habitat are expected to result in the loss of a portion of an eastern indigo snakes home range that would not impair the ability of the individual to feed, breed, and shelter. Therefore, the Service finds that take would not be reasonably certain to occur due to habitat loss. However, these projects have the potential to injure or kill an eastern indigo snake if the individual is crushed by equipment during site preparation or other project aspects. The Service's *Standard Protection Measures for the Eastern Indigo Snake* (Service 2013 or most current version) and the excavation of underground refugia (where a snake could be buried, trapped and/or injured), when implemented, are designed to avoid these forms of take. Consequently, projects less than 25 acres that include the Service's *Standard Protection Measures for the Eastern Indigo Snake* (Service 2013 or most current version) and a commitment to excavate underground refugia as part of the proposed action would be expected to avoid take and thus, may affect, but are not likely to adversely affect the species.

If a proposed project would impact less than 25 acres of vegetated eastern indigo snake habitat (not urban/ human-altered) completely surrounded by urban development, and an eastern indigo snake has been observed on site, the Key should not be used. The Service recommends formal consultation for this situation because of the expected increased value of the vegetated habitat within the individual's home range.

Projects that would remove 25 acres or more of eastern indigo snake habitat could remove more than half of a female eastern indigo snakes home range. This loss of habitat within a home range would be expected to significantly impair the ability of that individual to feed, breed, and shelter. Therefore, the Service finds take through habitat loss would be reasonably certain to occur and formal consultation is appropriate. Furthermore, these projects have the potential to injure or kill an eastern indigo snake if the individual is crushed by equipment during site preparation or other project aspects. The Service's *Standard Protection Measures* for the *Eastern Indigo Snake* (Service 2013 or most current version) and the excavation of underground refugia (where a snake could be buried, trapped and/or injured), when implemented, are designed to avoid these forms of take.

Eastern indigo snakes use a variety of habitat and are difficult to detect. Therefore, site specific information on the land use, observations of eastern indigo snakes within the vicinity, as well as other factors, as appropriate, will all be considered by the Service when making a final recommendation on the appropriate effects determination and whether it is appropriate to conclude consultation with the Corps (or other Federal action agency) formally or informally for projects that will impact 25 acres or more of habitat. Accordingly, when the use of the Key results in a determination of "may affect," the Corps (or other Federal action agency) is advised that consultation may be concluded informally or formally, depending on the project specific effects to eastern indigo snakes. Technical assistance from the Service can assist you in making a determination prior to submitting a request for consultation. In circumstances where the Corps (or other Federal action agency) desires to proceed with a consultation request prior to receiving

additional technical assistance from the Service, we recommend the agency documents the biological rationale for their determination and proceed with a request accordingly.

If the use of the Key results in a determination of "no effect," no further consultation is necessary with the SFESO. If the use of the Key results in a determination of "NLAA," the SFESO concurs with this determination based on the rationale provide above, and no further consultation is necessary for the effects of the proposed action on the eastern indigo snake. For "no effect" or "NLAA" determinations, the Service recommends that the Corps (or other Federal action agency) documents the pathway used to reach your no effect or NLAA determination in the project record and proceed with other species analysis as warranted.

Eastern Indigo Snake Programmatic Effect Determination Key
Revised July 2017
South Florida Ecological Service Office

Scope of the Key

This Key should be used only in the review of permit applications for effects determinations for the eastern indigo snake (*Drymarchon corais couperi*) within the South Florida Ecological Service's Office (SFESO) area (Broward, Charlotte, Collier, De Soto, Glades, Hardee, Hendry, Highlands, Lee, Indian River, Martin, Miami-Dade, Monroe, Okeechobee, Osceola, Palm Beach, Polk, Sarasota, and St. Lucie Counties). There is no designated critical habitat for the eastern indigo snake.

This Key is subject to revision as the Corps (or other Federal action agency) and Service deem necessary and in particular whenever there is new information on eastern indigo snake biology and effects of proposed projects.

