NATURAL RESOURCES EVALUATION REPORT

Florida Department of Transportation

District Seven

US 92/SR 600/Gandy Boulevard

Limits of Project: 4th Street to West Shore Boulevard

Pinellas and Hillsborough Counties, Florida

Work Program Item Segment Number: 441250-1

ETDM Number: 14335

Date: February 2023

The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried out by the Florida Department of Transportation (FDOT) pursuant to 23 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

Gandy Boulevard (US 92/SR 600) from 4th Street to West Shore Boulevard Project Development and Environment Study

Pinellas & Hillsborough Counties, Florida

Financial Project ID: 441250-1-22-01
Federal Aid Project No. TBD

ETDM #14335

Prepared for:

Florida Department of Transportation
District Seven

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February 2023

Table of Contents

List of Figures

List of Tables

Appendices

EXECUTIVE SUMMARY

Florida Department of Transportation (FDOT), District 7, is conducting a Project Development and Environment (PD&E) Study (Study) to evaluate improvements to US 92/SR 600/Gandy Boulevard (Gandy Blvd) including roadway widening, bridge widening and replacement, new stormwater management facilities, and pedestrian and bicycle accommodations. The limits of the Study are from US 92/SR 687/4th Street North in St. Petersburg (Pinellas County) to CR 587/South West Shore Boulevard in Tampa (Hillsborough County), a distance of approximately 7.0 miles. The project study area and project limits are shown in **Figure 1-1**. The project is located in Sections 7 and 8 of Township 30 South, Range 18 East, and Sections 15, 16, 17, 18, and 19 of Township 30 South, Range 17 East. The results of the Study will aid FDOT District 7 and the FDOT Office of Environmental Management (OEM) in deciding the location and design concept for the proposed improvements.

Gandy Boulevard is part of FDOT's Strategic Intermodal System (SIS) and a designated hurricane evacuation route. FDOT's functional classification for Gandy Boulevard is an urban principal arterial-other roadway. The roadway is a 4-line divided roadway with a bridge over Tampa Bay. It is divided into three roadway segments for the purposes of this Study.

The alternatives analysis involved consideration the preferred build alternative. The Preferred Alternative will be evaluated and compared to assess potential effects to the natural and physical environment, to determine their ability to meet the project's Purpose and Need, to obtain and consider agency and public comments, and to ensure compliance with all applicable federal and state laws. The Preferred Alternative will be depicted on typical roadway sections and conceptual design plans.

Stormwater management for water quality treatment and runoff attenuation will be provided using wet detention ponds within some basins, while regional approaches to nutrient removal will be taken in other basins by utilizing the Old Tampa Bay water Quality Improvement Project and optional supplemental dry retention swales.

This Natural Resources Evaluation (NRE) has been prepared as part of the PD&E Study to assess the widening alternatives and identify potential impacts to natural resources throughout the Gandy Boulevard corridor. The purpose of this NRE is to document protected species and their habitats and verify the locations of wetlands and surface waters within the project corridor in order to determine potential impacts to these resources, provide rationale to support species effect determinations, identify avoidance and minimization measures, and quantify mitigation for the recommended Preferred Alternative. This NRE has been prepared in accordance FDOT's *PD&E Manual* (FDOT, 2020) and the current Natural Resources Evaluation Outline and Guidance (FDOT, 2022).

The Preferred Alternative is located within the following United States Fish and Wildlife Service (USFWS) Consultation Areas (CA): piping plover (*Charadrius melodus*) and West Indian manatee (*Trichechus manatus latirostris*). The Preferred Alternative falls within the Core Foraging Areas (CFA) for three wood stork colonies. The existing habitats in the study area may also support

other federally protected species, as well as state protected species. Based on the results of the general wildlife and species-specific surveys, data collection, and USFWS' effect determination key, the Preferred Alternative will not jeopardize the continued existence of a protected species and/or result in the destruction or adverse modification of critical habitat. However, additional coordination with wildlife agencies will be required during the design and permitting phase, and additional wildlife surveys may be required prior to construction. **Table ES-1** identifies the protected species that were evaluated in this document, their regulatory status, and the effect determination under the Preferred Alternative.

ES-1: Effect Determinations for Protected Species

GROUP	SCIENTIFIC NAME	COMMON NAME	LISTING STATUS[1]		EFFECT DETERMINATION
			FEDERAL	STATE	
Avian	*Athene cuniclaria floridana*	Florida burrowing owl		T	NAEA
	Calidris canutus rufa	Red knot	T		MANLAA
	Charadrius melodus	Piping plover	T		MANLAA
	Charadrius nivosus	Snowy plover		T	NAEA
	Egretta caerulea	Little blue heron		T	NAEA
	Egretta rufescens	Reddish egret		T	NAEA
	Egretta tricolor	Tricolored heron		T	NAEA
	Haliaeetus leucocephalus	Southern bald eagle	BGEMA		
	Haematopus palliatus	American oystercatcher		T	NAEA
	Laterallus jamaicensis	Eastern black rail	T		No Effect
	Mycteria americana	Wood stork	T		MANLAA
	Pandion haliaetus	Osprey	MBTA		
	Platalea ajaja	Roseate spoonbill		T	NAEA
	Rychops niger	Black skimmer		T	NAEA
	Sternula antillarum	Least tern		T	NAEA
Mammal	*Perimyotis subflavus*	Tricolored bat	C		
	Trichechus manatus	West Indian manatee			MANLAA
	Ursus americanus floridanus	Florida black bear		M	
Reptile	*Crocodylus actus*	American crocodile	T		MANLAA
	Caretta	Loggerhead turtle	T		MANLAA
	Chelonia mydas	Green turtle	E		MANLAA
	Drymarchon couperi	Eastern indigo snake	T		MANLAA
	Lepidochelys kempii	Kemp's Ridley turtle	E		MANLAA
	Gopherus polyphemus	Gopher tortoise		T	NAEA

GROUP	SCIENTIFIC NAME	COMMON NAME	LISTING STATUS[1]		EFFECT DETERMINATION
			FEDERAL	STATE	
Fish	*Acipenser oxyrinchus desotoi*	Gulf sturgeon	T		MANLAA
	Manta birostris	Giant manta ray	T		MANLAA
	Pristis pectinata	Smalltooth sawfish	E		MANLAA
Plants	*Bonamia gradiflora*	Florida bonamia	T		No Effect
	Calopogon multiflorus	Many-flowered grass-pink		T	NEA
	Campanula robinsiae	Brooksville bellflower	E		No Effect
	Centrosema Arenicola	Sand butterfly pea		E	NEA
	Chionanthus pygmaeus	Pygmy fringe-tree	E		No Effect
	Chrysopsis floridana	Florida golden aster	E		No Effect
	Lechea cernua	Nodding pinweed		T	NEA
	Linum carteri var. smallii	Small's flax		E	NEA
	Nemastylis floridana	Celestial lily		E	NEA
	Nolina atopocarpa	Florida beargrass		T	NEA
	Pteroglossaspis ecristata	Giant orchid		T	NEA

MANLAA = May Affect, Not Likely to Adversely Affect
NEA = No Effect Anticipated
NAEA = No Adverse Effect Anticipated
1 = FWC listing status was not included for species with the same federal listing status due to the State's deferment of federal status under Chapter 68A-27, FAC.

Wetlands and other surface waters (OSW) with potential to be affected by the proposed project were identified within the Gandy Boulevard study area. An assessment was performed for wetlands and OSW in accordance with the Uniform Mitigation Assessment Method (UMAM) pursuant to Chapter 62-345, F.A.C., to determine the functional value provided by the wetlands and OSW and the amount of mitigation required to offset adverse impacts. OSW classified as permitted reservoirs were not included in the assessment as mitigation will not be required for impacts to these OSW. The Preferred Alternative will directly impact approximately 6.71 acres of wetlands and 1.11 acres of other surface waters. Secondary impacts to adjacent wetlands are approximately 4.02 acres. The total project impacts result in a functional loss of 5.55 units for state and federal jurisdictional wetlands. Mitigation for unavoidable adverse wetland impacts will be provided through the purchase of credits from a mitigation bank or the Old Tampa Bay Water Quality Improvement Project credits that may be used for mitigation for this project in order to satisfy all mitigation requirements of Part IV, Chapter 373 F.S., and U.S.C. 1344.

Essential Fish Habitat (EFH) has been identified within the study area. An EFH assessment was conducted and included as part of this NRE. The Preferred Alternative will impact approximately

7.10 acres of wetlands and surface waters designated as EFH. The wetland habitats being directly impacted include 0.002 acres of seagrass, 0.388 acres to the substrate, and 6.71 acres of mangrove swamps. The potential impact to EFH in the project area has been minimized through the replacement of the bridge structure like-for-like to the previous bridge, along with utilizing existing filled causeways for bridge approaches and roadway. The proposed project will not have significant direct or indirect impacts on EFH, based on the relatively minor impact to EFH, resulting in no representative species or life stages of a species being significantly impacted. Table ES-2 identifies impacts to EFH within the project area.

ES-2: Impacts to EFH

Wetland ID	FLUCFCS	Classification	Description	Impact Type	Wetland/Surface Water Impact (Acres)
WL 4	612	E1UBL	Mangrove Swamps	Direct (Fill)	0.057
WL 6	612	E2FO3N	Mangrove Swamps	Direct (Fill)	3.849
WL 7	612	E2FO3N	Mangrove Swamps	Direct (Fill)	0.357
WL 8	612	E2FO3N	Mangrove Swamps	Direct (Fill)	2.441
SW 4	540	E1UBL	Bays and Estuaries	Direct (Fill)	0.209
SW 4	540	E2USN	Bays and Estuaries (Seagrass)	Direct (Fill)	0.002
SW 9	540	PFO3R	Bays and Estuaries	Direct (Fill)	0.150
SW 11	540	E1UBL	Bays and Estuaries	Direct (Fill)	0.029

Direct Wetland Impacts	Surface Water Impacts
6.71 (ac)	0.39 (ac)

E1UBL Estuarine, Subtidal, Unconsolidated Bottom, Subtidal
E2FO3N Estuarine, Intertidal, Forested, Broad-leaved Evergreen, Regularly Flooded
E2USN Estuarine, Intertidal, Unconsolidated Shore, Regularly Flooded
PFO3R Palustrine, Forested, Broad-leaved Evergreen, Seasonally Flooded

1.0 Introduction

1.1 Project Description

The Florida Department of Transportation (FDOT), District Seven, is conducting a Project Development and Environment (PD&E) study to evaluate improvements to US 92/SR 600/Gandy Boulevard including roadway widening, bridge widening and/or replacement, new stormwater management facilities, and pedestrian and bicycle accommodations. The limits of the study are from US 92/SR 687/4th Street North in St. Petersburg (Pinellas County) to CR 587/South West Shore Boulevard in Tampa (Hillsborough County), a distance of approximately 7.0 miles. The project study area and project limits are shown in **Figure 1-1**. The existing Gandy Boulevard is a four-lane roadway with sidewalks and segments of multi-use trails. The project is located in Sections 7 and 8 of Township 30 South, Range 18 East, and Sections 15, 16, 17, 18, and 19 of Township 30 South, Range 17 East. Proposed improvements include a 4-lane to 6-lane controlled access elevated roadway, frontage roads and multi-use trails. The results of the study will aid FDOT District Seven and the FDOT Office of Environmental Management (OEM) in deciding the location and design concept for the proposed improvements.

The project was evaluated through FDOT's Efficient Transportation Decision Making (ETDM) process as project #14335. An ETDM *Programming Screen Summary Report* containing comments from the Environmental Technical Advisory Team (ETAT) was published on November 8, 2018. The ETAT evaluated the project's effects on various natural, physical, and social resources.

1.2 Project Purpose and Need

The purpose of this project is to reduce traffic congestion and improve pedestrian and bicycle accommodations on Gandy Boulevard.

This project is needed to address current and future traffic demand by improving roadway capacity and to address pedestrian and bicycle accommodations with potential connectivity over Old Tampa Bay. According to Forward Pinellas (Metropolitan Planning Organization) Active Transportation Plan, construction of bike lanes and a trail from 4th Street to west of San Martin Boulevard is planned. The Duke Energy/Pinellas Loop Trail from 28th Street to San Martin Boulevard and the San Martin Boulevard Trail from Macoma Drive (at Patica Road NE) to Gandy Boulevard are also planned.

Roadway Capacity: The US 92/SR 600/Gandy Boulevard PD&E study segment was divided into three segments for the purposes of roadway capacity and pedestrian analysis. The segment from 4th Street to the west end of the Gandy Bridge operates at a deficient level of service (LOS) in both the existing year 2020 and design year 2050. The segment from the east end of the Gandy bridges to West Shore Boulevard is forecasted to have a deficient LOS in the design year 2050.

Roadway Deficiencies: On the western side of the Gandy Bridge, a sidewalk is present on the south side of the roadway from the vicinity of 99th Avenue North to approximately 0.25 miles east

of San Fernando Drive. On the north side of the roadway a sidewalk is present from Oak Street to Brighton Bay Boulevard. At Brighton Bay Boulevard, a multi-use trail begins and terminates in the vicinity of the west end of Gandy bridges over Old Tampa Bay. On the eastern side of the Gandy Bridge, sidewalks are present on both sides of the roadway from the vicinity of Gandy Park South to West Shore Boulevard. There are no pedestrian or bicycle accommodations located on the Gandy Bridge. This project will address the need for bicycle and pedestrian improvements along the US 92/SR 600/Gandy Boulevard corridor.

1.3 Existing Facility and Project Segments

Gandy Boulevard is part of FDOT's Strategic Intermodal System (SIS) and a designated hurricane evacuation route. FDOT's functional classification for Gandy Boulevard is an urban principal arterial-other roadway.

The project was divided into three segments for the purpose of evaluating future traffic capacity needs and differences in existing roadway typical sections as shown in **Figure 1-1**.

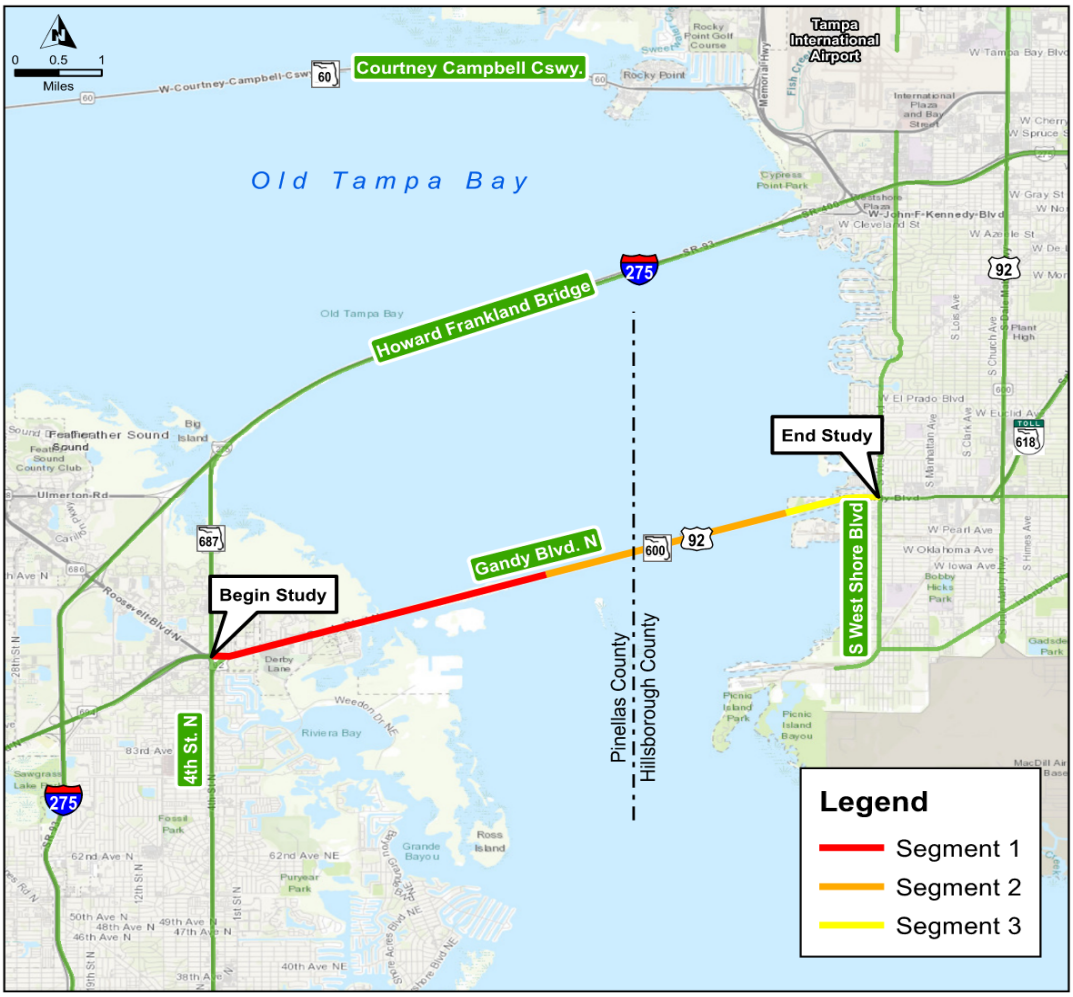


Figure 1-1: Project Location Map

Segment 1

Segment 1 (Pinellas Segment) begins at the western project limit at 4th Street and extends 3.5 miles to the west end of the Gandy bridges over Old Tampa Bay in Pinellas County. Within Segment 1, the existing facility consists of a four-lane divided roadway with a varying median width (40 feet minimum), four 12-foot travel lanes, paved outside shoulders (four-foot minimum) designated for bicycle use on the south side, intermittent sidewalk segments, a 12-foot multi-use trail on the north side, and open ditches along the outside. The existing right-of-way (ROW) width varies in Segment 1 with a minimum width of 172 feet as shown in **Figure 1-2**. There are numerous side street and driveway connections to the residential and business land uses between 4th Street and San Fernando Drive.

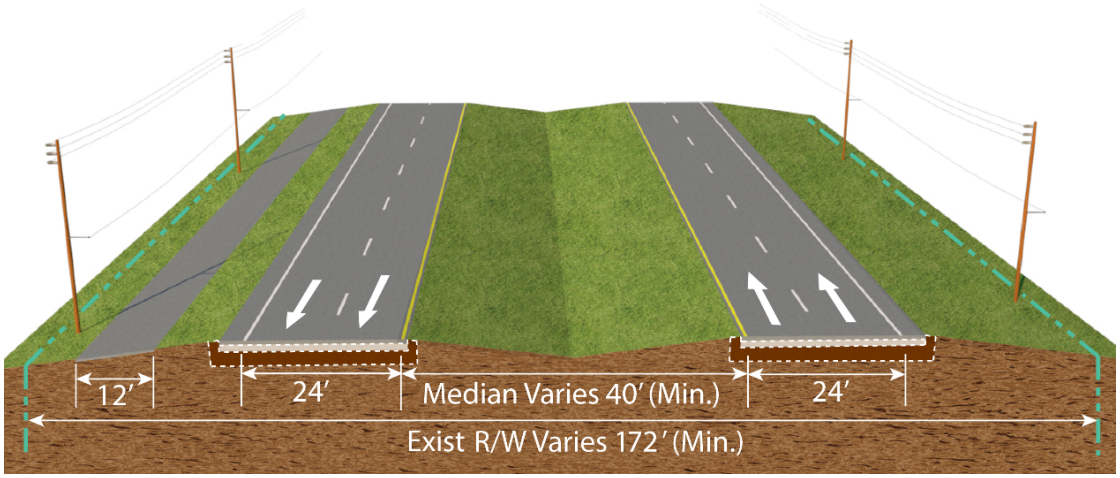


Figure 1-2: Existing Roadway Typical Section – Segment 1 – 4th St. to west end of Gandy bridges

Segment 2

Segment 2 (Bay Segment) includes the Gandy bridges over Old Tampa Bay. The existing eastbound bridge (#100300), constructed in 1975, and existing westbound bridge (#100585), constructed in 1996, extend approximately 2.5 miles. Both the existing eastbound and westbound bridges consist of two 12-foot travel lanes, a six-foot inside shoulder, and a ten-foot outside shoulder as shown in **Figure 1-3**. The westbound bridge was designed to accommodate an additional travel lane by widening on both sides of the bridge. Currently, neither the eastbound or westbound bridge provides pedestrian or bicycle accommodations.

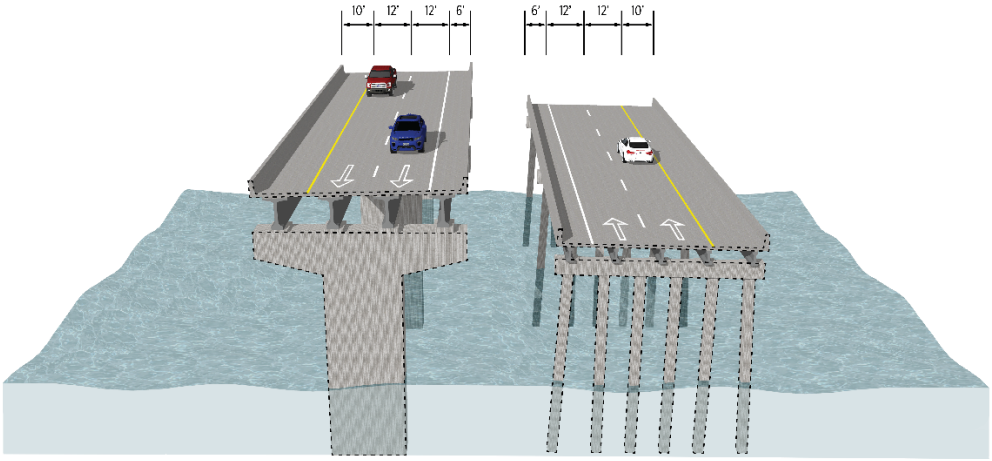


Figure 1-3: Existing Bridges Typical Section – Segment 2 – Gandy bridges

Segment 3

Segment 3 (Hillsborough Segment) begins at the east end of the Gandy bridges over Old Tampa Bay and extends approximately one mile to West Shore Boulevard in Hillsborough County. Within Segment 3, the existing Gandy Boulevard consists of a four-lane divided roadway. The typical section consists of two 11-foot travel lanes, urban curb and gutter, and a 6 to 12-foot sidewalk/multi-use trail on the north and south side. There is a varying median width due to the inside two elevated travel lanes which serve as the Selmon Expressway (SR 618) viaduct operated and maintained by the Tampa Hillsborough Expressway Authority. The existing ROW width varies in Segment 3 with a minimum width of 100 feet as shown in **Figure 1-4**.