The Key is a tool available to the Corps (or other Federal action agency) for the purposes of expediting section 7 consultations. There is no requirement to use the Key. There will be cases when the use of the Key is not appropriate. These include, but are not limited to: where project specific information is outside of the scope of the Key or instances where there is new biological information about the species. In these cases, we recommend the Corps (or other Federal action agency) initiates traditional consultation pursuant to section 7 of the Act, and identify that consultation is being requested outside of the Key.

Habitat

Habitat use varies seasonally between upland and wetland areas, especially in the more northern parts of the species' range. In southern parts of their range eastern indigo snakes are habitat generalists which use most available habitat types. Movements between habitat types in northern areas of their range may relate to the need for thermal refugia (protection from cold and/or heat).

In northern areas of their range eastern indigo snakes prefer an interspersion of tortoise-inhabited sandhills and wetlands (Landers and Speake 1980). In these northern regions eastern indigo

snakes most often use forested areas rich with gopher tortoise burrows, hollowed root channels, hollow logs, or the burrows of rodents, armadillos, or land crabs as thermal refugia during cooler seasons (Lawler 1977; Moler 1985a; Layne and Steiner 1996). The eastern indigo snake in the northern region is typically classified as a longleaf pine savanna specialist because here, in the northern four-fifths of its range, the eastern indigo snake is typically only found in vicinity of xeric longleaf pine–turkey oak sandhills inhabited by the gopher tortoise (Means 2006).

In the milder climates of central and southern Florida, comprising the remaining one fifth of its range, thermal refugia such as those provided by gopher tortoise burrows may not be as critical to survival of indigo snakes. Consequently, eastern indigo snakes in these regions use a more diverse assemblage of habitats such as pine flatwoods, scrubby flatwoods, floodplain edges, sand ridges, dry glades, tropical hammocks, edges of freshwater marshes, muckland fields, coastal dunes, and xeric sandhill communities; with highest population concentrations of eastern indigo snakes occurring in the sandhill and pineland regions of northern and central Florida (Service 1999). Eastern indigo snakes have also been found on agricultural lands with close proximity to wetlands (Zeigler 2006).

In south Florida, agricultural sites (*e.g.*, sugar cane fields and citrus groves) are occupied by eastern indigo snakes. The use of sugarcane fields by eastern indigo snakes was first documented by Layne and Steiner in 1996. In these areas there is typically an abundance of wetland and upland ecotones (due to the presence of many ditches and canals), which support a diverse prey base for foraging. In fact, some speculate agricultural areas may actually have a higher density of eastern indigo snakes than natural communities due to the increased availability of prey. Gopher tortoise burrows are absent at these locations but there is an abundance of both natural and artificial refugia. Enge and Endries (2009) reporting on the status of the eastern indigo snake included sugarcane fields and citrus groves in a Global Information Systems (GIS)-base map of potential eastern indigo snake habitat. Numerous sightings of eastern indigo snakes within sugarcane fields have been reported within south Florida (Florida Fish and Wildlife Conservation Commission Indigo Snake Database [Enge 2017]). A recent study associated with the Comprehensive Everglades Restoration Plan (CERP) (A-1 FEB Project formerly A-1 Reservoir; Service code: 41420-2006-F-0477) documented eastern indigo snakes within sugarcane fields. The snakes used artificial habitats such as piles of limerock, construction debris, and pump stations. Recent studies also associated with the CERP at the C-44 Project (Service code: 41420-2009-FA-0314), and C-43 Project (Service code: 41420-2007-F-0589) documented eastern indigo snakes within citrus groves. The snakes used artificial habitats such as boards, sheets of tin, construction debris, pipes, drain pipes in abandoned buildings and septic tanks.

In extreme south Florida (*i.e.*, the Everglades and Florida Keys), eastern indigo snakes also utilize tropical hardwood hammocks, pine rocklands, freshwater marshes, abandoned agricultural land, coastal prairie, mangrove swamps, and human-altered habitats. Though eastern indigo snakes have been found in all available habitats of south Florida it is thought they prefer hammocks and pine forests since most observations occur there and use of these areas is disproportionate compared to the relatively small total area of these habitats (Steiner *et al.* 1983).