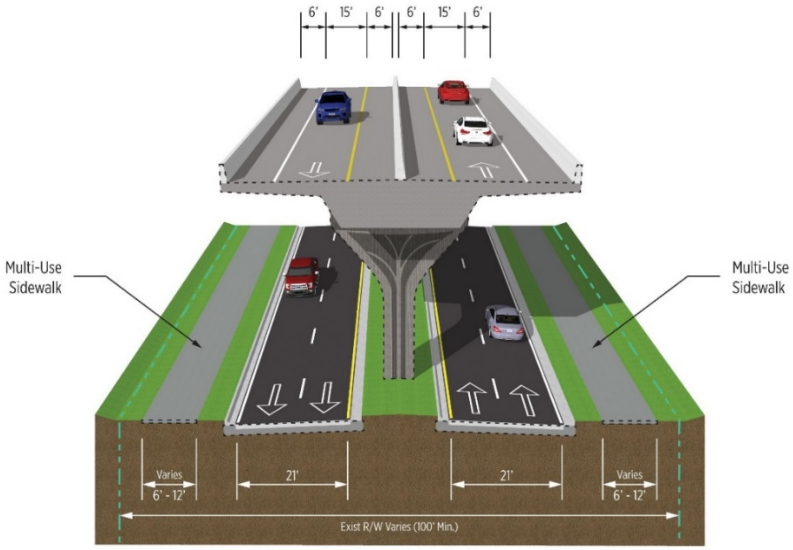


Figure 1-4: Existing Roadway Typical Section (Curb and Gutter) – Segment 3 – east end of Gandy bridges to West Shore Blvd.

1.4 Proposed Action

The proposed action is to reduce traffic congestion and improve pedestrian and bicycle accommodations by reconstructing Gandy Boulevard to provide an elevated controlled access roadway mainline separated from local traffic with frontage roads and multi-use trails on both sides of the corridor for pedestrians and bicyclists. The proposed action will also widen the existing westbound Gandy bridge to accommodate a third travel lane and construct a new bridge to provide a wider structure for three travel lanes and a multi-use trail.

1.5 Build Alternative

1.5.1 Segment 1

Typical Section 1

The Build Alternative for Segment 1 (Pinellas Segment) includes three typical sections. Typical Section 1 is proposed from 4th Street to Brighton Bay Boulevard and from east of San Martin Boulevard to approximately 3,000 feet east of San Fernando Drive. Typical Section 1 consists of an elevated controlled access facility with two 12-foot travel lanes in each direction, varying inside shoulder widths (four feet to eight feet paved), ten-foot paved outside shoulders, and a 46-foot depressed median separated by guardrail. The local traffic will be accommodated along eastbound and westbound one-way frontage roads consisting of two 11-foot travel lanes with curb and gutter. Twelve-foot multi-use trails are proposed along the outside of the frontage roads on both sides of the corridor as shown in **Figure 1-5**. Typical Section 1 will require ROW acquisition to the south side of Gandy Boulevard approaching Brighton Bay Boulevard which varies from zero to 119 feet. The alignment shifts from the south to the north through the San Martin Boulevard intersection heading east where the ROW acquisition varies from zero to 80 feet.

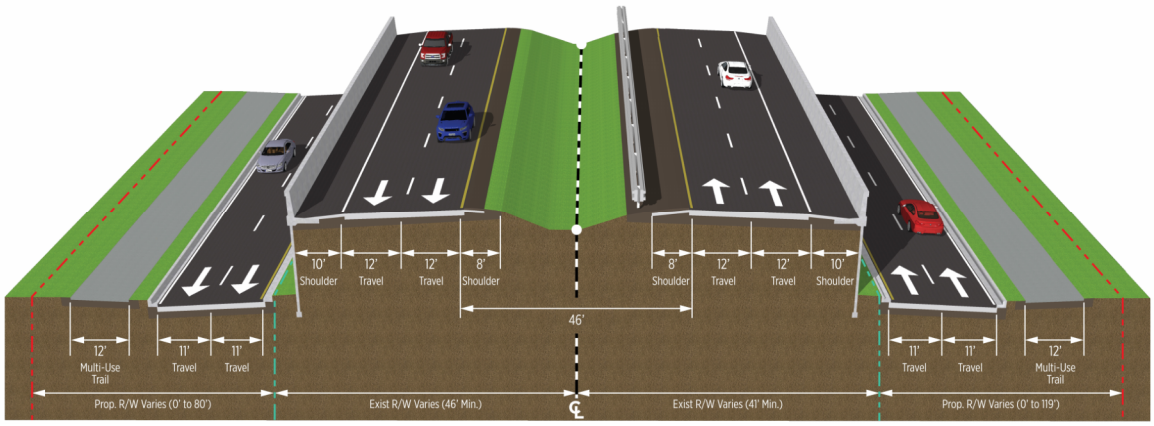


Figure 1-5: Segment 1 – Typical Section 1 from 4th Street to Brighton Bay Blvd.; San Martin Blvd. to East of San Fernando Dr.

Typical Section 2

Typical Section 2 is proposed from west of Brighton Bay Boulevard to San Martin Boulevard and consists of a centered elevated viaduct with frontage roads on both sides. The viaduct consists of two 12-foot travel lanes in each direction separated by a concrete barrier wall with six-foot inside shoulders and ten-foot outside shoulders. The bridge concept could be widened to the outside if additional lanes are needed in the future. The eastbound and westbound frontage roads consist of two 11-foot travel lanes with curb and gutter. Twelve-foot multi-use trails are proposed along the outside of the frontage roads on both sides of the corridor as shown in **Figure 1-6**. Typical Section 2 will require ROW acquisition along the south side of Gandy Boulevard which varies from zero to 119 feet and along the north side of Gandy Boulevard varying from zero to 80 feet.

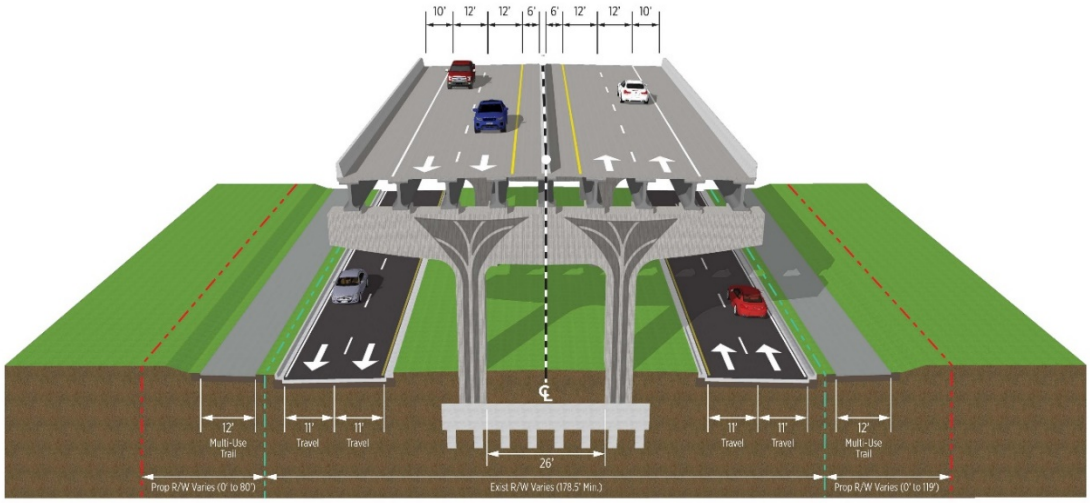


Figure 1-6: Segment 1 – Typical Section 2 from Brighton Bay Blvd. to San Martin Blvd.

Typical Section 3

Typical Section 3 is proposed from East of San Fernando Drive to the west end of the Gandy bridges. An additional travel lane in either direction is developed from the direct connect access ramps from the local frontage roads creating a six-lane typical section throughout the causeway which continues east over the Gandy bridges. Typical Section 3 consists of an elevated controlled access roadway with three 12-foot travel lanes in each direction, ten-foot paved inside shoulders, and ten-foot paved outside shoulders with barrier wall in each direction. The median transitions from 46 feet to 22 feet with opposing travel lanes separated by median barrier wall. One-lane frontage roads are proposed on the outside of the controlled access roadway in each direction with a 15-foot travel lane, varying outside shoulder widths (seven feet to nine feet paved), curb and gutter, and a 12-foot multi-use trail. One of the frontage roads will provide access to multi-use trail parking. Typical Section 3 is proposed within the existing FDOT ROW as shown in **Figure 1-7**.

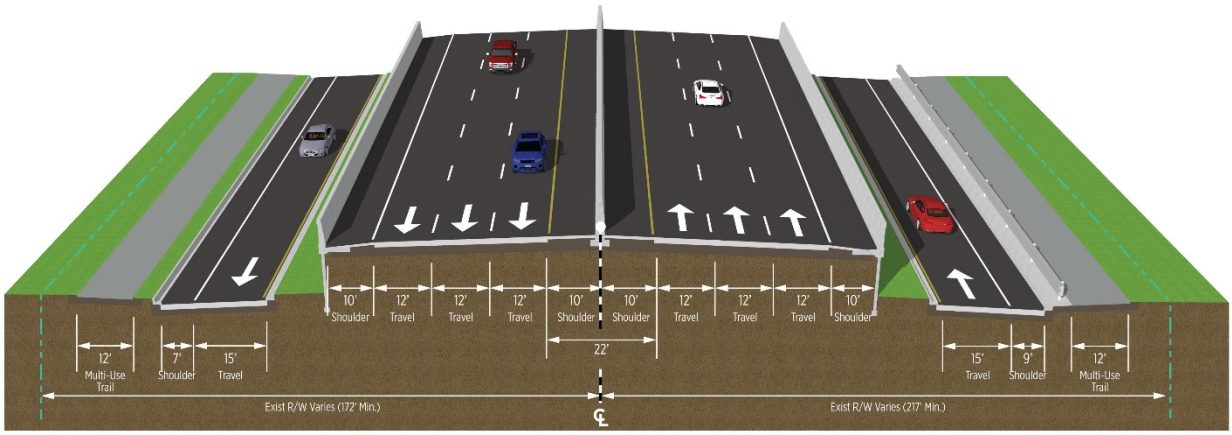


Figure 1-7: Segment 1 – Typical Section 3 from East of San Fernando Dr. to west end of Gandy bridges

1.5.2 Segment 2

Typical Section 4

The Build Alternative for Segment 2 (Bay Segment) includes Typical Section 4 with three eastbound travel lanes, three westbound travel lanes, and a multi-use trail on the north side of the westbound bridge. As part of the Build Alternative, the existing eastbound bridge (#100300) will be demolished. The existing westbound bridge (#100585) will be widened to both the north and south sides and placed into service as the eastbound bridge. The widened bridge (#100585) will consist of three 12-foot travel lanes and ten-foot inside and outside shoulders. A new westbound bridge will be constructed on the north side of the widened bridge. The new westbound bridge will consist of three 12-foot travel lanes, ten-foot inside and outside shoulders, and a 16-foot multi-use trail separated by barrier wall as shown in **Figure 1-8**. The typical section includes an 88-foot median with approximately 65 feet of separation between the two bridges for constructability. The proposed bridge improvements over Old Tampa Bay are within the existing FDOT ROW.

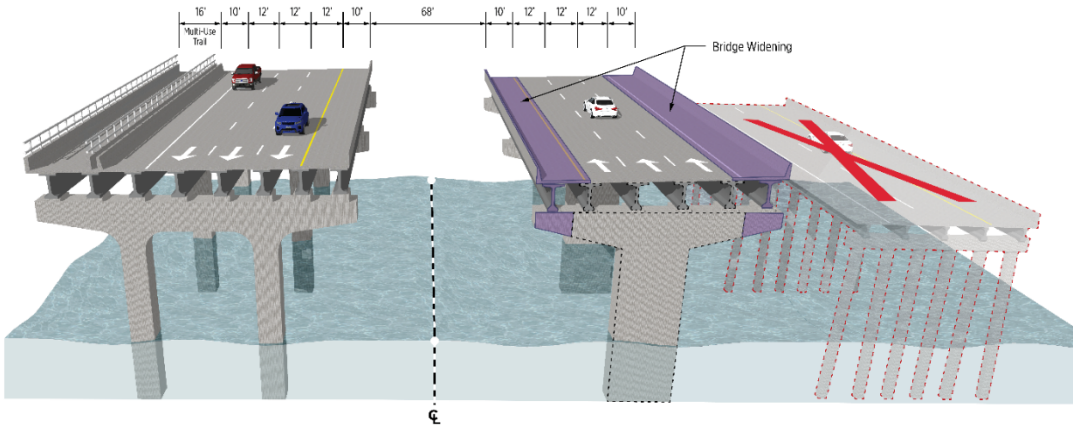


Figure 1-8: Segment 2 – Typical Section 4 Bridges over Old Tampa Bay

1.5.3 Segment 3

Typical Section 5

The Build Alternative for Segment 3 (Hillsborough Segment) provides a four-lane and six-lane divided typical section. Typical Section 5 is a transitional typical section proposed between the east end of the Gandy bridges to approximately 1,800 feet west of Bridge Street where the Selmon Expressway two-lane elevated viaduct begins in the median. Typical Section 5 consists of three 12-foot travel lanes in each direction, ten-foot paved inside shoulders bordered with guardrail and barrier wall, and ten-foot paved outside shoulders with barrier wall. The inside travel lanes function as the general use lanes across the Gandy bridges and become auxiliary lanes to serve as the entrance and exit lanes for the Selmon Expressway viaduct in the median. A 12-foot wide multi-use trail is proposed on both sides of the roadway as shown in **Figure 1-9**.

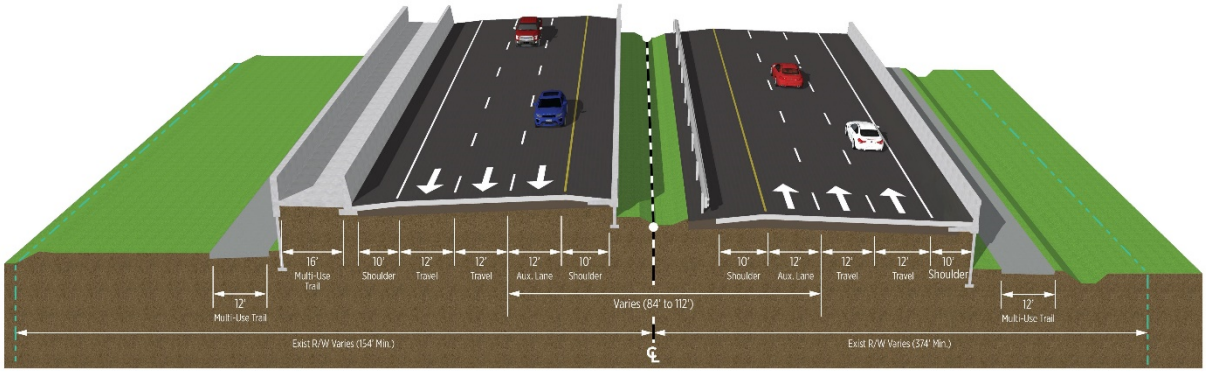


Figure 1-9: Segment 3 – Typical Section 5 from east end of the Gandy bridges to approximately 1,800 feet west of Bridge Street

Typical Section 6

Typical Section 6 is proposed from approximately 1,800 feet west of Bridge Street to West Shore Boulevard. The proposed improvements within the limits of Typical Section 6 are limited to intersection and access management improvements, and auxiliary lane development to connect the proposed relocated Gandy Boat Ramp turnout approximately 800 feet west of Bridge Street. The proposed typical section will match the existing roadway with a four-lane divided roadway, one 10-foot travel lane and one 11-foot travel lane in each direction. Typical Section 6 will accommodate the existing Selmon Expressway two-lane viaduct within the median with intermittent bridge piers. (**Figure 1-10**). The Segment 3 improvements are proposed within the existing FDOT ROW.

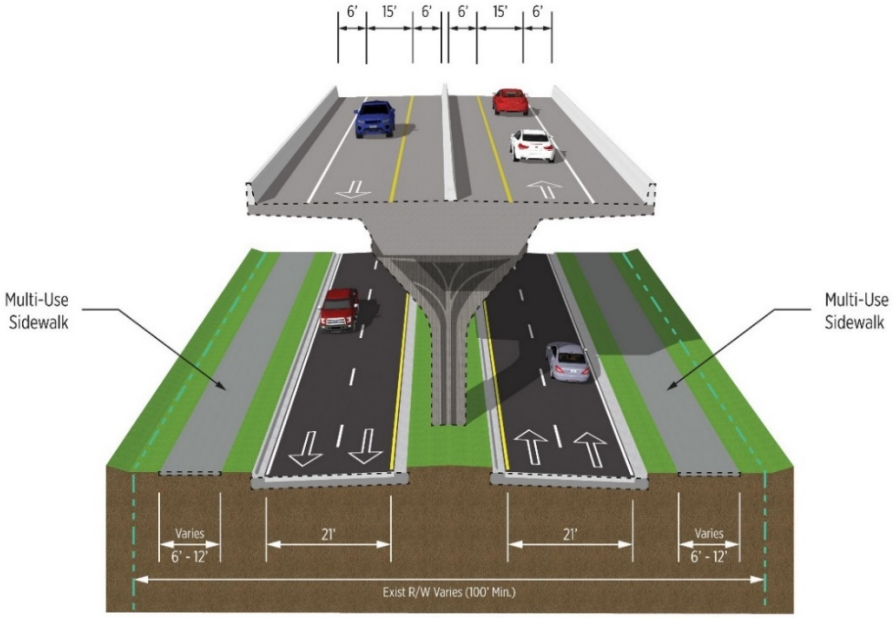


Figure 1-10: Segment 3 – Typical Section 6 from 1,800 feet west of Bridge Street to West Shore Blvd.

1.5 Proposed Pond Sites

There are four proposed drainage basins associated with the Build Alternative. In Basin 1, there is one proposed stormwater management facility (SMF), which is an expansion of an existing FDOT SMF at Gandy Boulevard and 4th Street. In Basin 2, there are two offsite wet detention SMF alternatives, both located on the south side of Gandy Boulevard, and one (Pond 2B) is recommended for this study. Basins 3 are 4 are proposed to utilize nutrient removal credits that were created by the Old Tampa Bay Water Quality Improvement Project, and therefore do not have proposed SMFs. In total, two SMFs are recommended for this study.

1.6 Purpose of Report

This Natural Resources Evaluation (NRE) has been prepared to document protected species and their habitats in the project area, analyze potential impacts to those protected species and their habitats due to the proposed alternatives, provide rationale to support effect determinations for those protected species based on the recommended alternative, and evaluate the potential wetland impacts and mitigation needs for the recommended alternative. The NRE is prepared in accordance with Wetlands and Other Surface Waters and Protected Species and Habitat, of the FDOT's PD&E Manual and the current Natural Resources Evaluation Outline and Guidance.

SECTION 2 – EXISTING ENVIRONMENTAL CONDITIONS

Prior to field investigations, staff ecologists reviewed the most currently available information to identify existing conditions within the study area. Land use, soils, and other natural features were identified to determine what resources occur or have the potential to occur within the Gandy Boulevard study area. This information included land use maps provided by the Southwest River Water Management District (SWFWMD). The land use descriptions were based on the Florida Land Use, Cover and Forms Classification System (FLUCFCS) (FDOT 1999). Other information included but was not limited to:

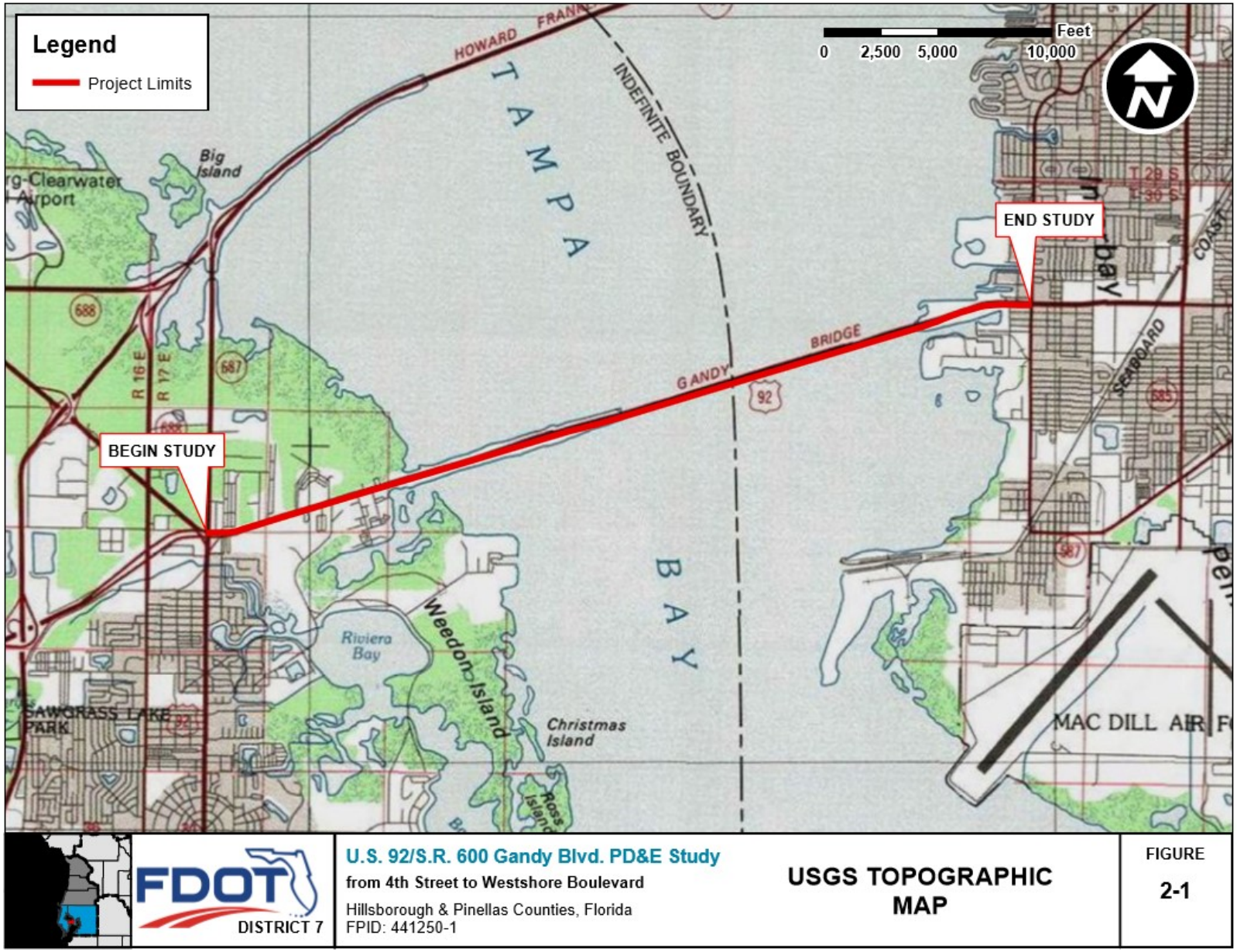
- U.S. Geographic Survey (USGS) Topographic Maps (https://viewer.nationalmap.gov/launch/)
- Natural Resources Conservation Service (NRCS) Soil Maps (https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm)
- Florida Natural Areas Inventory (FNAI) Cooperative Land Cover Maps (https://www.fnai.org/services/coop-land-cover)
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) Maps (https://www.fws.gov/wetlands/data/mapper.html)
- USFWS Consultation Area and Critical Habitats Maps (https://crithab.fws.gov/)
- USFWS Wood Stork Nesting Colonies and Core Foraging Areas Maps
- USFWS IPaC Information for Planning and Consultation (https://ecos.fws.gov/ipac)
- National Marine Fisheries Service (NMFS) Essential Fish Habitat (EFH) Maps (https://www.habitat.noaa.gov/protection/efh/habitatmapper.html)
- Audubon Florida EagleWatch Nest Website (https://cbop.audubon.org/conservation/about-eaglewatch-program)
- FWC Wildlife Occurrence Maps (http://geodata.myfwc.com/datasets)
- FWC ShoreMapper for Imperiled Beach-Nesting Birds (IBNB) (https://gis.myfwc.com/shoremapper/)
- FWC Species Action Plans (http://myfwc.com/wildlifehabitats/imperiled/species-action-plans/)
- FDOT Efficient Transportation Decision Making (ETDM) Summary Report #14335 (https://etdmpub.fla-etat.org/est/#)

2.1 Topography

The study area lies within the Southwestern Flatlands ecoregion of Florida (Griffith et al., 1994). This area consists of barrier islands, Gulf coastal flatlands, and gently sloping coastal plain terraces at higher elevations. Coastal areas in this region are urbanizing rapidly. According to the

USGS, elevations within the Gandy Boulevard study area vary from approximately 0 feet above sea level to approximately 5 feet above sea level (**Figure 2-1**).

Figure 2-1: USGS Topographic Map



2.2 Land Use

The land uses within the Gandy study area were first characterized by SWFWMD online resources and later modified by ecologists to reflect field observations made at the time of the Study. The study area contains a mixture of several FLUCFCS types including urban and built up, water, wetlands, transportation, communications, and other utilities. (**Figure 2-2A – 2-2C**). Gandy Boulevard crosses over the Tampa Bay and is adjacent to wetlands associated with the bay. Residential areas and stormwater reservoirs are found near the eastern and western ends of the project area. A detailed list of the land uses within the study area is provided **Table 2-1** along with additional descriptions of the land uses in **Appendix A**. Photographs of representative habitats in the study area are provided in **Appendix B**.

The project is unlikely to trigger secondary development or change existing land use patterns. This corridor is currently highly developed, and the proposed widening is intended to address current and future traffic demand by improving roadway capacity and to address pedestrian and bicycle accommodations.

2-1 FLUCFCS within the Gandy Boulevard

FLUCFCS Distribution Table			
CODE ID	**Description**	**Area Acreage**	**Total Percentage***
120	RESIDENTIAL MED DENSITY 2->5 DWELLING UNITS/ACRE	4.27	0.47%
130	RESIDENTIAL HIGH DENSITY > 6 DWELLING UNITS/ACRE	70.23	7.70%
140	COMMERCIAL AND SERVICES	73.55	8.07%
170	INSTITUTIONAL	12.99	1.43%
180	RECREATIONAL	66.07	7.25%
190	OPEN LAND (URBAN)	33.44	3.67%
420	UPLAND HARDWOOD FORESTS	2.44	0.27%
530	RESERVOIRS	9.69	1.06%
540	BAYS AND ESTUARIES	457.38	50.18%
612	MANGROVE SWAMPS	53.77	5.90%
615	STREAM AND LAKE SWAMPS (BOTTOMLAND)	3.46	0.38%
630	WETLAND FORESTED MIXED	0.73	0.08%
641	FRESHWATER MARSHES	0.49	0.05%
642	SALTWATER MARSHES	0.25	0.03%
652	SHORELINES	27.81	3.05%
660	SALT FLATS	0.43	0.05%
810	TRANSPORTATION	81.71	8.96%
820	COMMUNICATIONS	10.58	1.16%
830	UTILITIES	2.21	0.24%

Figure 2-2: FLUCFCS Map

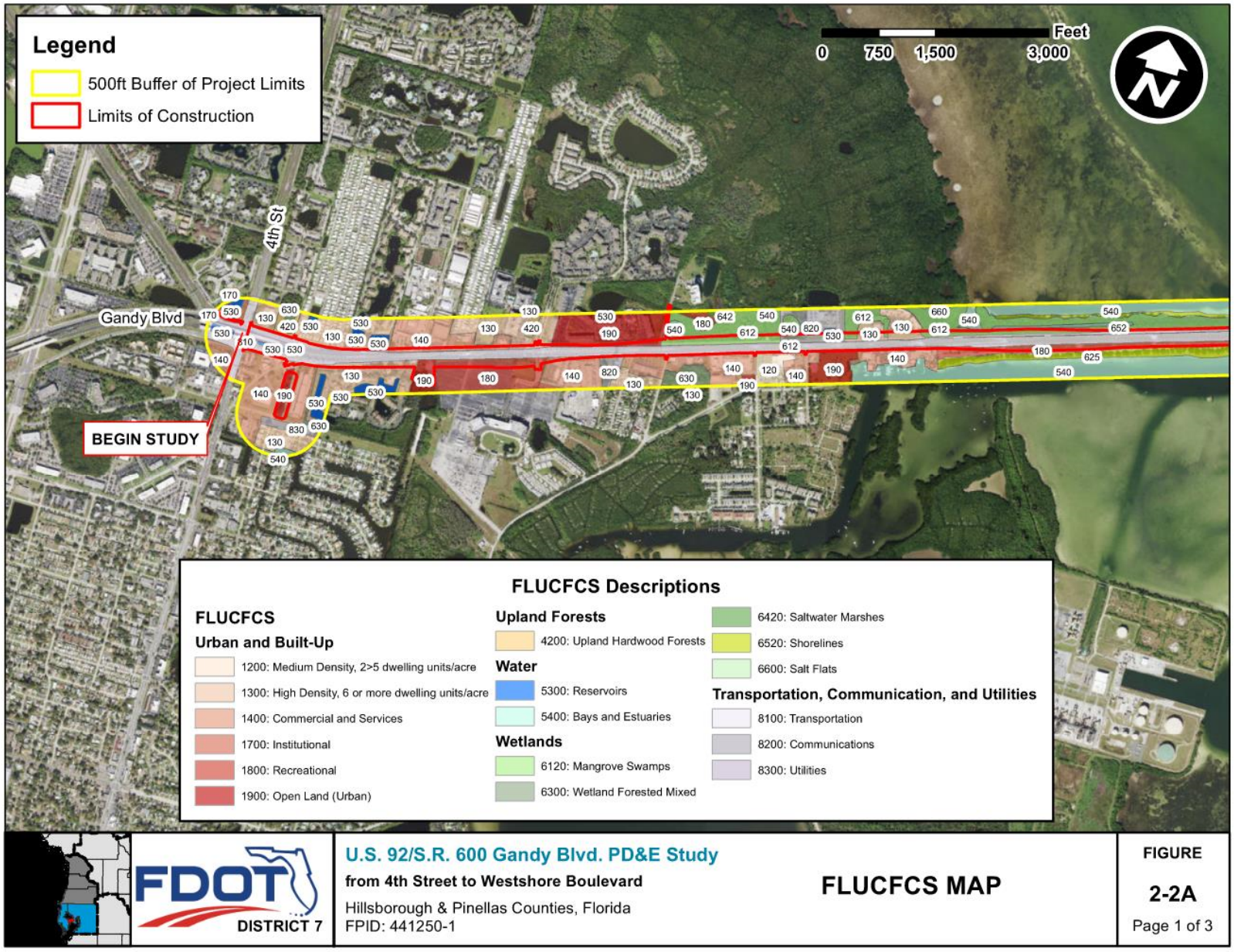


Figure 2-2: FLUCFCS Map (Cont.)

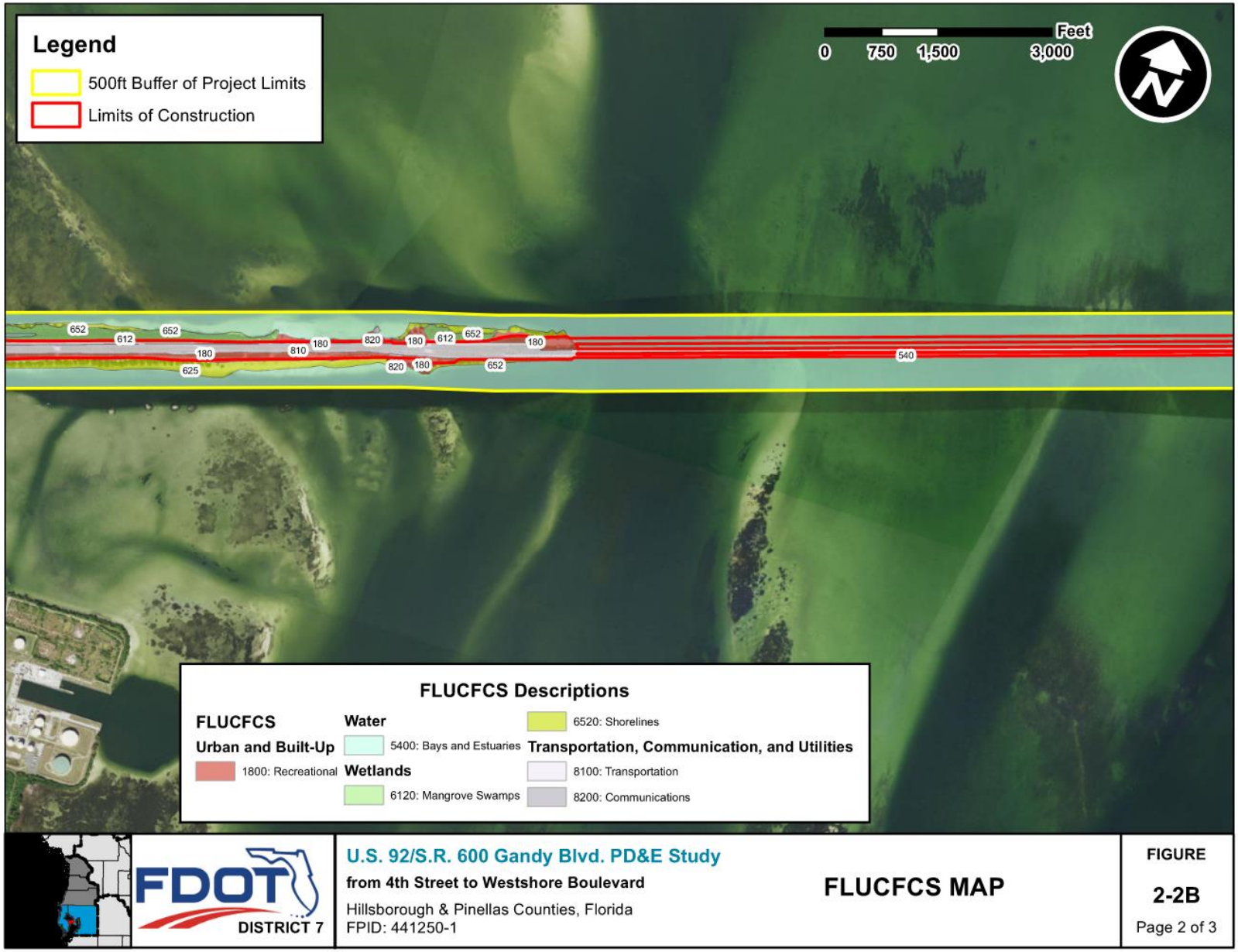
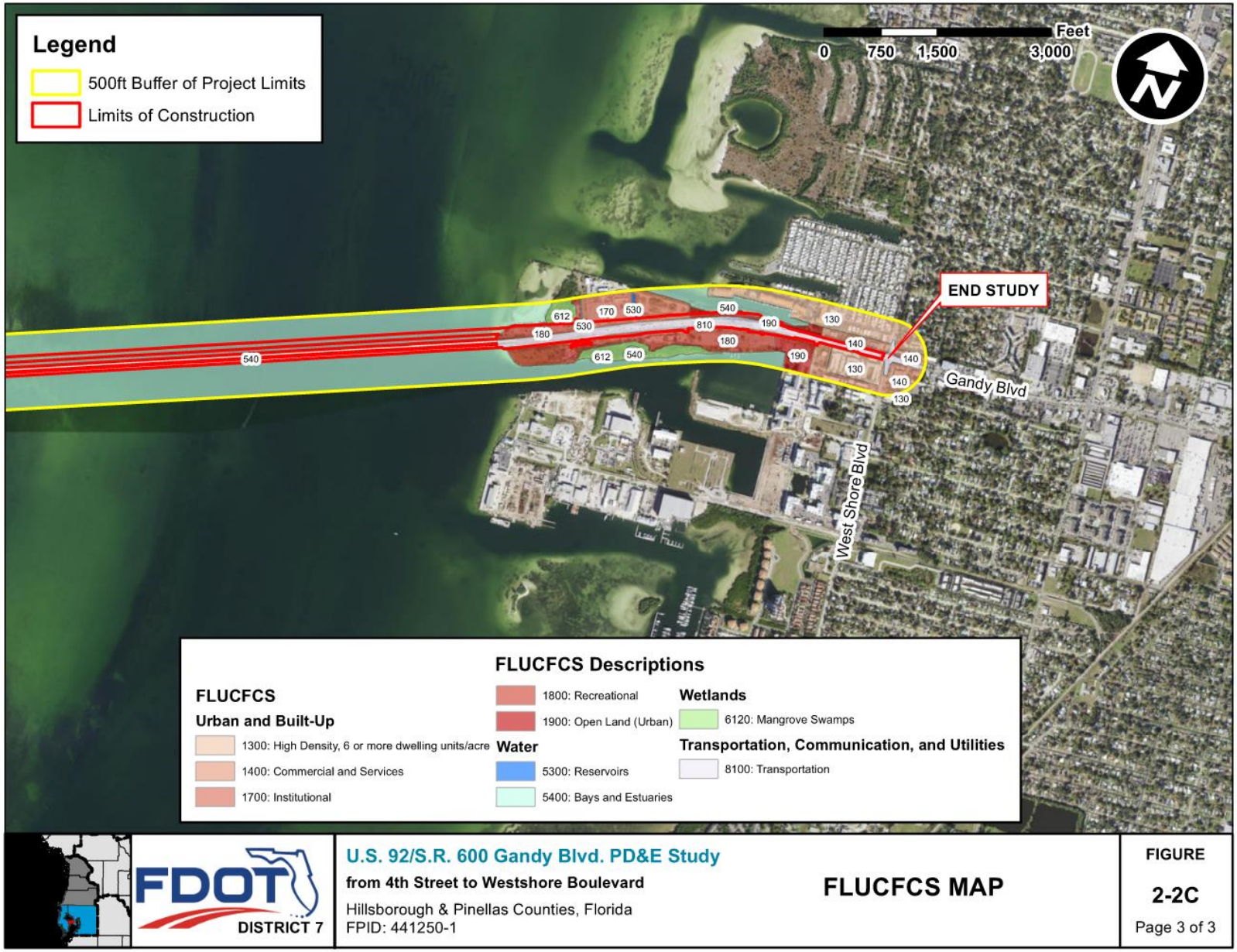


Figure 2-2: FLUCFCS Map (Cont.)



2.3 Soils

The soil surveys of Hillsborough County (NRCS, 1989) and Pinellas County, Florida (NRCS, 2006) were reviewed to determine the soil types and characteristics within the Gandy Boulevard study area (**Appendix C**). The soils within and adjacent to the proposed project limits include those within Hydrologic Soil Group (HSG) B/D, C, and D. HSG B consists chiefly of moderately deep or deep, moderately well drained, or well drained soils that have moderately fine texture to moderately course texture with moderate infiltration rate when thoroughly wetted. HSG C consists chiefly of moderately fine or fine texture soils or soils having a layer that impedes the downward movement of water with a slow infiltration rate of water. HSG D consists chiefly of clays that have high shrink-swell potential, soils that have a high-water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. According to the soil survey, there are 7 different soil types located in Hillsborough County within the Gandy Boulevard study area and 15 different soil types located in Pinellas County also within the study area. The soil types are depicted on (**Figure 2-3A - 2-3C**).

Figure 2-3: NRCS Soils Map

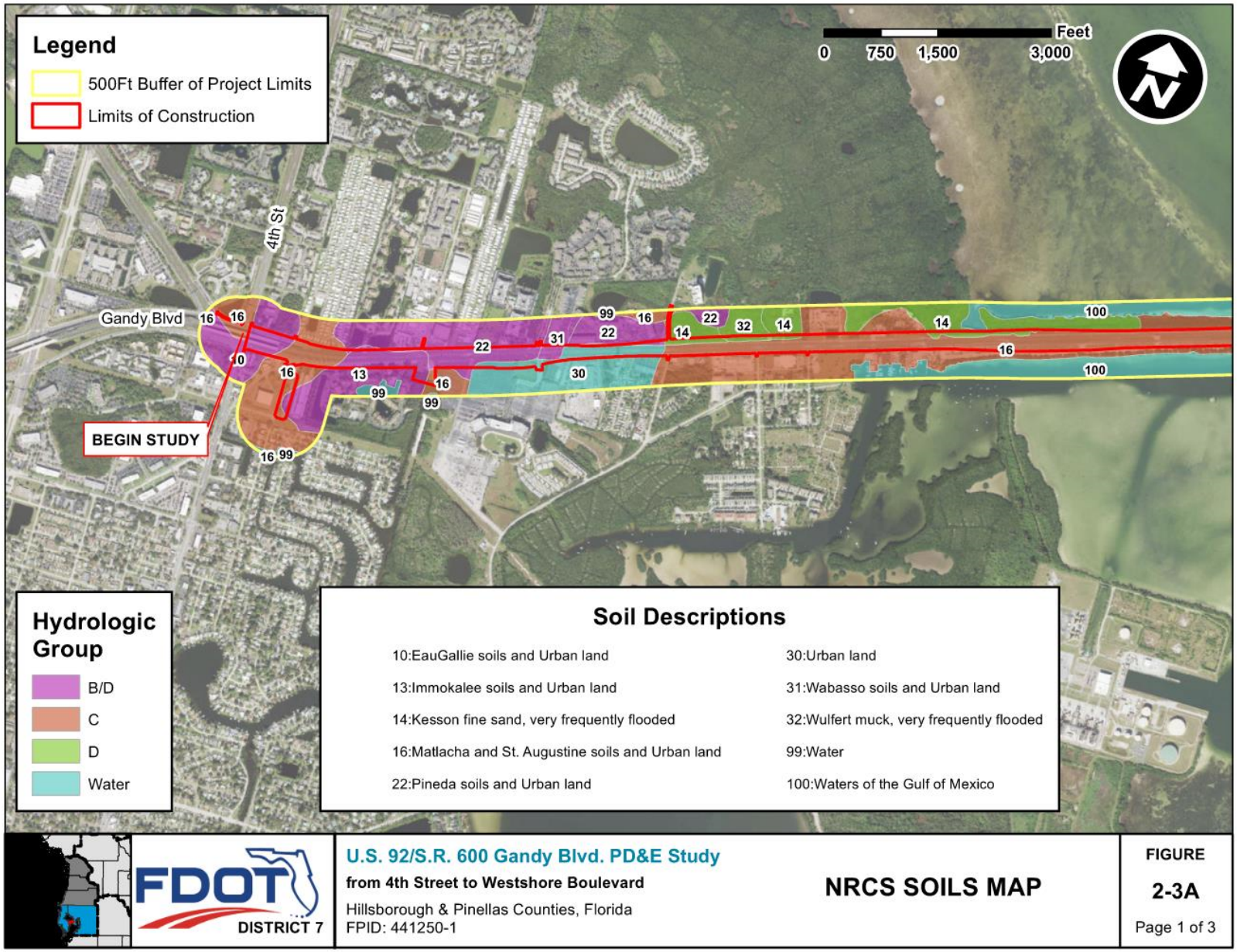


Figure 2-3: NRCS Soils Map (Cont.)