Even though thermal stress may not be a limiting factor throughout the year in south Florida, eastern indigo snakes still seek and use underground refugia. On the sandy central ridge of central Florida, eastern indigo snakes 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 (Layne and Steiner 1996; Wilson and Porras 1983). 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.

Minimization Measures

The Service developed protection measures for the eastern indigo snake "Standard Protection Measures for the Eastern Indigo Snake" (Service 2013) located at: https://www.fws.gov/verobeach/ReptilesPDFs/20130812_EIS%20Standard%20Protection%20Measures_final.pdf. These protections measures (or the most updated version) are considered a minimization measure for projects proposed within eastern indigo snake habitat.

Determinations

If the use of this Key results in a determination of "**no effect**," no further consultation is necessary with the SFESO.

If the use of this Key results in a determination of "**NLAA**," the SFESO concurs with this determination and no further consultation is necessary for the effects of the proposed action on the eastern indigo snake.

For no effect or NLAA determinations, the Corps (or other Federal action agency) should make a note in the project file indicating the pathway used to reach your no effect or NLAA determination.

If a proposed project would impact less than 25 acres of vegetated eastern indigo snake habitat (not urban/ human-altered) completely surrounded by urban development, and an eastern indigo snake has been observed on site, the subsequent Key should not be used. The Service recommends formal consultation for this situation because of the expected increased value of the vegetated habitat within the individual's home range.

If the use of this Key results in a determination of "**may affect**," consultation may be concluded informally or formally depending on project effects to eastern indigo snakes. Technical assistance from the Service can assist you in making a determination prior to submitting a request for consultation. In circumstances where the Corps desires to proceed with a consultation request prior to receiving additional technical assistance from the Service, we recommend the Corps document the biological rationale for their determination and proceed with a request accordingly.

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 most current guidance for Standard Protection Measures For The Eastern Indigo Snake (currently 2013) 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.....**may affect**

C. The project will impact less than 25 acres of eastern indigo snake habitat (*e.g.*, sandhill, scrub, pine flatwoods, pine rocklands, scrubby flatwoods, high pine, dry prairie, coastal prairie, mangrove swamps, tropical hardwood hammocks, hydric hammocks, edges of freshwater marshes, agricultural fields [including sugar cane fields and active, inactive, or abandoned citrus groves], and coastal dunes).....go to D

The project will impact 25 acres or more of eastern indigo snake habitat (*e.g.*, sandhill, scrub, pine flatwoods, pine rocklands, scrubby flatwoods, high pine, dry prairie, coastal prairie, mangrove swamps, tropical hardwood hammocks, hydric hammocks, edges of freshwater marshes, agricultural fields [including sugar cane fields and active, inactive, or abandoned citrus groves], and coastal dunes).....**may affect**

D. The project has no known holes, cavities, active or inactive gopher tortoise burrows, or other underground refugia where a snake could be buried, trapped and/or injured during project activities.....**NLAA**

The project has known holes, cavities, active or inactive gopher tortoise burrows, or other underground refugia where a snake could be buried, trapped and /or injured.....go to E

E. Any permit will be conditioned such that all gopher tortoise burrows, active or inactive, will be excavated prior to site manipulation in the vicinity of the burrow[1]. If an eastern 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 eastern indigo snake, no work will commence until the snake has vacated the vicinity of proposed work.....**NLAA**[2]

Permit will not be conditioned as outlined above.....**may affect**

End Key

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[1] If excavating potentially occupied burrows, active or inactive, individuals must first obtain state authorization via a Florida Fish and Wildlife Conservation Commission 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.

[2] Please note, if the proposed project will impact less than 25 acres of vegetated eastern indigo snake habitat (not urban/ human-altered) completely surrounded by urban development, and an eastern indigo snake has been observed on site, NLAA is not the appropriate conclusion. The Service recommends formal consultation for this situation because of the expected increased value of the vegetated habitat within the individual's home range

Working with the Fish and Wildlife Foundation of Florida, the Service has established a fund to support conservation and recovery for the eastern indigo snake. Any project that has the potential to affect the eastern indigo snake and/or its habitat is encouraged to make a voluntary contribution to this fund. If you would like additional information about how to make a contribution and how these monies are used to support eastern indigo snake recovery please contact Ashleigh Blackford, Connie Cassler, or José Rivera at 772-562-3559.