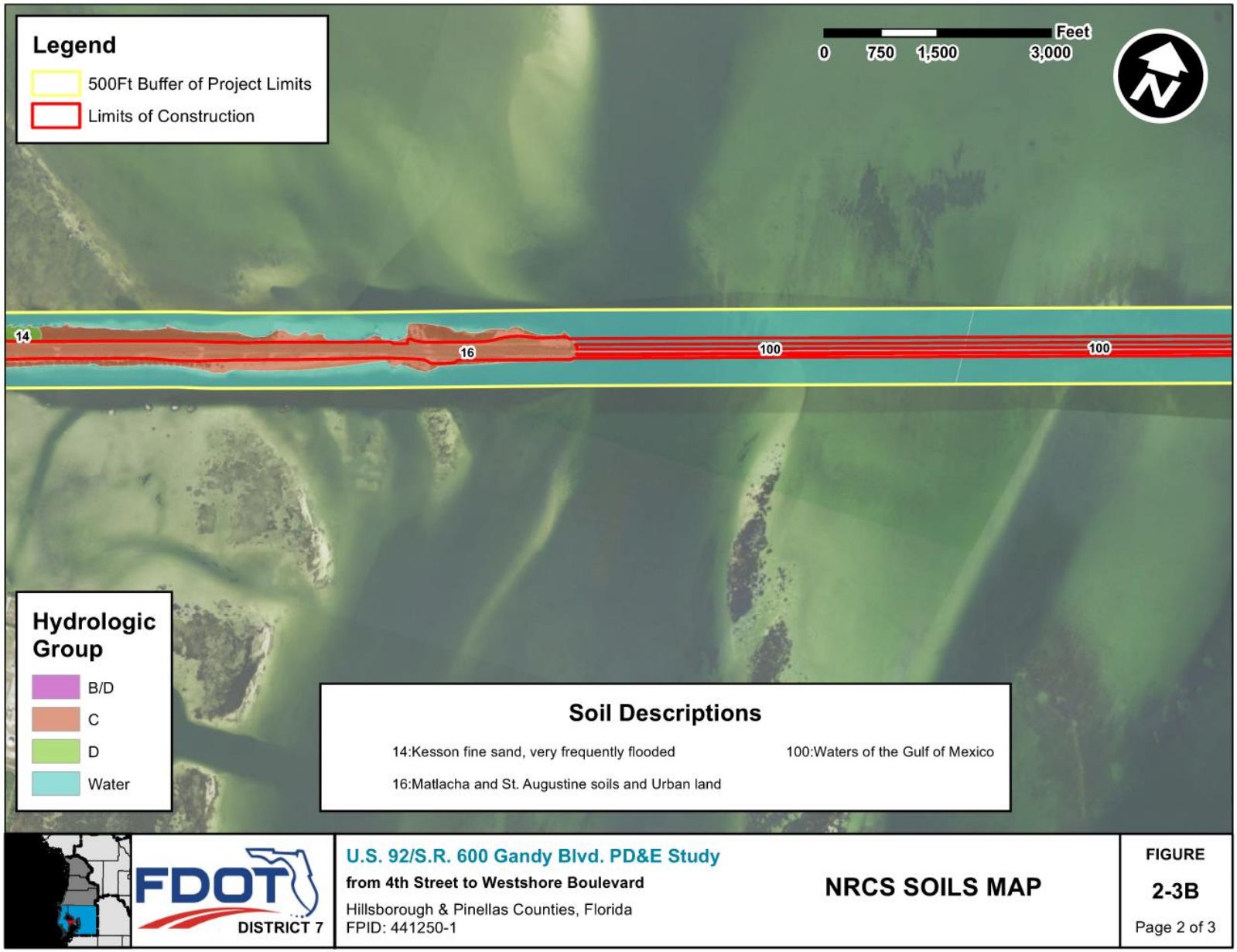
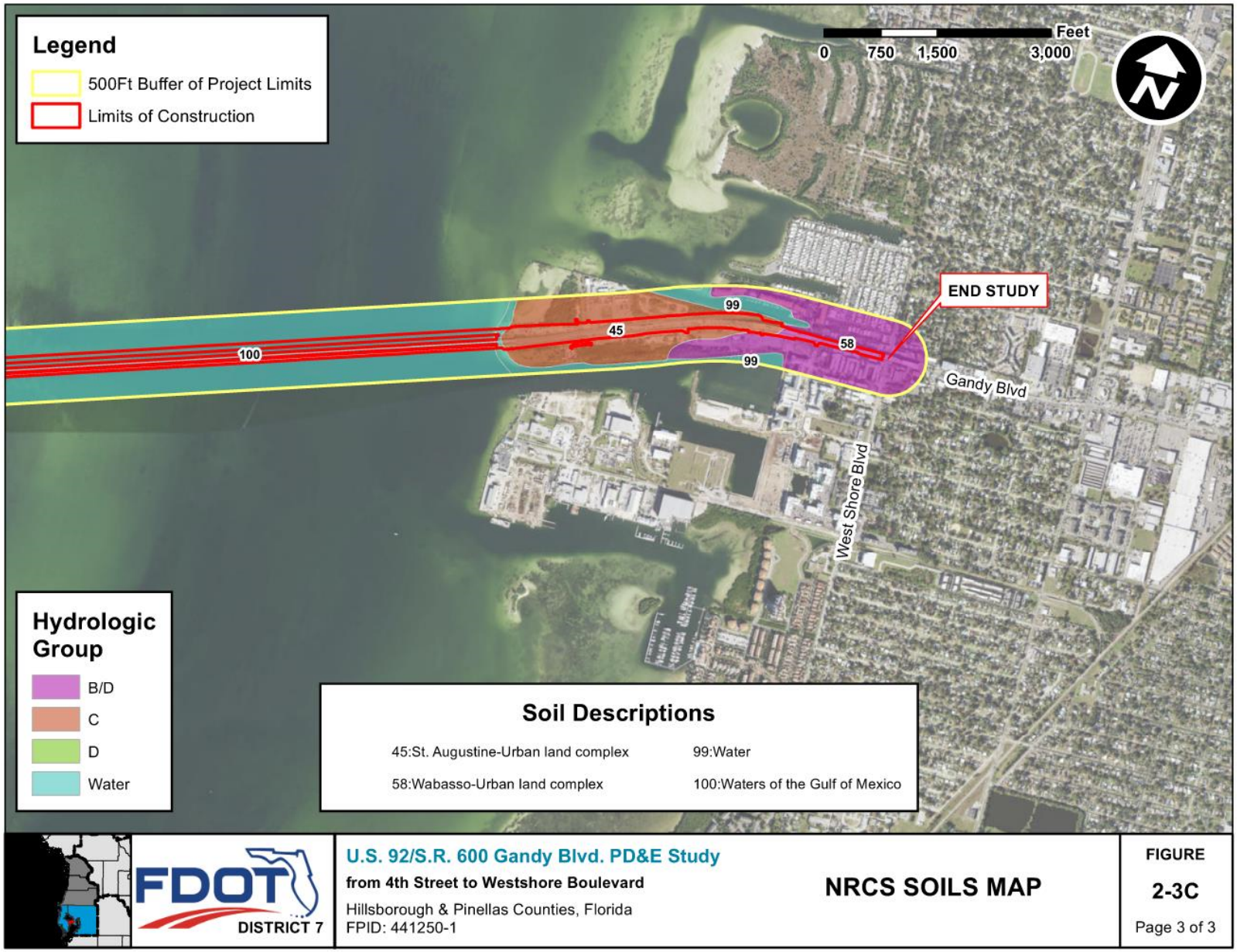


Figure 2-3: NRCS Soils Map (Cont.)



2.4 Natural Features

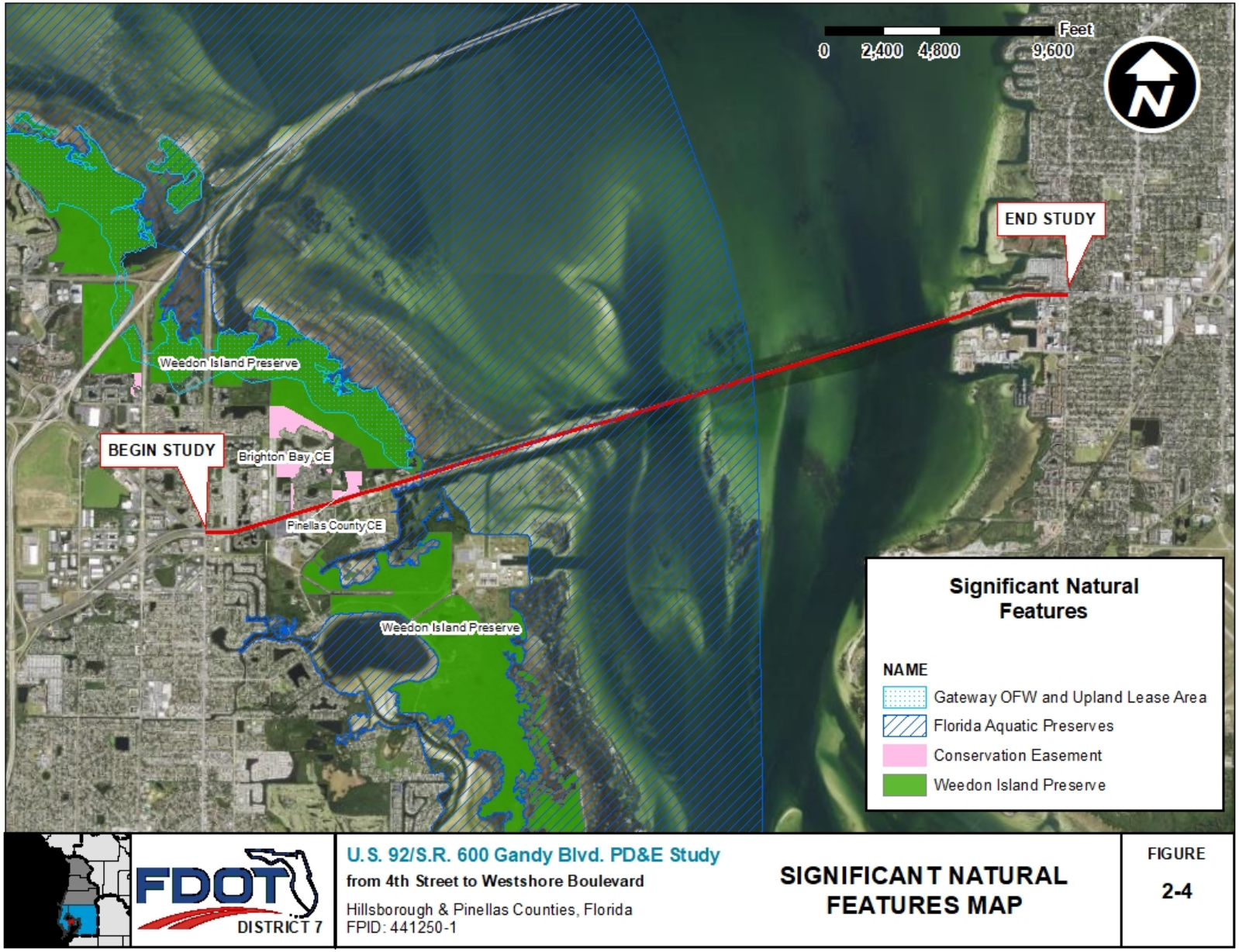
The study area was evaluated for natural features and potential impacts to these features. The study area crosses Tampa Bay, which is an Aquatic Preserve (AP). The drainage of the project has been evaluated to ensure that any discharges to an AP meet the criteria in Chapter 18-20, Florida Administrative Code (FAC). Water quality credits from previous FDOT mitigation efforts will be utilized to offset any untreated areas that discharge into Tampa Bay. See **Section 2.5** for further drainage information.

Weedon Island Preserve is a coastal system owned and leased by Pinellas County. Portions of Weedon Island Preserve are dedicated to Pinellas County through an upland lease agreement (Lease #3376) from the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida. There are portions of the preserve located adjacent to the project area, north of Segment 1, adjacent to Tampa Bay. The areas north of Segment 1 are known as the "Gateway Tracts". The preserve encompasses over 3,000 acres of marine ecosystem with upland islands interspersed throughout. Weedon Island provides flood and erosion protection to the shoreline of Tampa Bay, as well as habitat for protected species, including EFH. Weedon Island has not been designated as critical habitat for any protected species. FDOT will complete any necessary coordination with the Official with Jurisdiction and FDEP if impacts to this resource become known.

There are two conservation easements (CE) within the study area. The first CE is dedicated to SWFWMD and is located to the north of Gandy Boulevard within Segment 1 of the study area. This CE was recorded as mitigation for the Verandahs of Brighton Bay, a single- and multi-family development on the north side of Gandy Boulevard. The second CE is dedicated to Pinellas County and is also located within Segment 1 of the study area, adjacent to Mangrove Cay Lane. FDOT will complete any necessary coordination with the SWFWMD or Pinellas County if impacts to these CEs become known.

Figure 2-4 shows significant natural features adjacent to study area.

Figure 2-4: Significant Natural Features Map



2.5 Drainage

The project is within the jurisdiction of SWFWMD. The stormwater management approach includes the use of an existing permitted stormwater pond, a proposed new wet detention pond, and Old Tampa Bay Water Quality Improvement Project nutrient mitigation credits. The project is divided into 4 sub-basins based on the existing roadway profile, permitted basins, and outfall locations. The Pond Siting Report (PSR), under separate cover, was developed to document Pinellas County, Hillsborough County, FDOT, and SWFWMD stormwater requirements and identify stormwater management needs.

In Basin 1, an existing permitted stormwater treatment pond is located underneath the Gandy Boulevard bridge and can be expanded to meet the stormwater requirements of this project. As such, this is the only alternative for this Basin. Basin 2 has two pond site alternatives, which are both offsite wet detention ponds. Basins 3 and 4 are located adjacent to Old Tampa Bay and are within the area of the Old Tampa Bay Water Quality Improvement Project. This project was undertaken by SWFWMD and FDOT District 7 to improve circulation within the Bay and provide nutrient reduction. As phases of the project have been completed, nutrient mitigation credits have been released for use by the Department and are documented within a ledger available through SWFWMD Sufficient credits are available and will be used in lieu of traditional stormwater management facilities for Basins 3 and 4.

For more information including descriptions of each basin and pond site alternative, as well as information about the Old Tampa Bay Water Quality Improvement Project, please refer to the Pond Siting Report. The recommended preferred alternatives are listed in **Table 2-3** below.

Table 2-3 Recommended Pond Alternatives

Basin	Preferred Stormwater Management Alternative
Basin 1	Pond 1 (Existing Pond 1100-A1)
Basin 2	Pond 2B
Basin 3	Old Tampa Bay Water Quality Improvement Credits
Basin 4	Old Tampa Bay Water Quality Improvement Credits

SECTION 3 – PROTECTED SPECIES AND HABITAT

Ecologists used online resources and multiple field surveys to determine whether protected species occur or have the potential to occur in the Gandy Boulevard study area. The term protected species refers to those species that are protected by law, regulation, or rule. Specifically, the term protected species refers to those species listed under the Endangered Species Act (ESA) of 1973, as amended; those species listed under Florida's Endangered and Threatened Species List, Chapter 68A-27, FAC; or those species listed under the Preservation of Native Flora of Florida, Chapter 5B-40, FAC.

3.1 Efficient Transportation Decision Making

During the ETDM process, Planning and Programming Screens were prepared for the Gandy study area. Environmental Technical Advisory Team (ETAT) representatives reviewed project information and provided comments about potential direct and indirect effects to resources under their jurisdiction. The primary issues discussed within the ETDM Summary Report were the potential loss or adverse impacts to tidal flat, mangrove, or seagrass habitat resulting from project works; potential for injury to manatees, sea turtles, and other aquatic life during in-water construction operations; potential adverse effects to listed species; and potential for water quality impacts during construction. In order to minimize the effect of the project on protected species, FDOT will provide commitments that will be tracked through the design process. In addition, the FDOT will coordinate with FWC, USFWS, and NMFS in order to obtain concurrence with the effect determinations listed below. Although some design information is unknown at this time, the FDOT commits to completing any needed Section 7 consultation with NMFS during design once final impacts associated with the bridge construction, including the driving of piles, is finalized.

3.2 Data Collection and Field Surveys

A total of 36 protected species, including state-listed, federally-listed, and other protected species, have potential to occur in the Gandy Bridge study area. Data collection included but was not limited to:

- Florida Natural Areas Inventory (FNAI) Cooperative Land Cover Maps (https://www.fnai.org/services/coop-land-cover)
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) Maps (https://www.fws.gov/wetlands/data/mapper.html)
- USFWS Consultation Area and Critical Habitats Maps (https://crithab.fws.gov/)
- USFWS Wood Stork Nesting Colonies and Core Foraging Areas Maps
- USFWS IPaC Information for Planning and Consultation (https://ecos.fws.gov/ipac)
- National Marine Fisheries Service (NMFS) Essential Fish Habitat (EFH) Maps (https://www.habitat.noaa.gov/protection/efh/habitatmapper.html)

- Audubon Florida EagleWatch Nest Website (https://cbop.audubon.org/conservation/about-eaglewatch-program)
- FWC Wildlife Occurrence Maps (http://geodata.myfwc.com/datasets)
- FWC ShoreMapper for IBNB (https://gis.myfwc.com/shoremapper/)
- FWC Species Action Plans (http://myfwc.com/wildlifehabitats/imperiled/species-action-plans/)
- FDOT Efficient Transportation Decision Making (ETDM) Summary Report #14335 (https://etdmpub.fla-etat.org/est/#)

Of the 36 species with the potential to occur in the study area, 14 are avian, 2 are mammal, 7 are reptile, 2 are fish, and 11 are plant species, and these are shown on **Table 3-1**. Ecologists determined a species' potential occurrence in the study area based on habitat preferences and distributions, existing site conditions, historical data, and multiple field surveys. Listed species occurrences within the study area are shown on **Figure 3-1**.

Ecologists familiar with Florida's protected species and natural habitats conducted pedestrian surveys during daylight hours on November 18, 2020 and March 31, 2022 to document the presence or evidence of protected species utilizing the study area. The ecologists also documented habitat types and predominant plant species, including general wetland limits, during the field reviews. No species-specific surveys were completed. Wildlife observed during the field surveys included laughing gull, great blue heron, double-crested cormorant, royal tern, osprey, brown pelican, loggerhead shrike, least sandpiper, sanderling, snowy plover, and marbled godwit, as well as the species marked observed on **Table 3-1**.

Figure 3-1: Protected Species Map

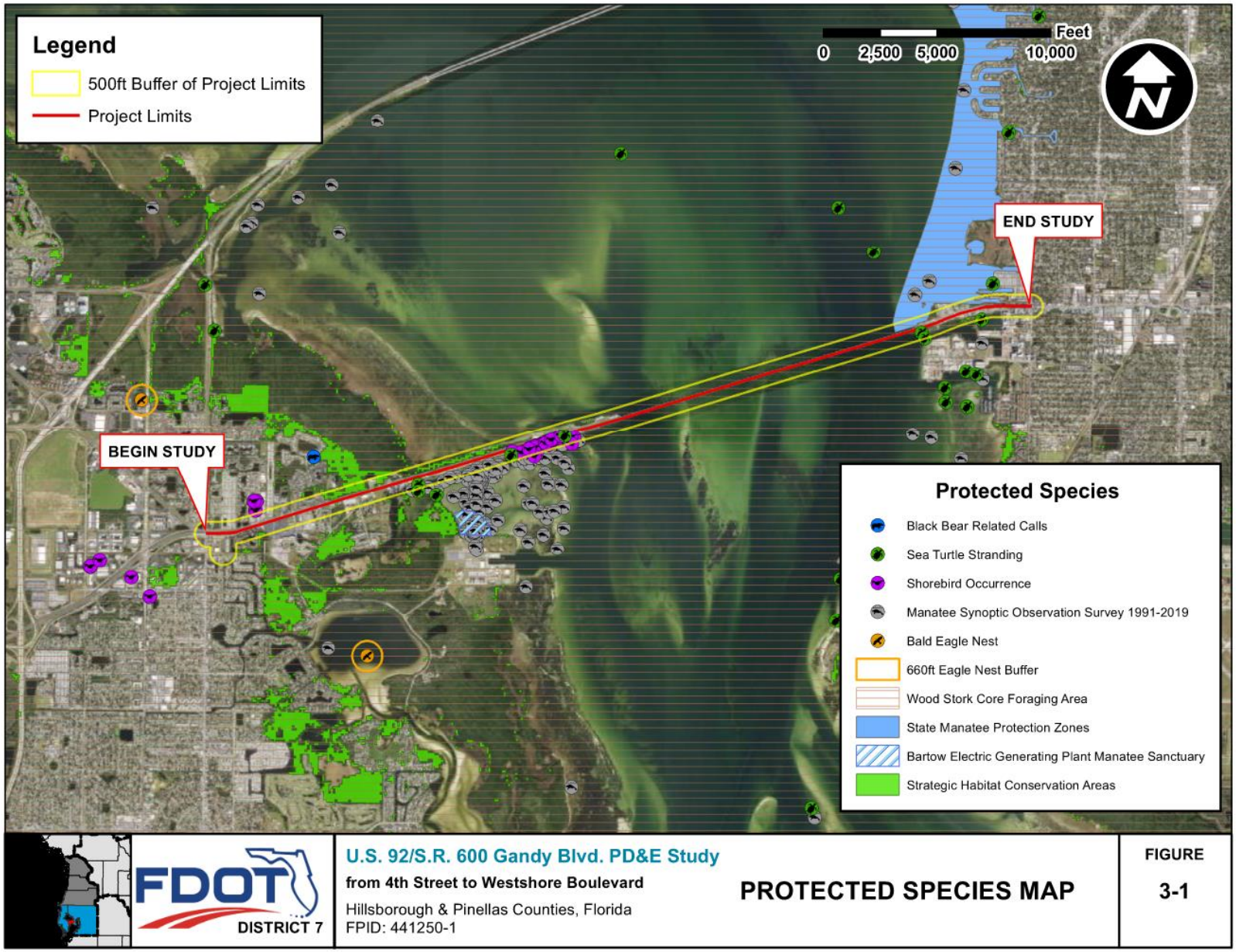


Table 3-1 – Protected Species with Potential to Occur in the Study Area

GROUP	SCIENTIFIC NAME	COMMON NAME	LISTING STATUS[1]		POTENTIAL OCCURRENCE
			FEDERAL	STATE	
Avian	*Athene cuniclaria floridana*	Florida burrowing owl		T	Low
	Calidris canutus rufa	Red knot	T		Moderate
	Charadrius melodus	Piping plover	T		Moderate
	Charadrius nivosus	Snowy plover		T	Moderate
	Egretta caerulea	Little blue heron		T	Observed
	Egretta rufescens	Reddish egret		T	High
	Egretta tricolor	Tricolored heron		T	High
	Haliaeetus leucocephalus	Southern bald eagle	BGEMA		Observed
	Haematopus palliatus	American oystercatcher		T	High
	Laterallus jamaicensis	Eastern black rail	T		Low
	Mycteria americana	Wood stork	T		Observed
	Pandion haliaetus	Osprey	MBTA		Observed
	Platalea ajaja	Roseate spoonbill		T	High
	Rychops niger	Black skimmer		T	High
	Sternula antillarum	Least tern		T	Observed
Mammal	*Perimyotis subflavus*	Tricolored bat	C		Low
	Trichechus manatus	West Indian manatee			High
	Ursus americanus floridanus	Florida black bear		M	Low
Reptile	*Crocodylus actus*	American crocodile	T		Low
	Caretta	Loggerhead turtle	T		High
	Chelonia mydas	Green turtle	E		High
	Drymarchon couperi	Eastern indigo snake	T		Low
	Lepidochelys kempii	Kemp's Ridley turtle	E		High
	Gopherus polyphemus	Gopher tortoise		T	Low
Fish	*Acipenser oxyrinchus desotoi*	Gulf sturgeon	T		Low
	Manta birostris	Giant manta ray	T		Moderate
	Pristis pectinata	Smalltooth sawfish	E		Moderate
Plants	*Bonamia gradiflora*	Florida bonamia	T		Low
	Calopogon multiflorus	Many-flowered grass-pink		T	Low
	Campanula robinsiae	Brooksville bellflower	E		Moderate
	Centrosema Arenicola	Sand butterfly pea		E	Low
	Chionanthus pygmaeus	Pygmy fringe-tree	E		Low

	Chrysopsis floridana	Florida golden aster	E		Low
	Lechea cernua	Nodding pinweed		T	Low
	Linum carteri var. smallii	Small's flax		E	Moderate
	Nemastylis floridana	Celestial lily		E	Low
	Nolina atopocarpa	Florida beargrass		T	Low
	Pteroglossaspis ecristata	Giant orchid		T	Low

BGEMA = Bald and Golden Eagle Protection Act
E = Endangered
M = Managed
MBTA = Migratory Bird Treaty Act
T = Threatened

USFWS = United States Fish and Wildlife Service
FWC = Florida Fish and Wildlife Conservation Commission

1 = FWC listing status was not included for species with the same federal listing status due to the State's deferment of federal status under Chapter 68A-27, FAC.

Low - A low rating indicates that the species occurs in Pinellas or Hillsborough County, but suitable habitat is not present within the study area and the species has not been observed or documented within the study area.

Moderate - A moderate rating indicates that the species occurs in Pinellas or Hillsborough County, suboptimal habitat or limited suitable habitat occurs within the study area, but the species has not been observed in species-specific surveys or documented within the study area.

High - A high rating indicates that the species occurs within Pinellas or Hillsborough County, suitable habitat is present within the study area and the species is suspected to occur or has been previously documented within the study area.

Observed species are those that have been observed during the evaluation for this PD&E Study.

3.3 Federally Listed Species and Designated Critical Habitat

The study area is located within the USFWS consultation area (CA) of the piping plover and West Indian manatee. A consultation area is intended to identify the geographical landscape where each federally listed species is most likely to occur. The study area also falls within three woodstork Core Foraging Areas (CFA), which includes suitable foraging areas important to the reproductive success of a known wood stork nesting colony. The existing habitats in the study area may also support other federally listed and ESA candidate species including the American crocodile, eastern indigo snake, giant manta ray, Gulf sturgeon, smalltooth sawfish, tricolored bat, red knot, eastern black rail, and sea turtles. Four federally listed plant species have potential to occur within the study area, including the Brooksville bellflower, Florida bonamia, Florida golden aster, and pygmy fringe-tree.

3.3.1 Critical Habitat

Per the ESA, USFWS, and NMFS are directed to identify and designate critical habitat for federally protected and/or managed species (50 CFR Part 17; 50 CFR Parts 222 – 226) at the time of listing. There are no critical habitats designated for any species within the study area.

3.3.2 American Crocodile

The American crocodile is federally listed as threatened. It is one of two species of crocodilians in the United States; the other is the American alligator. The crocodile is distinguished from the alligator by its head shape and color. The crocodile's snout is narrower than the alligator's, and its lower teeth are visible when its mouth is shut. The crocodile is a brownish color whereas the alligator is a blackish color. The crocodile typically inhabits brackish or saltwater habitats, such as ponds, creeks, and coves within mangrove swamps. They are occasionally found inland in freshwater habitats, typically due to South Florida's canal system. Its nesting habitat includes sandy shorelines, raised marl creek banks next to deep water, and even man-made structures such as canal berms. The USFWS identified critical habitat for the crocodile in extreme south Florida, well outside the project area.

Tampa Bay is the northern most range for the crocodile on the west coast of Florida. Suitable habitat for the crocodile was observed within the study area, including mangrove swamps. No crocodiles were observed during the field survey. While the project will impact suitable crocodile habitat, such as mangrove swamps, the extent of impacts relative to habitat within the corridor will be minimal. In addition, the standard in-water work conditions for other species should also minimize impacts to the crocodile. Therefore, the proposed project "**may affect, but is not likely to adversely affect**" the American crocodile.

3.3.3 Eastern Black Rail

The eastern black rail is federally listed as threatened due to habitat loss, destruction, and modification; sea level rise and tidal flooding, and incompatible land management. They are wetland-dependent birds and are primarily associated with herbaceous, persistent emergent plant cover (USFWS, 2019). They require dense overhead perennial herbaceous cover with underlying

moist to saturated soils with or adjacent to very shallow water (Flores, and Eddelman 1995; Legare and Eddleman 2001; Haverland 2019). No critical habitat has been designated.

No suitable habitat was observed for the eastern black rail during the field survey. The wetlands on the site do not consist of the marsh habitat required for this species. No individuals were observed during the survey, nor have been historically documented within the area according to FNAI. Due to the lack of suitable habitat and no documented occurrences within the project action area, the proposed project will have "**no effect**" on the eastern black rail.

3.3.4 Eastern Indigo Snake

The eastern indigo snake is federally listed as threatened due to over-collecting for the pet trade in addition to habitat loss and fragmentation (USFWS, 1999). The eastern indigo snake is widely distributed throughout central and south Florida. They occur in a broad range of habitats, from scrub and sandhill to wet prairies and mangrove swamps. Indigo snakes are most closely associated with habitats occupied by gopher tortoises whose burrows provide refugia from cold or desiccating conditions (USFWS, 1999). No critical habitat has been designated for the eastern indigo snake.

There is minimal habitat for the indigo snake throughout the developed portions of the study area, including proposed Pond 2B site. Staff did not observe any indigo snakes, gopher tortoises, or gopher tortoise burrows within the study area during the field reviews. A 100% gopher tortoise survey will be required before construction activities commence. To address any potential effects to the eastern indigo snake, any potentially occupied gopher tortoise burrows within the limits of construction will be excavated and the *Standard Protection Measures for the Indigo Snake* (USFWS, 2021; **Appendix D**) will be implemented during construction activities. All gopher tortoise burrows, active or inactive, will be evacuated prior to site manipulation in the vicinity of the burrow. If a burrow excavation is utilized, it will be performed by experienced personnel. The method used will minimize the potential for injury of an indigo snake. The FDOT will follow the excavation guidance provided within the FWC's Gopher Tortoise Permitting Guidelines. As a result, the proposed alternatives "**may affect, but are not likely to adversely affect**" the eastern indigo snake. This effect determination was made using the following sequence from the *Eastern Indigo Snake Effect Determination Key* (**Appendix E**): A>B>C>D>E.

3.3.5 Giant Manta Ray

The giant manta ray is the largest species of ray that can reach up to 29 feet in wingspan. This ray was listed as federally threatened in 2018. This species is slow-growing and migratory, with populations distributed throughout the globe. They are typically found in tropical, subtropical, and temperate areas, but also have been observed in estuaries, inlets, and bays. The main threat to the giant manta ray is commercial fishing and a low fecundity which can lead to a significant decline in populations.

The proposed project will impact the water column, substrate, and mangrove habitat within Tampa Bay for the installation of piles inside and outside of the existing bridges for the proposed bridge widening. FDOT will commit to use the "**NOAA SERO Protected Species Construction Conditions**" (**Appendix G**) during construction, as well as coordinate with NMFS on potential

impacts associated with pile-driving activities and nighttime work. These commitments coupled with the unlikelihood of the species presence within the project area, the proposed project "**may affect, but is not likely to adversely affect**" the giant manta ray.

3.3.6 Gulf Sturgeon

The Gulf sturgeon is a sub-species of Atlantic sturgeon and is federally listed as threatened due to overfishing, dam construction, and habitat degradation. These large fish spawn and hatch in freshwater and migrate to saltwater for most of their lives, before returning to the freshwater to spawn again. Although primarily located in the northern end of the Gulf, sturgeons have been reported along the west coast of Florida.

In order to avoid potential impacts to Gulf sturgeon, the FDOT will use the **"Construction Special Conditions for the Protection of the Gulf Sturgeon"** (**Appendix F**) during construction. Due to the unlikelihood of the species presence within the project area and the protection measures during construction, the project "**may affect, but is not likely to adversely affect**" the Gulf sturgeon.

3.3.7 Green Sea Turtle

Green sea turtles are among the largest hard-shelled sea turtles with a worldwide distribution in tropical and subtropical waters. They are typically observed in fairly shallow waters (except when migrating) inside reefs, bays, and inlets with an abundance of seagrasses and algae. Open beaches with a sloping platform are required for nesting, and green sea turtles exhibit strong site fidelity.

The project will not impact sea turtle nesting habitat, and any sea turtles observed in the construction area will be transient. FDOT will implement the use of the "**NOAA SERO Protected Species Construction Conditions**" as well as coordinate with NMFS on potential impacts associated with in-water work. Therefore, the project "**may affect, but is not likely to adversely affect**" green sea turtles.

3.3.8 Kemp's Ridley Sea Turtle

Kemp's ridley sea turtles are one of the smallest and the most endangered of the sea turtles. This species is distributed along the Gulf of Mexico, and the western coast of the Atlantic Ocean up to Nova Scotia and Newfoundland. They frequent nearshore and inshore waters that contain muddy or sandy bottoms. Nesting is mostly limited to beaches of the western Gulf of Mexico, especially Tamaulipas and Veracruz, Mexico. Nesting also occurs regularly in Texas, and infrequently in a few other states, including Florida.

The project will not impact sea turtle nesting habitat, and any sea turtles observed in the construction area will be transient. FDOT will implement the use of the "**NOAA SERO Protected Species Construction Conditions**" as well as coordinate with NMFS on potential impacts associated in-water work. Therefore, the project "**may affect, but is not likely to adversely affect**" Kemp's Ridley sea turtles.

3.3.9 Loggerhead Sea Turtle

Loggerhead sea turtles are distributed throughout temperate and tropical regions of the Atlantic, Pacific, and Indian Oceans. They may be found hundreds of miles out to sea, as well as inshore areas such as bays, lagoons, salt marshes, creeks, ship channels, and mouths of large rivers. Feeding areas include coral reefs, rocky outcroppings, and shipwrecks. Nesting occurs mainly on open beaches or along narrow bays having suitable sands, and often in association with other sea turtles.

The project will not impact sea turtle nesting habitat, and any sea turtles observed in the construction area will be transient. FDOT will implement the use of the "**NOAA SERO Protected Species Construction Conditions**" as well as coordinate with NMFS on potential impacts associated with in-water work. Therefore, the project "**may affect, but is not likely to adversely affect**" loggerhead sea turtles.

3.3.10 Red Knot

The red knot is a medium size shorebird which has one of the longest distance migrations in the animal kingdom, more than 9,300 miles round-trip. This species breeds as far north as the central Canadian Arctic and migrates as far south as the southern tip of South America. Populations were once decimated by commercial hunting for sport and food in the 1800s, and subsequently recovered after the 1918 Migratory Bird Treaty Act. Populations decreased once again in the 1980s due to overharvesting of horseshoe crabs (a main food source for red knots) and coastal development.

This species is often seen during spring (April-May) and fall (September-October) migration routes to forage, and small populations have been known to utilize Florida coasts to winter. Habitats used by red knots include sandy beaches, tidal mudflats, saltmarshes, brackish lagoons or impoundments, and mangroves. Feeding typically occurs on beaches and mudflats. Typical food sources include invertebrates, crustaceans, marine worms, and horseshoe crabs.

A small amount of red knot foraging habitat will be impacted by the proposed project within Segment 1. The impacts to sandy areas are adjacent to the existing ROW and typically within areas used for parking to access the beach which is suboptimal foraging habitat. The red knot was not observed during the multiple field surveys. The project will impact some sandy areas within a highly utilized area of the beach, but sandy habitat will remain in the area in post construction. In addition, the extent of impacts relative to habitat within the corridor will be minimal. Therefore, this project **"may affect, not likely to adversely affect"** the red knot.

3.3.11 Piping Plover

The piping plover is a small shorebird that utilizes sandy beaches, sandflats or mudflats with little or no vegetation for foraging. The piping plover does not nest in Florida; however, the birds utilize habitat along the coast of Florida for wintering. The project is located within the CA for the piping plover. No critical habitat for the piping plover has been identified in Florida.

The impacts to sandy areas are adjacent to the existing ROW and typically within areas used for parking to access the beach. While the project will impact some plover habitat, the area of impact is within a highly utilized area of the beach and is suboptimal, and sandy habitat will remain in the area post-construction. In addition, the extent of impacts relative to habitat within the corridor will be minimal. Therefore, this project **"may affect, not likely to adversely affect"** the piping plover.

3.3.12 Smalltooth Sawfish

The smalltooth sawfish was historically prevalent in Florida and commonly encountered from Texas to North Carolina; however, today the sawfish is only found with regularity in south Florida between the Caloosahatchee River and the Florida Keys. The sawfish primarily occurs in estuarine and coastal habitats such as bays, lagoons, estuaries, and rivers. Juvenile sawfish use shallow habitats with an abundance of vegetation, especially mangrove forests. This project is not within the designated critical habitat for the smalltooth sawfish.

The proposed project will impact the water column, substrate, and mangrove habitat within Tampa Bay for the installation of piles inside and outside of the existing bridges for the proposed bridge widening. FDOT will commit to use the "**NOAA SERO Protected Species Construction Conditions**" (**Appendix G**) during construction, as well as coordinate with NMFS on potential impacts associated with in-water work. These commitments coupled with the unlikelihood of the species presence within the project area, the proposed project "**may affect, but is not likely to adversely affect**" the smalltooth sawfish.

3.3.13 Tricolored Bat

The tricolored bat is a candidate species for federal listing. It is one of the smallest bats that is native to North America and has a range throughout the eastern and central portions of the U.S., along with portions of Canada, Mexico, and Central America. Habitat for the tricolored bat in Florida consists of foraging areas and roosting sites, including artificial structures. Roosting typically occurs in small groups and occurs in tree foliage and cavities, as well as other man-made structures such as culverts or buildings. The maternity season in Florida is May - June. Foraging occurs most commonly over waterways and at the edge of forested systems.

Due to development and limited natural forested areas occurring within the study area, minimal suitable habitat was observed within the study area. However, there are bridge structures which may provide roosting habitat for the tricolored bat. Ecologists did not observe bats or signs of roosting during the field surveys. Pre-construction surveys will be conducted to confirm the absence of bats within the bridge structures that will be impacted.

3.3.14 West Indian Manatee

The West Indian manatee is a large, aquatic mammal distributed from the southern United States through the Caribbean Islands, Central America, and to northern South America. In the United States, the Florida manatee (a sub-species of the West Indian manatee) inhabits Florida's coastal waters, rivers and springs where they graze on seagrasses and other aquatic plants. The manatee

is federally listed as threatened due to habitat loss, degradation, and fragmentation; watercraft collisions; loss of winter warm-water habitat; and poaching.

The project is located within the USFWS CA for the manatee, however the project is not located within critical habitat. There are two protected zones located within the Study Area (**Figure 3-1**). The Bartow Electric Generating Plant Manatee Sanctuary is a seasonally no-entry zone located to the south of Segment 1 adjacent to Wheedon Island. The second is a designated Slow Speed Zone adjacent to the east side of Segment 2 and spans from the Gandy Bridge north to the Howard Franklin Bridge. These protection areas will not be impacted by the proposed project. The Bartow Plant is located outside of the construction zone and no in-water work will occur in or adjacent to this area. The Slow Speed designated zone is adjacent to the bridge area, however the **"Standard Manatee Conditions for In-Water Work"** (**Appendix H**) will be implemented, and these guidelines will be utilized when the project is constructed. Blasting during construction or demolition is not anticipated; however, should the use of explosives for any portion of the project be proposed during design, a project-specific Blast and Marine Wildlife Watch Plan will be developed. In addition, it is not anticipated that there will be culverts proposed for this project which would require grating to protect manatees. In-water work will only be conducted from official sunrise until official sunset times. If nighttime in-water work is necessitated, the FDOT will reinitiate ESA Section 7 consultation with the USFWS to identify appropriate conservation measures and receive the necessary authorizations prior to commencement of nighttime in-water work.

According to the determination key, this project "**may affect, but is not likely to adversely affect**" the West Indian manatee. This effect determination was made following the sequence from the *Effect Determination Key for the Manatee in Florida* (April 2013, **Appendix I**): A > B > C > G > N > O > P.

3.3.15 Wood Stork

Wood storks are associated with freshwater and estuarine wetlands that are used for nesting, roosting, and foraging. Nesting typically occurs in medium to tall trees that occur in stands located in swamps or islands surrounded by open water (Odgen, 1991; Rodgers et al. 1996). Preferred foraging habitat includes wetlands with a mosaic of submerged and/or emergent aquatic vegetation, and shallow open-water areas. Particularly attractive feeding sites are depressions in marshes or swamps where fish become concentrated during periods of receding water levels. No critical habitat has been designated for the wood stork.

According to the USFWS, the habitats within 15 miles of a wood stork breeding colony are considered to be wood stork CFAs. The study area falls within the CFA of six wood stork breeding colonies, "Alligator Lake", "East Lake – Bellows Lake", "Ferman Corporation", "Lake Forest", "Northlakes - Sagebrush", and "Sheldon Rd – Citrus Park". No active colony sites are within 2,500 feet of the project action area. Wood stork CFAs are shown in **Figure 3-1**.

Ecologists observed Suitable Foraging Habitat (SFH) along the study area including mangrove estuary ponds and existing stormwater ponds. One individual was observed flying over Segment 3 of the project area. There will be approximately 1.0 acres of SFH impacted by the construction

of this project. According to the *Wood Stork Effect Determination Key for Central and North Peninsular Florida* (USFWS, 2008) (**Appendix J**), the proposed project "**may affect, but is not likely to adversely affect"** the wood stork. This effect determination was made using the following sequence from the key: A>B>C>D>E. The FDOT will provide SFH compensation within the Service Area of a Service-approved wetland mitigation bank or wood stork conservation bank within the CFA that provides an amount of habitat and foraging function equivalent to that of impacted SFH in accordance with the Service's Habitat Management Guidelines for the Wood Stork in the Southeast Region and the CWA section 404(b)(1) guidelines.

3.3.16 Federally Listed Plants

According to FNAI and USFWS, four federally listed plant species have potential to occur within the study area, including the Brooksville bellflower, Florida bonamia, Florida golden aster, and pygmy fringe-tree. The existing condition of the project site does not contain the appropriate habitat to support these species. Florida bonamia, Florida golden aster, and pygmy fringe-tree are restricted to sandy habitats maintained by periodic fire, such as scrub, high pine, and sandhill. Habitat for the Brooksville bellflower includes wet prairies or seepage areas adjacent to hardwood hammocks. No federally listed plant species were observed during the field review. Due to the lack of habitat, site development, and previous land disturbance adjacent to the road, the proposed project will have **"no effect"** on federally listed plants.

3.4 State Listed Species

3.4.1 American Oystercatcher

The American oystercatcher is an easily distinguished shorebird species with a long, bright reddish-orange bill. They are distributed from coasts of the northeastern United States down to Florida's Gulf Coast, as well as the Caribbean and Central America. Florida has a resident breeding population as well as a large wintering population of oystercatchers. Nesting typically begins in March and can extend through August. They inhabit beaches, sandbars, spoil islands, shell rakes, salt marsh, and oyster reefs. The American oystercatcher is one of a few bird species that feeds primarily on mollusks, although they will also eat jellyfish, worms, and insects.

The project area does provide some suitable habitat, but it does not support large or readily accessible oyster reefs. In addition, the area of impact is within a highly utilized area of the beach and is suboptimal habitat. According to the FWC's ShoreMapper for imperiled beach-nesting birds, the project is not within a recent breeding site, critical brood-rearing site, or a critical roosting site for American oystercatcher. To reduce American oystercatcher nesting potential within the project action area during construction, the FDOT will avoid leaving cleared and/or filled areas for an extended period of time. If any American oystercatcher nests or flightless young are sighted on the project, the FDOT will re-initiate coordination with the FWC to determine appropriate conservation measures. Therefore, the project "**no adverse effect anticipated**" American oystercatchers.

3.4.2 Black Skimmer

The black skimmer is listed as threatened due to habitat loss. The black skimmer is a seabird with a large red and black bill. They are distributed from coasts of the northeastern United States down to Florida's Gulf Coast, and to Mexico. Black skimmers inhabit coastal areas in Florida, such as estuaries, beaches, and sandbars. Nesting occurs in colonies from one to several hundred pairs, on beaches, sandbars, and islands developed by dredged material. Nesting can also occur on gravel rooftops. The nesting season for the black skimmer typically occurs between May and early September.

According to the FWC's ShoreMapper for imperiled beach-nesting birds, the project is not within a recent breeding site, critical brood-rearing site, or a critical roosting site for black skimmers. The impacts to sandy areas are adjacent to the existing ROW and typically within areas used for parking to access the beach which is suboptimal nesting habitat due to frequent disturbance. Black skimmers were not observed during the multiple field surveys. While the project will impact some habitat, the area of impact is within a highly utilized area of the beach and is suboptimal, and sandy habitat will remain in the area in post construction. In addition, the extent of impacts relative to habitat within the corridor will be minimal cleared areas and fill. To reduce black skimmer nesting potential within the project action area during construction, the FDOT will avoid leaving cleared and/or filled areas for an extended period of time. If any black skimmer nests or flightless young are sighted on the project, the FDOT will re-initiate coordination with the FWC to determine appropriate conservation measures. Therefore, the project "no adverse effect anticipated" on black skimmers.

3.4.3 Florida Burrowing Owl

The Florida burrowing owl is listed by the FWC as threatened due to loss of native habitat, dependence on altered habitat, and lack of regulatory protections (FWC,2013a). The burrowing owl is a non- migratory, year-round breeding resident of Florida, and maintains home ranges and territories while nesting. Burrowing owls inhabit upland areas that are sparsely vegetated. Natural habitats include dry prairie and sandhill, but they will make use of ruderal areas such as pastures, golf courses, parks, and road rights-of-way because much of their native habitat has been altered or converted to other uses.

Due to development and limited natural areas occurring within the study area, minimal suitable habitat was observed within the study area. However, the open land within proposed Pond 2B may provide suitable habitat for the burrowing owl. Ecologists did not observe burrowing owls or their burrows during the field surveys. Burrowing owls usually dig their own burrows but are known to utilize gopher tortoise and armadillo burrows. Pre-construction surveys will be conducted to adhere to the components of the Imperiled Species Management Plan (ISMP) and the *Conservation and Permitting Guidelines for the Florida Burrowing Owl* (FWC, 2018a); therefore, there is "**no adverse effect anticipated**" for the burrowing owl as a result of the proposed project. If burrowing owls are observed onsite, the FDOT will re-initiate coordination with the FWC to determine appropriate conservation measures.

3.4.4 Least Tern

The least tern is listed as threatened by FWC and is the smallest tern in North America. They are distributed along the Atlantic Coast of the United States, mid-Atlantic states, and down from Mexico to northern Argentina. They inhabit areas along the coasts of Florida, including estuaries and bays. Nesting occurs in colonies from one to several hundred pairs and may often be collocated with other seabirds like black skimmers. Nesting can occur in freshly disturbed areas that have had the removal of beach material, dumping of dredge sand, or clearing and scraping existing sand. Least terns also can nest in areas of gravel. Least terns typically nest between the middle of April and the beginning of May.

According to the FWC's ShoreMapper for imperiled beach-nesting birds, the project is not within a recent breeding site, critical brood-rearing site, or a critical roosting site for least tern. The impacts to sandy areas and gravel areas are adjacent to the existing ROW and typically within areas frequently used for parking to access the beach which is suboptimal nesting habitat due to frequent disturbance. During the field reviews, ecologists observed least terns within the beach area in Segment 1. The birds were frequently flushed by people walking and cars driving within this area. Clearing associated with construction may create conditions conducive for beach-nesting birds. Pre-construction surveys will be conducted to adhere to the components of the "Imperiled Beach-Nesting Birds Species Conservation Measures and Permitting Guidelines" (FWC, 2022). If any least tern nests or flightless young are sighted on the project, the FDOT will re-initiate coordination with the FWC to determine appropriate conservation measures. Therefore, the proposed project "**no adverse effect anticipated**" the least tern.