This revised Key is effective immediately upon receipt by the Corps. Should circumstances change or new information become available regarding the eastern indigo snake and/or implementation of the Key, the determinations herein may be reconsidered and this Key further revised or amended.

Thank you for your continued cooperation in the effort to conserve fish and wildlife resources. If you have any questions or comments regarding this Key, please contact the SFESO at 772-562-3909.

Sincerely,

Roxanna Hinzman
Field Supervisor
South Florida Ecological Services

Cc:
Corps, Jacksonville, Florida (Dale Beter, Muriel Blaisdell, Ingrid Gilbert, Angela Ryan, Irene Sadowski, Victoria White, Alisa Zarbo)
Service, Athens, Georgia (Michelle Elmore)
Service, Jacksonville, Florida (Annie Dziergowski)
Service, Panama City, Florida (Sean Blomquist)

LITERATURE CITED

Enge K. M. 2017. Personal communication. Email from Kevin Enge, Florida Fish and Wildlife Conservation Commission, Gainesville, Florida to Steve Mortellaro, U.S. Fish and Wildlife Service, Vero Beach, Florida, July 5, 2017. Locations of Eastern Indigo Snake (*Drymarchon couperi*).

Enge K. M. and M. J. Endries. 2009. Status of the Eastern Indigo Snake (*Drymarchon couperi*) in Florida. Southeast Partners in Amphibian and Reptile Conservation Meeting.

Landers, J. L. and D.W. Speake. 1980. Management Needs of Sandhill Reptiles in Southern Georgia. Proceedings Annual Conference of Southeastern Association of Fish and Wildlife Agencies. 34: 515-529.

Layne, J.N., and T.M. Steiner. 1996. Eastern indigo snake (Drymarchon corais couperi): summary of research conducted on Archbold Biological Station. Report prepared under Order 43910-6-0134 to the U.S. Fish and Wildlife Service; Jackson, Mississippi.

Lawler, H.E. 1977. The status of *Drymarchon corais couperi* (Holbrook), the eastern indigo snake, in the southeastern U.S.A. *Herpetological Review* 8(3):76-79.

Means, D. B. 2006. Vertebrate faunal diversity of longleaf pine ecosystems. In *The Longleaf Pine Ecosystem* pp. 157-213. Springer New York.

Molar, P.E. 1985a. Distribution of the eastern indigo snake, *Drymarchon corais couperi*, in Florida. *Herpetological Review* 16(2):37-38.

Moler, P.E. 1985b. Home range and seasonal activity of the eastern indigo snake, Drymarchon corais couperi, in northern Florida. Final performance report, Study E-1-06, III-A-5. Florida Game and Fresh Water Fish Commission; Tallahassee, Florida.

Steiner, T.M., O.L. Bass, Jr., and J.A. Kushlan. 1983. Status of the eastern indigo snake in Southern Florida National Parks and vicinity. South Florida Research Center Report SFRC-83-01, Everglades National Park; Homestead, Florida.

U.S. Fish and Wildlife Service (Service). 1999. South Florida multi-species recovery plan. 23 pp.

U.S. Fish and Wildlife Service (Service). 2013. Standard Protection Measures for the Eastern Indigo Snake. August 12, 2013. U.S. Fish and Wildlife Service, South Florida Ecological Services Office; Vero Beach, Florida.

Wilson, L.D. and L. Porras. 1983. The ecological impact of man on the south Florida herpetofauna. *University of Kansas Museum of Natural History Special Publication* 9:1–89.

Zeigler, M. 2006. Personal communication. Citrus grove operations manager. Meeting with the U.S. Fish and Wildlife Service on August 1, 2006. Agricultural Resource Management; Vero Beach, Florida.

Appendix G USFWS Standard Protection Measures for the Eastern Indigo Snake

STANDARD PROTECTION MEASURES FOR THE EASTERN INDIGO SNAKE

U.S. Fish and Wildlife Service

December 2023

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 OR ANY BLACK 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