3.4.5 Snowy Plover

The snowy plover is a small shorebird that utilizes sandy beaches, sandflats or mudflats with little or no vegetation for foraging. The snowy plover is listed as threatened by FWC. Snowy plovers are solitary nesters, creating ground nests utilizing open sandy beaches along the Gulf Coast of Florida. Nesting season for the snowy plover generally occurs from February through August.

The impacts to sandy areas are adjacent to the existing ROW and typically within areas used for parking to access the beach. While the project will impact some plover habitat, the area of impact is within a highly utilized area of the beach and is suboptimal, and sandy habitat will remain in the area in post construction. In addition, the extent of impacts relative to habitat within the corridor will be minimal. To reduce snowy plover nesting potential within the project action area during construction, the FDOT will avoid leaving cleared and/or filled areas for an extended period of time. If any snowy plover nests or flightless young are sighted on the project, the FDOT will re-initiate coordination with the FWC to determine appropriate conservation measures. Therefore, this project will have **"no adverse effect anticipated"** on the snowy plover.

3.3.6 Gopher Tortoise

The gopher tortoise is listed as state-threatened. They occur in the southeastern Coastal Plain from Louisiana to South Carolina; the largest portion of the total population is located in Florida (FWC 2012). Gopher tortoises require well-drained, sandy soils for burrowing and nest construction, with a generally open canopy and an abundance of herbaceous groundcover, particularly broadleaf grasses, wiregrass (*Aristida stricta*), legumes and fruits for foraging. Gopher

tortoises can be found in most types of upland communities including disturbed areas and pastures.

There is minimal gopher tortoise habitat observed within the study area, with most of the habitat being located in the proposed pond site location for Pond 2B. No gopher tortoise burrows were observed during pedestrian surveys within the project area. A 100% gopher tortoise burrow survey will be conducted by FWC authorized agents prior to the start of the proposed project. If the proposed project cannot avoid impacts to the gopher tortoise burrows or habitats within 25-feet of the burrows, a gopher tortoise relocation permit will be needed from the FWC. The relocation permit authorizes the excavation of gopher tortoise burrows and relocation of inhabiting tortoises to an FWC-approved gopher tortoise recipient site. It also recommends that commensal species observed during the burrow excavation should be allowed to vacate the project area before construction activities start, per the FWC Gopher Tortoise Permitting Guidelines (2017). Based on the information above, the proposed project "**no adverse effect anticipated**" the gopher tortoise.

3.4.7 Wading Birds

Six wading birds have the potential to occur in the study area. These species are the little blue heron, reddish egret, roseate spoonbill, tricolored heron, snowy egret, and white ibis. The little blue heron, reddish egret, roseate spoonbill, and tricolored heron are listed by the FWC as threatened. The snowy egret, and white ibis are no longer listed in Florida, but are part of the Imperiled Species Management Plan. Little blue herons, snowy egrets, white ibis and tricolored herons are widely distributed throughout Florida. Reddish egrets and roseate spoonbills are found almost exclusively in coastal areas (Greenlaw, 2014). Wading birds depend on healthy wetlands and vegetated areas suitable for resting and breeding which are near foraging areas (FWC, 2013e). They forage in freshwater, brackish, and saltwater habitats. They tend to nest in multi-species colonies of a variety of woody vegetation types including cypress, willow, maple, black mangrove, and cabbage palm (FNAI, 2001).

Ecologists observed suitable foraging and nesting habitat for wading birds throughout the study area, and one little blue heron was observed during field reviews. No wading bird rookeries are documented within the project area. No nesting activity was observed during the field reviews. If evidence of active nesting is identified onsite prior to the start of construction activities, a buffer of 330 feet will be established around the nesting area. FDOT will adhere to the components of the ISMPs for wading birds; therefore, "**no adverse effect anticipated**" for wading birds resulting from the proposed project.

3.4.8 State Listed Plant Species

Through regulation by the FDACS Division of Plant Industry, Florida protects plant species native to the state that are endangered, threatened, or commercially exploited. The Florida Regulated Plant Index includes all plants listed as endangered, threatened, or commercially exploited as defined in Chapter 5B-40.0055, F.A.C. According to the FNAI and FDACS, 11 state protected plant species have the potential to occur in Hillsborough and Pinellas counties (**Table 3-1**). However,

the FNAI database listed no Elemental Occurrences of protected plants within the study area. Habitat for these state-listed plant species is limited within the study area, and particularly within the project action area. Ecologists did not observe state listed plants during the field surveys. Additional surveys for listed plant species will be conducted during design and permitting. **"No adverse effect is anticipated"** for state listed plant species resulting from the proposed project.

3.5 - Other Protected Species

3.5.1 Bald eagle

The bald eagle was removed from the ESA in 2007 and Florida's Endangered and Threatened Species list in 2008; however, it remains protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. Bald eagles prefer to nest in the tops of tall trees that provide unobstructed lines of sight to nearby habitats, particularly lakes and other open waters. Because eagles are piscivorous (fish-eating) raptors, nearly all eagles' nests occur within 1.8 miles of water (Wood et at., 1989). No critical habitat has been designated for the bald eagle.

According to the FWC's Eagle Nest locator and the Audubon Florida EagleWatch Nest website, there are no nests located within one mile of the study area. Within two miles of the project, there are three eagles' nests: HL077 (last known occupied in 2020) which is located to the east of the project; PI011 (last known occupied in 2016), which is located to the south of the western end of the project; and PI049 (last known occupied in 2016), which is located to the north of the western end of the project. One juvenile bald eagle was observed flying over Segment 3 of the project area. The proposed project will have no impact on the bald eagle since the proposed activities are well outside the 660-foot eagle nest protection buffer.

3.5.2 Florida Black Bear

The Florida black bear was removed from Florida's Endangered and Threatened Species list in 2012; however, it remains protected under Chapter 68A-4.009 F.A.C., Florida Black Bear Conservation Plan. The study area is located in the FWC South Central Bear Management Unit (BMU).

The black bear utilizes a large variety of habitats but prefer large contiguous forested tracts with mast-producing trees and berry producing shrubs. Forested areas are minimal within the study area and are bound by Tampa Bay and urban development. The most current FWC data for the Florida black bear was reviewed and documents one bear call (2019) within the study area (**Figure 3-1**). The proposed project will have no impact on the Florida black bear based on the lack of habitat and bear utilization within the project corridor due to the limited habitat.

3.5.3 Osprey

The osprey is federally protected by the Migratory Bird Treaty Act (16 U.S.C. 703-712) and state protected by Chapter 68A-16 FAC. Ospreys utilize riparian habitat associated with coastal areas, lake shorelines, and river banks. Nests are generally located near water bodies that provide a dependable food source. During field reviews, several ospreys and nests were observed within

the project study area. While nests were identified within the project area, they are not anticipated to interfere with construction of the proposed project. If nest removal is deemed necessary, FDOT will remove nests during the non-nesting season.

3.5.4 Strategic Habitat Conservation Areas

Strategic Habitat Conservation Areas (SHCA) are lands in need of protection to maintain natural communities and viable populations of many species that are indicators of the state's biological diversity. In 1994, FWC biologists completed a project entitled Closing the Gaps in Florida's Wildlife Habitat Conservation System (Cox et al 1994), which assessed the security of rare and imperiled species on existing conservation lands in Florida. This research identified important habitat areas in Florida with no conservation protection. This information was updated by FWC in 2009 to provide more accurate information on the areas. These SHCA serve as a foundation for conservation planning for species protection through habitat conservation. SHCA occur throughout the study area, however there were no comments in the ETDM report regarding particular concerns on wildlife habitat provided by these areas (**Figure 3-1**). No regulatory action is required for impacts to SHCA.

3.5.5 Aquatic Preserves and Outstanding Florida Waters

The portions of Tampa Bay within Pinellas County are a part of the Pinellas County Aquatic Preserve as established by the State of Florida, Board of Trustees through the Florida Aquatic Preserve Act of 1975, as amended. The Aquatic Preserves Act sought to offer protections to pristine aquatic habitat so that the biological and aesthetic condition could be protected and maintained. All Aquatic Preserves are automatically considered to be Outstanding Florida Waters (OFW). The areas within Weedon Island Preserve, including the Gateway Tract, are also listed as an OFW, per 62-302.700(9), F.A.C.

Special protection is given to OFWs under 62-302.700, F.A.C. Therefore, enhanced water quality treatment considerations will be necessary. These enhanced water quality considerations are discussed further in the Pond Siting Report and Water Quality Impact Evaluation prepared under separate cover for this Study. The project's stormwater management facilities will be designed in accordance with applicable state requirements and coordinated further with the SWFWMD during the project's future environmental permitting effort.

SECTION 4 – WETLANDS AND OTHER SURFACE WATERS

Ecologists performed a wetland evaluation within the study area. This wetland evaluation relied on literature reviews and field surveys to identify the location, extent, and functional value of wetlands within the study area; the potential direct, indirect, or cumulative effects of the project's actions to those wetlands; and available mitigation options to satisfy permit requirements from regulatory agencies. This wetland evaluation was conducted in accordance with the Presidential Executive Order 11990 ("Protection of Wetlands"); U.S. Department of Transportation Order 5660.1A ("Preservation of the Nation's Wetlands"); Federal Highway Administration Technical Advisory T6640.8A regarding the preparation of environmental documents; and *Wetlands and Other Surface Waters,* of the FDOT's PD&E Manual.

4.1 Efficient Transportation Decision Making

According to the ETDM Summary Report No. 14335, dated November 8, 2018, USACE, NMFS, EPA, Florida Department of Environmental Protection (FDEP), and SWFWMD indicated the project alternatives may create a "Moderate" DOE to wetlands and surface waters. The primary issues were the potential loss of wetlands function; loss of wildlife habitat; degradation of water quality in wetlands and surface waters; and reduction in flood storage and capacity. Other issues of concern included increased stormwater runoff and the increased pollutants into surface waters and wetlands as a result of the project and other point and nonpoint sources. Alternatively, USFWS indicated the project alternatives may create a "Minimal" DOE on wetlands and surface waters.

4.2 Wetland Delineation and Evaluation Methods

Ecologists familiar with Florida's natural plant communities performed an assessment of the study area to identify wetland vegetation, wetland hydrology, and hydrologic indicators to determine the presence of wetlands and other surface waters within the study area. A formal wetland delineation to determine jurisdictional boundaries was not performed; however, the general limits of wetlands and other surface waters were identified in the field using the criteria established in Rule 62-340, F.A.C. and the USACE's Wetland Delineation Manual (USACE, 1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (USACE, 2010). The wetland limits have not been reviewed by SWFWMD, FDEP, or USACE. Wetlands and surface waters were classified per the FLUCFCS (FDOT, 1999) and the Classification of Wetlands and Deepwater Habitat of the United States (NWI) (Cowardin et al. 1979). Ecologists used the Uniform Mitigation Assessment Method (UMAM), per Chapter 62-345, F.A.C., for the functional assessment of wetlands within the study area.

4.3 Wetland Habitats and Surface Waters

Nine wetlands and 18 other surface waters (OSWs) were identified within the study area (**Figure 4-1A – Figure 4-1B**). Forested wetlands within the study area consist of both estuarine and

non-estuarine wetlands. The surface waters consist of the waters of Tampa Bay, estuarine pools, and multiple stormwater ponds. The following section includes a brief description of each wetland type and other surface water within the study area. **Table 4-1** provides details identifying each wetland including the wetland number, FLUCFCS classification, and NWI classification. FLUCFCS classifications are based on the results of the field reviews of the study area. NWI classifications were not altered and are based upon the listed classification of the nearest NWI wetland system.

Table 4-1. Wetlands and Surface Waters in the Gandy Boulevard Study Area

Wetland ID	FLUCFCS	NWI Code
WL 1	630	PSS1Cx
WL 2	630	PFO3Ac
WL 3	612	E2SS3/EM1P
WL 4	612	E1UBL
WL 5	612	---
WL 6	612	E2FO3N
WL 7	612	E2FO3N
WL 8	612	E2FO3N
WL 9	630	---
SW 1	540	E1UBLx
SW 2	530	PUBHx
SW 3	530	PUBHx
SW 4	540	E1UBL
SW 5	540	E2SS3/EM1P
SW 6	530	---
SW 7	530	---
SW 8	530	PUBHx
SW 9	540	PFO3R
SW 10	540	E1UBL
SW 11	540	E1UBL
SW 12	530	PUBHx
SW 13	530	PUBHx
SW 14	530	PUBHx
SW 15	530	PUBHx
SW 16	530	PUBHx
SW 17	530	PUBHx
SW 18	530	PUBHx

Figure 4-1: Wetlands and Other Surface Waters Map

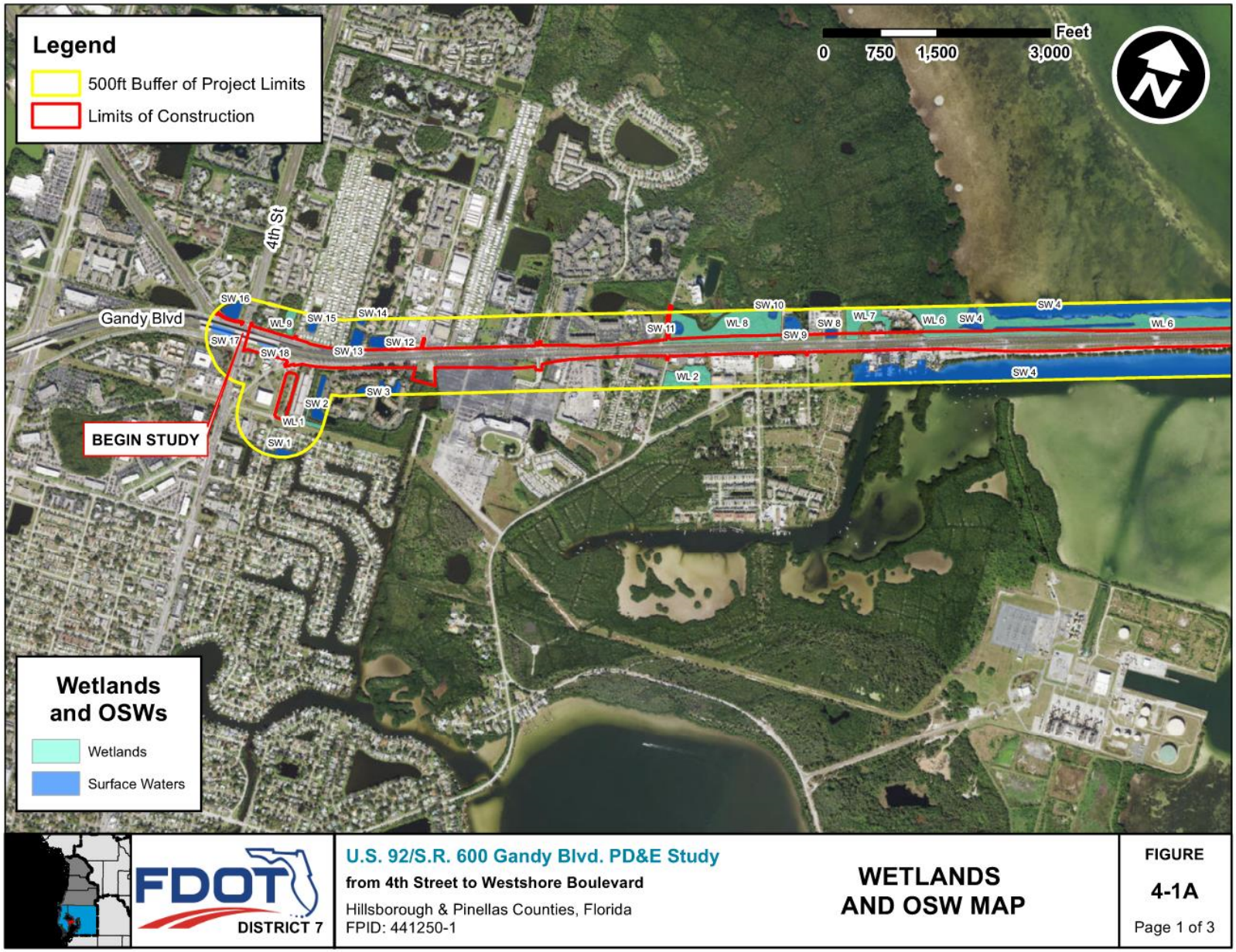
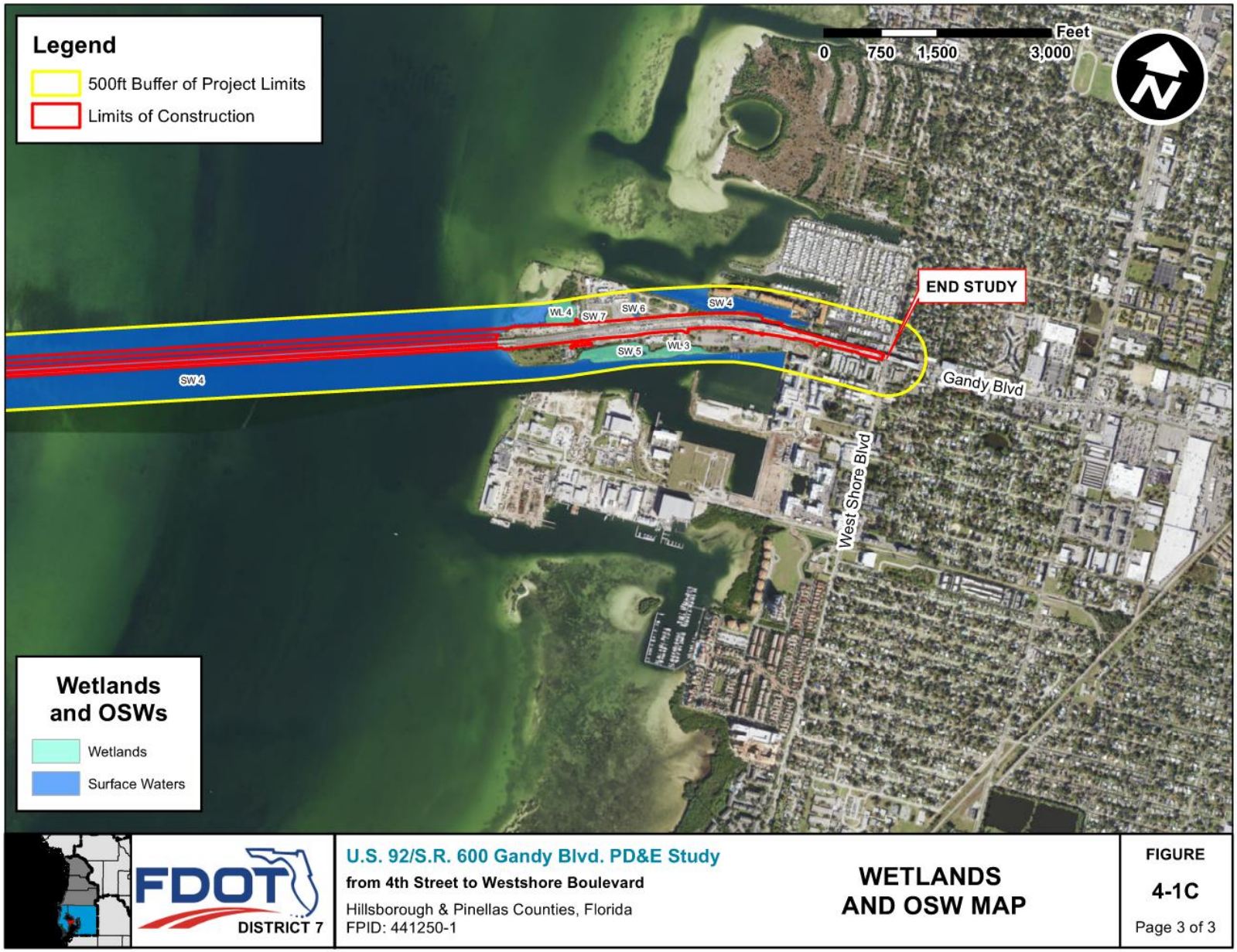


Figure 4-1: Wetlands and Other Surface Waters Map (Cont.)

Figure 4-1: Wetlands and Other Surface Waters Map (Cont.)



Mangrove Swamps

FLUCFCS: 612
NWI: E2SS3/EM1P, E1UBL, E2FO3N
Wetlands: WL 3, WL 4, WL 5, WL 6, WL 7, WL 8

Mangrove swamps are communities of coastal hardwoods dominated by mangroves. These areas are found on the eastern half of the project corridor on both the north and south sides of Gandy Boulevard. Species observed in these communities include red mangrove (*laguncularia mangle*), black mangrove (*Avicennia germinans*), white mangrove (*Laguncularia racemosa*), Brazilian pepper (*Schinus terebinthifolia*), cabbage palm (*Sabal palmetto*), sea grape (*Coccoloba uvifera*) and salt bush (*Baccharis halimifolia*).

Wetland Forested Mixed

FLUCFCS: 630
NWI: N/A
Wetlands: WL 1, WL 2, WL 9

Wetland forested mixed communities are wetland forests in which neither hardwoods nor conifers achieve a 66 percent dominance of the crown canopy composition. This type of forested wetland occurs near the western end of the project area, north of Gandy Boulevard. Species observed in these communities include Brazilian pepper, creeping oxeye (*Sphagneticola trilobata*), cabbage palm, sapling Chinese tallow (*Triadica sebifera*), and laurel oak.

Reservoirs

FLUCFCS: 530
NWI: PUBHx
Surface Waters: SW 2, SW 3, SW 6, SW 7, SW 8, SW 12, SW 13, SW 14, SW 15, SW 16, SW 17, SW 18

Reservoirs are artificial impoundments of water are used for irrigation, flood control, municipal and rural water supplies, recreation, and hydro-electric power generation. Within the study area, reservoirs are located west of Gandy Bridge near concentrated areas of urban and built-up land use. All reservoirs within the study area are less than 10 acres, permanently flooded, and excavated by humans.

Bays and Estuaries

FLUCFCS: 540
NWI: E1UBLx, E1UBL, E2SS3/EM1P, PFO3R
Surface Waters: SW 1, SW 4, SW 5, SW 9, SW 10, SW 11

Bays and estuaries are inlets or arms of the sea that extend into the land mass of Florida. The surface waters categorized as bays and estuaries within the study area are part of the Tampa Bay. These surface waters occur throughout the project corridor. SW 4 is the largest of the surface waters in the project corridor and spans the length of Gandy Bridge, occurring to the north, south, and directly underneath the bridge.

4.4 Wetland and Other Surface Water Impacts

The following subsection examines the proposed direct, indirect, and cumulative effects of the proposed project alternatives on wetlands and other surface waters. The No-Build Alternative will not result in direct or indirect impacts to wetlands or surface waters in the project area; however, this alternative is not consistent with existing long-range transportation plans for the roadway or region and does not meet the stated purpose and need for this Study. **Table 4-2** summarizes the proposed wetland and OSW impacts.

4.4.1 Direct

The Preferred Alternative will result in **6.71 acres** of direct impacts to wetlands and **1.11 acres** of direct impacts to other surface waters. (**Table 4-2**). Direct impacts were not assessed for the removal of the bridge or replacement bridge over Tampa Bay, as there will be no net loss of surface waters due to the replacement. The direct impacts will occur as a result of the widening of the road and installation of a multi-use path, impacting wetland systems located along the existing ROW for Gandy Blvd. Over Tampa Bay, the existing westbound bridge will be widened on both sides. In addition, a new bridge is proposed north of the existing westbound bridge. The Preferred Alternative does not currently include repair or replacement of the seawalls located at the bridge abutments.

4.4.2 Secondary

The project may create secondary impacts to wetlands. Adverse secondary impacts (indirect impacts) were calculated using a 25-ft buffer from direct wetland impacts. The Preferred Alternative will result in 4.02 acres of secondary impacts (**Table 4-2**).

Table 4-2 Proposed Wetland and Other Surface Water Impacts

Wetland ID	FLUCFCS	Description	Direct Impact (Acres)
WL 4	612	Mangrove Swamps	0.057
WL 6	612	Mangrove Swamps	3.849
WL 7	612	Mangrove Swamps	0.357
WL 8	612	Mangrove Swamps	2.441
SW 4	540	Bays and Estuaries	0.211
SW 6	510	Reservoirs	0.018
SW 7	510	Reservoirs	0.066
SW 8	510	Reservoirs	0.202
SW 9	540	Bays and Estuaries	0.150
SW 11	540	Bays and Estuaries	0.029
SW 16	510	Reservoirs	0.025
SW 18	510	Reservoirs	0.404

Total Impacts		
Direct Wetland Impacts	Secondary Wetland Impacts	Surface Water Impacts
6.71 (ac)	4.02 (ac)	1.11 (ac)

4.4.3 Cumulative

Cumulative impacts can result from incremental but collectively significant impacts within the basin over time. In order to provide reasonable assurances that the project will not cause unacceptable cumulative impacts, mitigation will be provided from within the same drainage basin as the anticipated impacts or the project will utilize a regional mitigation plan pursuant to Section 373.4137, Florida Statutes (FS).

4.5 Avoidance and Minimization

The avoidance and minimization of wetlands and protected species habitat impacts were considered throughout the PD&E Study and will continue to be evaluated during the design and permitting phases of the project. In accordance with Executive Order 11990 and U.S. DOT 5660.1A, and based on the documentation of existing wetland conditions as presented in this NRE, and in consideration of the proposed build alternatives and their effects on wetlands, it is hereby determined that:

There is no practicable alternative to construction in wetlands.

Measures have been taken to minimize harm to wetlands. Wetland impacts were primarily avoided and minimized by siting ponds in uplands with minimal habitat value and within the extent of current stormwater ponds. Similarly, the Preferred Alternative were developed to minimize wetland impacts by reducing the limits of construction to low quality and previously disturbed areas as much as possible. A parking lot was eliminated in order to reduce impacts to the mangroves within W4. In addition, the proposed project will not create any additional widening of the existing causeways to prevent further impacts to Tampa Bay and sensitive habitats such as seagrass beds. The proposed project will have no significant short-term or long-term adverse impacts to wetlands as all adverse impacts will be mitigated for using appropriate measures.

4.5 Wetland Assessment

The Uniformed Mitigation Assessment Method (UMAM) was used to determine the functional values provided by wetlands within the project area. The wetland assessment was conducted in accordance with the UMAM, as described in Chapter 62-345, FAC. The UMAM is the state-wide methodology for determining the functional value provided by wetlands and other surface waters and the amount of mitigation required to offset adverse impacts to those areas for regulatory permits. Other surface waters classified as upland cut ditches and permitted reservoirs were not included in the assessment as mitigation will not be required for impacts to these surface waters. The results of the UMAM assessment are provided in **Table 4-3.** These values may be refined during the design and permitting phases of the project. The UMAM summary table sheet for all wetlands and OSW located within the study area is provided as **Appendix K**.

Table 4-3 UMAM Summary Table

Wetland ID	Wetland Type	Impact Type	UMAM Delta	Impact Area (ac.)	Functional Loss
WL 4	Saltwater Forested	Direct	0.70	0.06	0.04
		Secondary	0.13	0.09	0.01
WL 6	Saltwater Forested	Direct	0.70	3.85	2.70
		Secondary	0.13	2.74	0.36
WL 7	Saltwater Forested	Direct	0.70	0.36	0.25
		Secondary	0.13	0.13	0.02
WL 8	Saltwater Forested	Direct	0.70	2.44	1.71
		Secondary	0.13	1.06	0.14
SW 4	Saltwater Estuarine	Direct	0.80	0.30	0.24
SW 9	Saltwater Estuarine	Direct	0.47	0.15	0.07
SW 11	Saltwater Estuarine	Direct	0.47	0.03	0.01
Total Direct Functional Loss					5.02
Total Secondary Functional Loss					0.53
Total Functional Loss					5.55

4.6 Mitigation

Although FDOT intends to avoid and minimize wetland impacts to the greatest extent practicable, unavoidable wetland impacts, including those to Essential Fish Habitat (EFH) as discussed in Section 5, will be offset to fulfill the requirements of 33 U.S.C. § 1344 and Part IV of Chapter 373, FS. FDOT will coordinate with the regulatory agencies during the design and permitting phases of the project to finalize appropriate mitigation.

The study area is located within the Tampa Bay Drainage Regulatory Basin. Currently, this basin has at least one mitigation bank (Tampa Bay Mitigation Bank) with credits available for both state and federal mitigation. In addition, the Old Tampa Bay Water Quality Improvement Project has available credits that may be used for mitigation for this project.

Mitigation will be required for any impacts to wood stork SFH greater than 0.5 acres based on guidance from the Effect Determination Key for the Wood Stork in Central and North Florida (USACE, 2008). Any unavoidable impacts to SFH may be compensated in accordance with the Section 404(b)(1) of the Clean Water Act via the purchase of wetland mitigation at a USFWS-approved wetland mitigation bank whose service area coincides with the core foraging area of the affected wood stork SFH.

SECTION 5 – ESSENTIAL FISH HABITAT ASSESSMENT

The National Marine Fisheries Service (NMFS) is the regulatory agency responsible for the nation's living marine resources and their habitats, including essential fish habitat (EFH). This authority is designated by the Magnuson-Stevens Fishery Conservation and Management Act (MSA), passed in 1976 and reauthorized in 2006. The MSA established eight Fishery Management Councils (FMC) across the country that are tasked with creating and amending Fishery Management Plans (FMP). The proposed project is located with the Gulf of Mexico FMC.

The MSA 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 which are used by fishes, and may include areas historically used by fishes, where appropriate; *substrate* refers to sediment, hardbottom, structures underlying waters, and any associated biological communities; *necessary* means the habitat required to support a sustainable fishery and a healthy ecosystem; and *spawning*, *breeding*, *feeding*, or *growth to maturity* includes all habitat types used by a species throughout its lifecycle. Section 303(a)(7) of the Magnuson-Stevens Act directs NMFS to describe and identify EFH; minimize adverse effects to EFH, to the greatest extent practicable; and identify actions to encourage the conservation and enhancement of EFH.

To determine the potential effect of this project on EFH and to aid the future consultation with NMFS, an EFH Assessment has been prepared in accordance with the Essential Fish Habitat chapter of the PD&E Manual (FDOT, 2020).

5.1 Efficient Transportation Decision Making

According to the ETDM Summary Report No. 14335, dated November 8, 2018, the NMFS and SWFWMD indicated the project alternatives may create a "Moderate" DOE to coastal and marine resources. NMFS designated some resources in Tampa Bay as EFH, according to the 2005 Generic Amendment to the FMP. Those resources included juvenile and sub-adult pink shrimp; juvenile, sub-adult, and adult red drum; juvenile goliath, yellowmouth, gag and scamp groupers; juvenile dog, yellowtail, cubera, mutton, lane, and schoolmaster snappers; and juvenile and adult gray snappers. They also noted that federally managed resources such as mangrove wetlands; seagrasses; estuarine water column; and mud, sand, shell, or rock substrate, may be impacted by this project. Coordination will continue throughout the PD&E Study and design/permitting phase of the project.

5.2 Essential Fish Habitat

5.2.1 Mangroves

Mangroves represent a major coastal wetland habitat of Florida. This habitat is comprised almost entirely of four plant species: red (*Rhizophora mangle*), black (*Avicennia germinans*), and white (*Laguncularia racemosa*) mangroves, and buttonwood (*Conocarpus erectus*). These species occur

singularly or in combination depending on tidal inundation and topography, where red mangroves inhabit the most tidally influenced, low-lying areas, and buttonwood occupies the least tidally influenced areas. Mangroves provide nursery, feeding, growth, and refuge, when flooded, for recreationally and commercially important fishery organisms (Thayer et al., 1987). Mangrove habitat composed of a mix of red, black, white, and buttonwood are located along the northern side of the project within Segment 1 and Segment 3 within the study area. The project proposes to impact 6.71 acres of mangrove habitat.

5.2.2 Seagrass

Seagrasses represent a major aquatic habitat of Florida. This habitat is comprised of seven species of submerged aquatic vascular plants: turtle (*Thalassia testudinum*), shoal (*Halodule wrightii*), manatee (*Syringodium filiforme*), widgeon (*Ruppia maritima*), star (*Halophila engelmannii*), and paddle (*H. decipiens*) grasses, and Johnson's seagrass (*H. johnsonii*). These species form biological assemblages known as meadows, which occur on unconsolidated sediments in a variety of physical settings leading to coverage ranging from patchy to continuous. Seagrasses are considered EFH because of four interrelated functions: (1) primary productivity, (2) structural complexity, (3) modification of energy regimes, and (4) nutrient cycling. These habitats provide nursery, feeding, growth, and refuge for recreationally and commercially important fishery organisms. According to the SWFWMD previously mapped seagrass layer (2020), patchy seagrass occurs throughout the project area, especially congregating in continuous seagrass areas along the eastern and western shoreline of Tampa Bay. The majority of the areas directly adjacent to the bridge are too deep to support seagrass beds.
A

A seagrass survey will be completed during design within the seagrass growing season prior to construction to confirm the presence/absence of seagrass adjacent to the project location. Based on the 2020 seagrass survey in Tampa Bay, approximately 0.0002 acres of seagrass habitat will be impacted by the proposed bridge, specifically south of the existing causeway within Segment 1.

5.2.3 Estuarine Water Column

The estuarine water column serves as EFH by providing habitat for spawning, breeding, feeding, and growth for a broad array of species and life stages within species. Furthermore, the estuarine open water column serves as a transport medium for organisms between the ocean, upstream rivers, and freshwater systems, where species-specific habitat components are favorable for completing particular life stages. Zooplankton and phytoplankton are the dominant organisms in this habitat and serve as the foundation of the estuarine and marine food webs. Tampa Bay supports a diverse nekton community that includes fish, shrimp, crabs, marine mammals, and shellfish. There will be no net loss of estuarine water column.

5.2.4 Mud, Sand, Shell and Rock Substrates

Substrates in the project area are located under the water column of Tampa Bay. In southwest Florida, substrates typically consist of coarse deposits of quartz and carbonate sand formed by the fragmented remains of mollusks, sponges, corals, algae, and foraminifera. The exact

composition of substrates will depend on and varies by location. There will be approximately 0.388 acres of sand substrate that will be impacted adjacent to the existing causeways.

5.2.5 Habitat Areas of Particular Concern

The project area is not mapped within a Habitat Area of Particular Concern (HAPC), according to the EFH Mapper. However, for specific life stages of estuarine dependent and nearshore snapper-grouper species, mangrove habitats are considered EFH-HAPC. The extent of these EFH-HAPC are shown on **Figure 5-1B.**

Figure 5-1A: Essential Fish Habitat Map

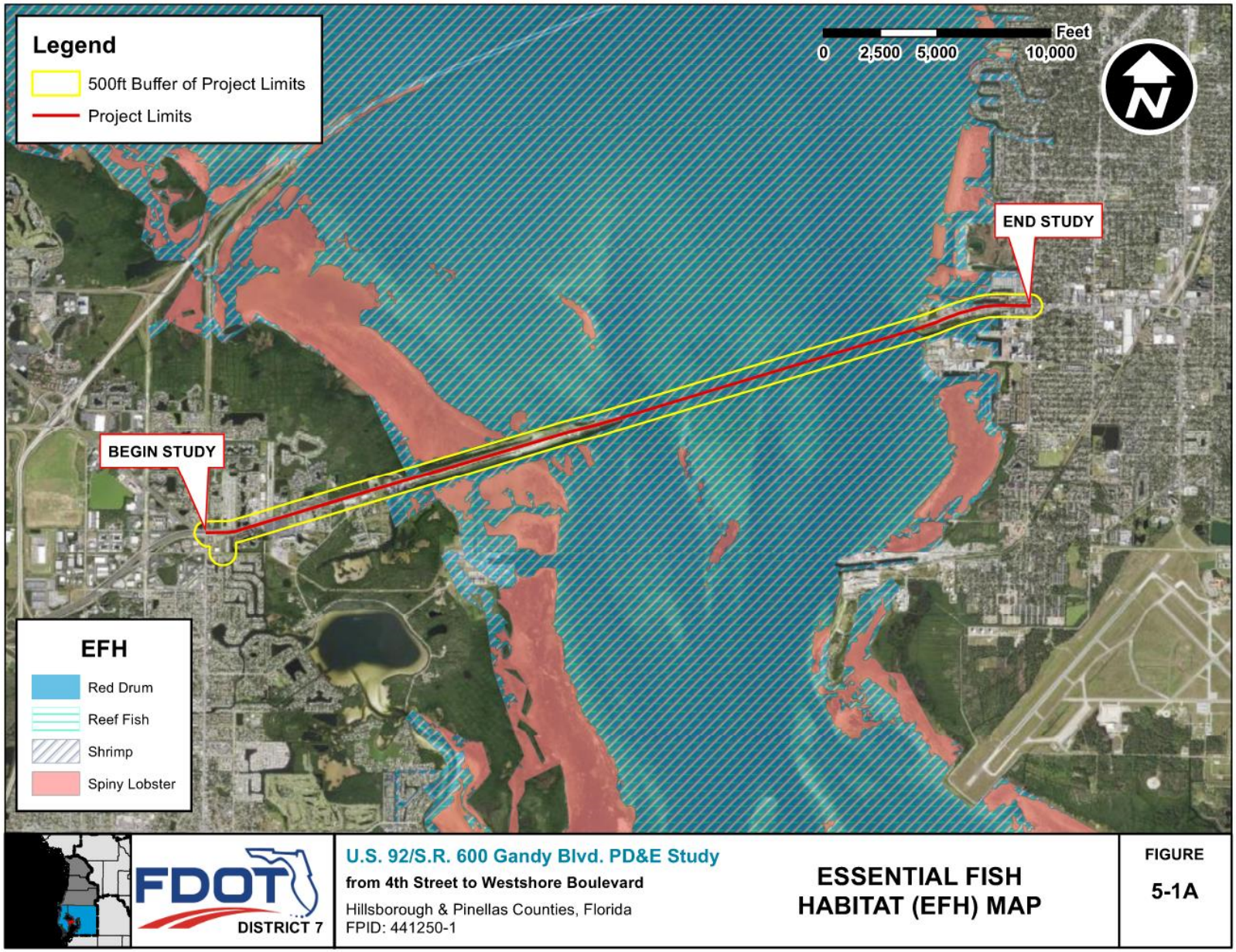


Figure 5-1B: Essential Fish Habitat Map

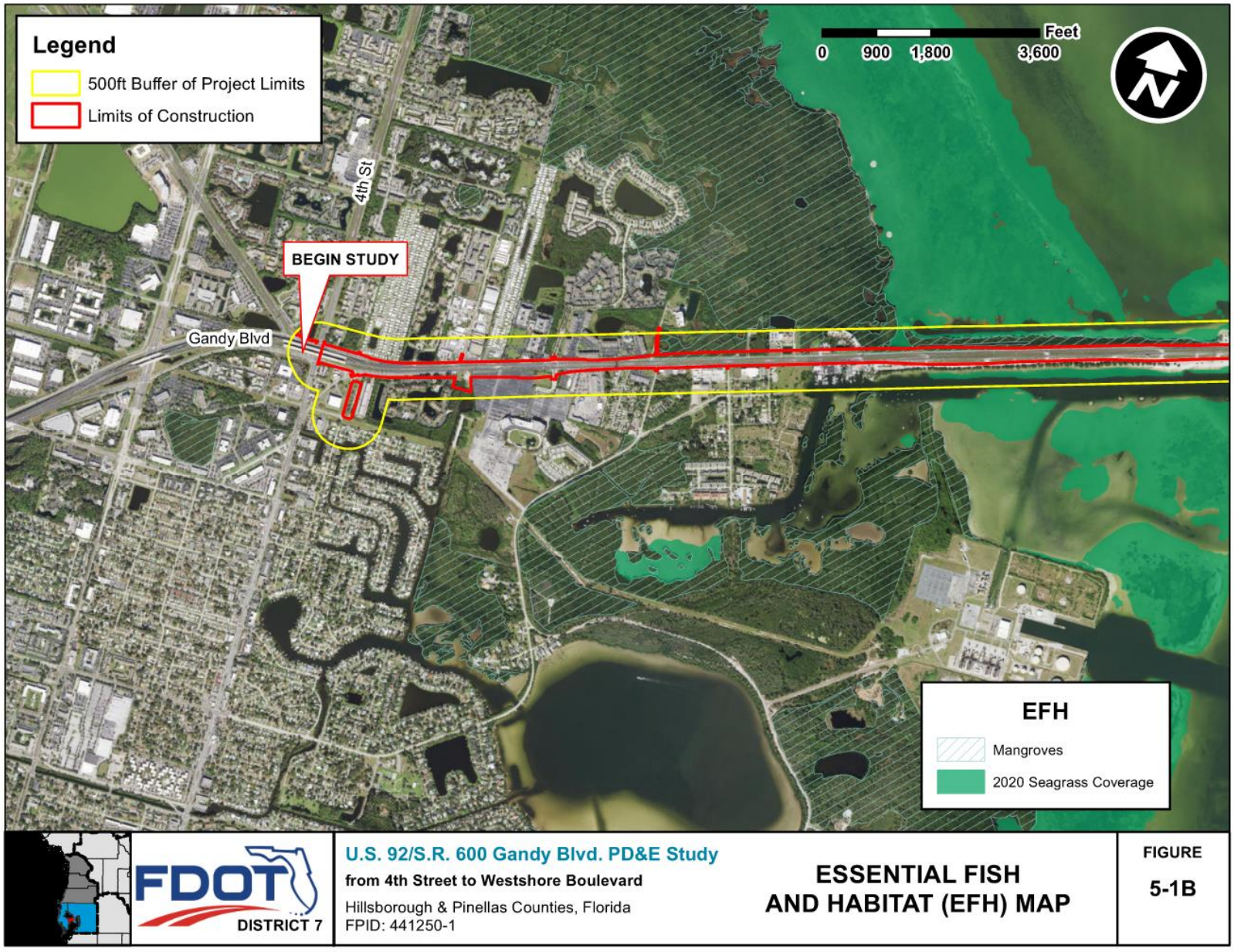
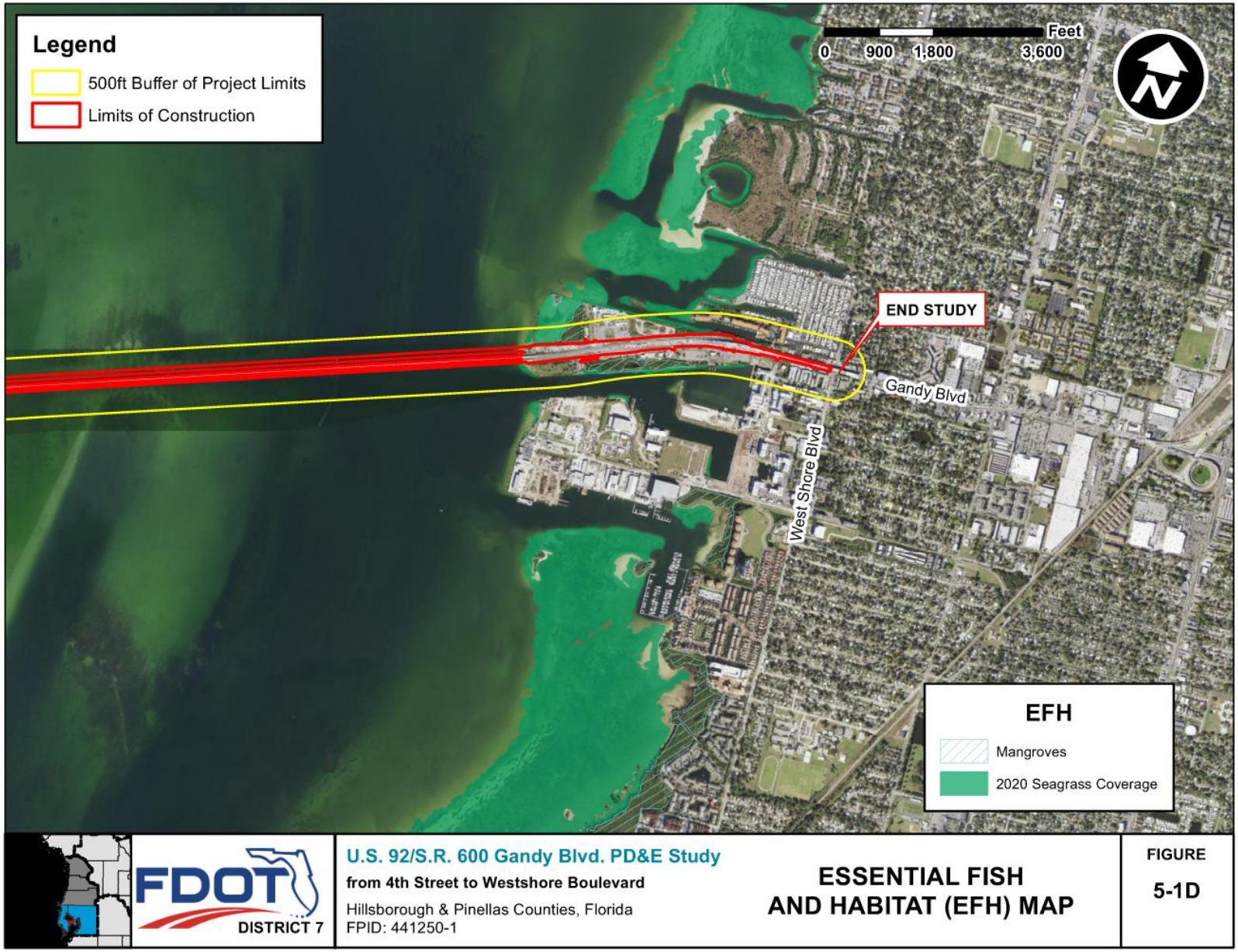


Figure 5-1C: Essential Fish Habitat Map

Figure 5-1D: Essential Fish Habitat Map



5.3 Federally Managed Species

The project area includes EFH that may support federally managed species. The federally managed species identified by NMFS during the ETDM Screening include pink shrimp, red drum, goliath grouper, yellowmouth grouper, scamp, gag grouper, dog snapper, yellowtail snapper, cubera snapper, mutton snapper, lane snapper, schoolmaster, and gray snapper. NMFS's EFH Mapper identified and described EFH for 59 federally managed species within the project study area including Red Drum, Reef Fish, Coastal Migratory Pelagics, Shrimp, Spiny Lobster, Large Coastal Sharks, and Small Coastal Sharks. **Table 5-1** provides the management units of each federally managed species which has likelihood of occurring within the Study Area.

Table 5-1: EFH Species Potential Occurrence within Project Area

Fishery Management Unit	Scientific Name	Common Name	Potential Occurrence in Project Area	Comments
Red Drum	*Sciaenops ocellatus*	Red drum	High	Estuarine, Nearshore, and Offshore Waters
Reef Fish	*Balistes capriscus*	Gray triggerfish	None	Nearshore and Offshore Waters
	Seriola dumerili	Greater amberjack	None	Nearshore and Offshore Waters
	Seriola fasciata	Lesser amberjack	None	Offshore Waters
	Seriola rivoliana	Almaco jack	None	Nearshore and Offshore Waters
	Seriola zonata	Banded rudderfish	None	Nearshore and Offshore Waters
	Lachnolaimus maximus	Hogfish	High	Estuarine and Nearshore Waters
	Etelis oculatus	Queen snapper	None	Offshore Waters
	Lutjanus analis	Mutton snapper	Moderate	Estuarine, Nearshore, and Offshore Waters
	Lutjanus apodus	Schoolmaster	High	Estuarine, Nearshore, and Offshore Waters
	Lutjanus buccanella	Blackfin snapper	None	Nearshore and Offshore Waters
	Lutjanus campechanus	Red snapper	None	Nearshore and Offshore Waters

Fishery Management Unit	Scientific Name	Common Name	Potential Occurrence in Project Area	Comments
	Lutjanus cyanopterus	Cubera snapper	Moderate	Estuarine, Nearshore, and Offshore Waters
	Lutjanus griseus	Gray (mangrove) snapper	High	Estuarine, Nearshore, and Offshore Waters
	Lutjanus jocu	Dog snapper	High	Estuarine, Nearshore, and Offshore Waters
	Lutjanus mahogoni	Mahogany snapper	None	Nearshore Waters
	Lutjanus synagris	Lane snapper	High	Estuarine, Nearshore, and Offshore Waters
	Lutjanus vivanus	Silk snapper	None	Offshore Waters
	Ocyurus chrysurus	Yellowtail snapper	Moderate	Estuarine, Nearshore, and Offshore Waters
	Pristipomoides aquilonaris	Wenchman	None	Offshore Waters/Out of Range
	Rhomboplites aurorubens	Vermilion snapper	None	Nearshore and Offshore Waters
	Caulolatilus chrysops	Goldface tilefish	None	Offshore Waters
	Caulolatilus cyanops	Blackline tilefish	None	Offshore Waters
	Caulolatilus intermedius	Anchor tilefish	None	Offshore Waters
	Caulolatilus microps	Blueline tilefish	None	Offshore Waters
	Lopholatilus chamaeleonticeps	(Golden) Tilefish	None	Offshore Waters
	Diplectrum bivittatum	Dwarf sand perch	None	Nearshore and Offshore Waters
Reef Fish	*Diplectrum bivittatum*	Sand perch	None	Nearshore Waters
	Epinephelus adscensionis	Rock hind	None	Nearshore and Offshore Waters
	Epinephelus drummondhayi	Speckled hind	None	Offshore Waters

Fishery Management Unit	Scientific Name	Common Name	Potential Occurrence in Project Area	Comments
	Epinephelus flavolimbatus	Yellowedge grouper	None	Offshore Waters
	Epinephelus guttatus	Red hind	None	Nearshore and Offshore Waters
	Epinephelus itajara	Goliath grouper	High	Estuarine, Nearshore, and Offshore Waters
	Epinephelus morio	Red grouper	Moderate	Estuarine, Nearshore, and Offshore Waters
	Epinephelus mystacinus	Misty grouper	None	Offshore Waters
	Epinephelus nigritus	Warsaw grouper	None	Nearshore and Offshore Waters
	Epinephelus niveatus	Snowy grouper	None	Nearshore and Offshore Waters
	Epinephelus striatus	Nassau grouper	None	Nearshore and Offshore Waters
	Epinephelus inermis	Marbled grouper	None	Nearshore and Offshore Waters
	Mycteroperca bonaci	Black grouper	Moderate	Estuarine, Nearshore, and Offshore Waters
	Mycteroperca interstitialis	Yellowmouth grouper	Moderate	Estuarine, Nearshore, and Offshore Waters
	Mycteroperca microlepis	Gag	High	Estuarine, Nearshore, and Offshore Waters
	Mycteroperca phenax	Scamp	High	Estuarine, Nearshore, and Offshore Waters
	Mycteroperca venenosa	Yellowfin grouper	Moderate	Estuarine, Nearshore, and Offshore Waters
Shrimp	*Penaeus aztecus*	Brown shrimp	Low	Estuarine, Nearshore, and Offshore Waters
	Penaeus setiferus	White shrimp	Moderate	Estuarine, Nearshore, and Offshore Waters

Fishery Management Unit	Scientific Name	Common Name	Potential Occurrence in Project Area	Comments
	Penaeus duorarum	Pink shrimp	Low	Estuarine, Nearshore, and Offshore Waters
	Pleoticus robustus	Royal red shrimp	None	Estuarine, Nearshore, and Offshore Waters/Out of Range
Spiny Lobster	*Panulirus argus*	Spiny lobster	None	Estuarine, Nearshore, and Offshore Waters/Out of Range
	Scyllarides nodifer	Slipper lobster	High	Estuarine, Nearshore, and Offshore Waters
Atlantic Highly Migratory Species-Large Coastal Sharks	*Carcharhinus leucas*	Bull shark	None	Offshore Waters
	Negaprion brevirostris	Lemon shark	Moderate	Estuarine, Nearshore, and Offshore Waters
	Galeocerdo cuvieri	Tiger shark	Moderate	Estuarine, Nearshore, and Offshore Waters
	Carcharhinus limbatus	Blacktip shark	High	Estuarine, Coastal, and Offshore Waters
Atlantic Highly Migratory Species-Small Coastal Sharks	*Rhizoprionodon terraenovae*	Atlantic sharpnose shark	High	Coastal Waters
	Sphyrna tiburo	Bonnethead shark	Low	Coastal and Offshore Waters

5.3.1 Red Drum Management Unit

Red Drum occur in a variety of nearshore and offshore waters through the Gulf of Mexico. Estuarine wetlands are particularly important to larval, juvenile, and sub-adult red drum. Spawning generally occurs in deeper waters near the mouths of bays and inlets between later summer and early fall. The eggs hatch in the Gulf where larvae are transported and mature in estuaries before migrating back to the Gulf. Adult red drum may still utilize nearshore estuaries, although they tend to spend more time offshore as they age.

5.3.2 Reef Fish Management Unit

5.3.2.1 Hogfish

Hogfish are found from North Carolina, south through the Caribbean Sea and Gulf, to the northern coast of South America. Juveniles inhabit shallow seagrass beds and adults occur on coral reefs and rocky flats. Larvae, post-larvae occupy estuarine and nearshore waters, and juveniles utilize submerged aquatic vegetation from December through April. Adults prefer hard bottom and reef habitats in nearshore and offshore waters with depths less than 30 meters. Spawning occurs seasonally from April to December.

5.3.2.2 Mutton Snapper

Mutton snapper occur in the western Atlantic Ocean from the northeast U.S. to Brazil, but is most common in the tropical waters of Florida, the Bahamas, and the Caribbean Sea; it is also found in the Gulf of Mexico. Large adults are found in or near offshore reef and rock rubble habitats, while the juveniles live in inshore areas. The juveniles are abundant in shallow waters such as tidal mangrove creeks, canals, and shallow protected bays, using turtle grass as bottom cover. Mutton snapper spawn in large, transient aggregations throughout its range, though primarily in the northeastern Caribbean. Spawning occurs during the months of February in the Caribbean region while in other areas spawning occurs during summer months.

5.3.2.3 Schoolmaster Snapper

Schoolmaster snapper are most commonly found on coral reefs near Florida, in the Caribbean, and the Bahamas. It appears confined to reefs more than other snappers; however, it has also been reported as the predominant snapper in areas adjacent to or inside mangrove prop-root habitats. As its name implies, schoolmaster snapper live in groups of dozens of subjects often near coral reefs in the day and seagrass beds at night. Small juveniles inhabit shallow-water mangrove habitats.

5.3.2.4 Cubera Snapper

Cubera snapper are solitary reef fish that occur from the northeast U.S. to Brazil in the western Atlantic Ocean; it is relatively rare to the Gulf of Mexico. Cubera snappers are solitary reef dwellers living inshore or nearshore associated with rocky ledges and overhangs. They live at depths up to 180 feet. Juveniles typically inhabit inshore mangrove areas and seagrass beds that offer some protection from predators. Small cubera also are known to enter estuary mangrove areas, and the tidal reaches of streams and freshwater canals. The cubera spawns in aggregations in the offshore waters of the Caribbean from June to August.

5.3.2.5 Gray Snapper

Gray snappers are found in the western Atlantic Ocean from Massachusetts to Bermuda, southward to Brazil, including Bermuda, Bahamas, West Indies, Gulf of Mexico, and Caribbean Sea. It is especially abundant around the coastline of Florida. Gray snappers reside in coastal as well as offshore waters from very shallow areas to depths of 480 feet. Large aggregations of gray

snappers are frequently observed amongst coral reefs, rocky areas, estuaries, and mangrove habitats. Adults of the species tend to remain in the same area for long periods once established; however, the species exhibits daily activity patterns associated with nocturnal feeding and diurnal schooling. Young gray snapper live inshore in areas such as seagrass beds as well as soft and sand-bottom areas but may be found in a variety of habitats.

5.3.2.6 Dog Snapper

Dog snapper are found in the western Atlantic Ocean from Massachusetts to Brazil, although it is rare north of Florida. Adult dog snapper are commonly found around coral reefs and rocky bottoms at depths of 12 to 100 feet, while the young can be found in estuaries and have been known to go inshore and swim into rivers. Spawning typically occurs in March near Jamaica and the northeast Caribbean, although they do spawn to a lesser degree throughout their range. Its eggs and larvae are planktonic, dispersed by the ocean currents.

5.3.2.7 Lane Snapper

Lane snapper are found in the western Atlantic Ocean from the mid-Atlantic U.S. to Brazil. It is most abundant in the Antilles, off Panama, and the norther coast of South America. It also occurs in Bermuda and the Gulf of Mexico. Adult lane snappers live in a variety of habitats, but are most commonly observed over reefs and vegetated sandy bottoms in shallow inshore waters, especially seagrass beds associated with shrimping areas. The species has also been reported in offshore waters to depths of 600 feet. Juveniles live in protected inshore areas. Spawning occurs in offshore aggregations throughout the spring and summer, depending on the location.

5.3.2.8 Yellowtail Snapper

Yellowtail snapper are found in the western Atlantic Ocean from the northeast U.S. to Brazil, including the Gulf of Mexico and the Caribbean Sea. It is most common to the Bahamas, off south Florida, and in the Caribbean Sea. Adult yellowtail snappers live over sandy areas near deep reefs at depths of 30 to 240 feet, while small adults tend to congregate over hard bottom habitats. Juveniles reside inshore in seagrass bed nursery areas that offer protection from predation while they mature. Spawning occurs in large offshore aggregations year-round, although overall activity declines during the winter months.

5.3.2.9 Goliath Grouper

Goliath grouper occur in the western Atlantic Ocean from Florida to Brazil, including the Gulf of Mexico and Caribbean Sea. They occur in shallow, inshore waters to depths of 150 feet, preferring areas of rock, coral, and mud bottoms. Juveniles inhabit mangroves and brackish estuaries, especially near oyster bars. Spawning occurs during the summer months from July through September and is strongly influenced by the lunar cycle.

5.3.2.10 Red Grouper

Red grouper occur throughout the western Atlantic from North Carolina to southern Brazil, and in the Gulf, Caribbean, and Bermuda. Early juveniles inhabit estuarine and nearshore waters on

submerged aquatic vegetation or hard bottom habitats. Larvae and adults are more likely to be found nearshore or offshore on hard bottom or reef habitats at depths from 10-600 feet.

5.3.2.11 Black Grouper

Black grouper occur along the eastern Gulf and Yucatan Peninsula, but is considered rare in the western half of the Gulf. It is found from shore to depths of 500 feet. Adults prefer wrecks and rocky coral reefs, ledges and high-to-moderate relief habitat. Juveniles occupy estuarine and nearshore waters with submerged aquatic vegetation and mangroves and move offshore to reefs and hard bottom habitats with growth.

5.3.2.12 Yellowmouth Grouper

Yellowmouth grouper occur in the western Atlantic Ocean from Florida to Brazil, including the Gulf of Mexico and Caribbean Sea. This grouper is found mainly on rocky or coral bottoms from the shoreline to at least 180 feet; small and middle-sized individuals commonly occur in mangrove-lined lagoons, although they are more common in island waters than along the coast. Spawning occurs in large offshore aggregations throughout the years with a peak from April through May.

5.3.2.12 Gag Grouper

Gag occur in a variety of nearshore and offshore waters throughout the Gulf of Mexico. Estuarine wetlands and shallow nearshore waters are particularly important to larval, juvenile, and sub-adult gag grouper. Spawning generally occurs in deeper waters from late December through April. Post-larvae recruit to estuaries and coastal lagoons where they inhabit seagrasses, saltmarshes, oyster reefs and mangrove creeks for up to 6 months. Later juveniles migrate to offshore reefs and ledges. Adults are typically found in offshore reefs and hardbottom areas, shipwrecks, coral reefs, and rock ledges.

5.3.2.13 Scamp Grouper

Scamp grouper mostly occur in offshore waters below 180 feet. Scamp are reef-associated fish found over ledges and high-relief rocky bottoms in the eastern Gulf of Mexico. Scamp are the most abundant grouper in areas of living *Oculina* coral formations at depths of 180 to 300 feet; aggregations of scamp are strongly associated with *Oculina* coral formations. Juveniles can be found in shallow waters at jetties and in mangrove areas. Spawning generally occurs near a shelf edge of maximum complexity from February through July in the Gulf of Mexico, overlapping with gag grouper.

5.3.2.14 Yellowfin Grouper

Yellowfin grouper are relatively uncommon but do occur in the southern Gulf and West Indies. As an adult this grouper is found on rocky bottoms and coral reefs from the shoreline to mid-shelf depths. Juveniles occupy shallow submerged aquatic vegetation and move to deeper rocky bottoms with growth.

5.3.3 Coastal Migratory Pelagic Unit

5.3.3.1 King Mackerel

King mackerel occur throughout the Gulf and Caribbean Sea and along the western Atlantic from Brazil to the Gulf of Maine. Adults rarely enter estuaries and prefer the water column over reefs and in coastal waters. They prefer depths less than 260 feet but do occur out to the shelf edge in depths to 650 feet. Juveniles are found from inshore to the middle shelf. Spawning occurs over the outer continental shelf from May to October.

5.3.3.2 Spanish Mackerel

Spanish mackerel occur throughout the coastal zones of the western Atlantic from southern New England to the Florida Keys and throughout the Gulf. Adults are found in coastal waters and enter estuaries to feed on baitfish. This species migrates to the northern Gulf in the spring following temperature gradients. Spawning occurs over the inner continental shelf from May to September.

5.3.3.3 Cobia

Cobia mostly occur in coastal and offshore water from depths of 3-230 feet, and are known to be common in bays and inlets. Adults are associated with the water column and are known to migrate seasonally and spawning occurs in coastal waters from April through September.

5.3.4 Shrimp Management Unit

5.3.4.1 Pink Shrimp

Penaeid shrimp are distributed in tropical and temperate waters across the globe, and the pink shrimp is the primary species which ranges within the Action Area. In the southeastern United States, the shrimp industry relies almost exclusively on three shallow-water species of the family Penaeidae: white (*Litopenaeus setiferus*), brown (*Farfantepenaeus aztecus*), and pink (*F. duorarum*) shrimp. Spawning amongst the shrimp species varies by season and water depth but appears correlated with bottom water temperature (Lindner and Anderson 1956). The inshore nursery habitat is important for shrimp because it is where most of their growth occurs, particularly habitats with high productivity, suitable substrate, and shelter from predators. This habitat also appears to be the most affected by natural and man-made alterations (Alexander et al., 1986), including construction and maintenance of navigation channels, discharges from residential and commercial properties, dredge and fill for land use development, agricultural runoff and other non-point source pollution, and alteration of freshwater inflows.

5.3.5 Spiny Lobster Management Unit

5.3.5.1 Spiny Lobster and Slipper Lobster

Spiny lobster and the less abundant slipper lobster are both found among offshore coral reefs, seagrasses, artificial reefs, and hard bottom. Adults are widespread in nearshore and offshore areas, post larvae and juveniles can be found in the benthos on submerged aquatic vegetation, in estuarine, nearshore, or offshore waters year round in depths from 3 to 300 feet.

5.3.6 Large Coastal Sharks Management Unit

5.3.6.1 Bull Shark

The bull shark is a cosmopolitan species found in warm temperate waters. It is a large shark and is the only shark species known to be capable of entering freshwater for extended periods. It occupies the estuarine, coastal, nearshore, and offshore waters of the Gulf of Mexico, extending to the shelf edge, but not in slope waters.

5.3.6.2 Lemon Shark

The lemon shark is primarily found within shallow coastal areas and is distributed throughout the western Atlantic from North Carolina to Brazil, the Gulf of Mexico, Caribbean Sea, and tropical eastern Atlantic and eastern Pacific. Neonates are found inshore of 50 feet deep, juveniles and adults are found inside of 600 feet deep.

5.3.6.3 Tiger Shark

The tiger shark is found in warm waters and ranges from shallow coastal to deep oceanic waters. In the Gulf, juvenile tiger sharks have been found to prefer seagrass flats on the west coast of Florida. Tiger sharks are one of the larger species of sharks and have been documented to make transoceanic migrations.

5.3.6.4 Blacktip Shark

The blacktip shark occurs in shallow coastal waters and offshore surface waters of the continental shelves within tropical waters and has distinct populations around the world, including evidence of separate genetic populations between the Atlantic and the Gulf of Mexico, thus management of two separate stocks. Blacktip sharks range from coastal bays and estuaries out to depths of 600 feet, with the adults typically found further offshore than juveniles.

5.3.7 Small Coastal Sharks Management Unit

5.3.7.1 Atlantic Sharpnose Shark

The Atlantic sharpnose shark is an abundant species and a year-round resident along the coasts of South Carolina, Florida, and the Gulf of Mexico. Inshore and nearshore waters are important nursery habitats for the species, and adults are typically found out to depths of 600 feet.

5.3.7.2 Bonnethead Shark

The Bonnethead shark is a small species of hammerhead shark confined to warm coastal waters of the western hemisphere. It is found in shallow coastal waters and is common on sandy or mud bottoms, in bays, and along beaches.

5.4 Potential Impacts to EFH

This section describes the potential adverse effects caused by the Proposed Action to federally managed species or their EFH. Adverse effects include any impact which reduces the quality

and/or quantity of EFH. These effects may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in fecundity), or individual, cumulative, or synergistic effects (50 CFR 600.810(a)).

5.4.1 Direct

Direct impacts resulting from the proposed replacement of Gandy bridge include fill from the installation of pilings within the open water portion of Tampa Bay. These impacts are minor and are not expected to adversely affect EFH. The eastbound bridge will be permanently removed and a new bridge will be constructed on the northern side of the remaining bridge. There will be minimal impacts from the installation of the new bridge pilings, but these impacts are not anticipated to cause additional impacts to Tampa Bay or its substrates since the existing bridge and pilings will be removed. Therefore, there will be no net loss due to the installation of these pilings. Due to the lack of seagrass adjacent to the existing bridge except at the terminus of the existing causeways, the current and proposed height of the new bridge, and the removal of the existing bridge, shading impacts are not anticipated at this location. Although the causeways will not be widened, there will be minor impacts that occur from the project within these areas (SW 4, SW 9, and SW 11). The total impacts to seagrass are 0.002 acres and the impacts to the substrate from these activities are 0.388 acres.

Means and methods for construction may include the use of barges or other marine vessels for transport of materials or personnel. Operation of any of these vessels has the potential to damage seagrass as a result of propeller scarring, prop wash, and hull grounding. The FDOT will demarcate seagrass boundaries and permitted limits of construction. Vessel movement will be restricted to areas within areas permitted for permanent impact, areas outside of seagrass boundaries, or within areas where the vessel can maintain a minimum one-foot clearance over the seagrass bed. Barge or other vessel anchorage will not be allowed in seagrass beds areas unless those areas are permitted for seagrass impacts by the USACE permit.

The project will also impact 6.71 acres of mangrove habitat. The mangrove habitat being impacted is adjacent to the existing roadway, parking lots, and multi-use pathway and has indications of degradation along these areas such as intrusion by invasive species, mangrove mortality, and reduced flushing.

Table 5-2 Impacts to EFH

Wetland ID	FLUCFCS	Classification	Description	Impact Type	Wetland/Surface Water Impact (Acres)
WL 4	612	E1UBL	Mangrove Swamps	Direct (Fill)	0.057
WL 6	612	E2FO3N	Mangrove Swamps	Direct (Fill)	3.849
WL 7	612	E2FO3N	Mangrove Swamps	Direct (Fill)	0.357

WL 8	612	E2FO3N	Mangrove Swamps	Direct (Fill)	2.441
SW 4	540	E1UBL	Bays and Estuaries	Direct (Fill)	0.209
SW 4	540	E2USN	Bays and Estuaries (Seagrass)	Direct (Fill)	0.002
SW 9	540	PFO3R	Bays and Estuaries	Direct (Fill)	0.150
SW 11	540	E1UBL	Bays and Estuaries	Direct (Fill)	0.029

Direct Wetland Impacts	Surface Water Impacts
6.71 (ac)	0.39 (ac)

E1UBL Estuarine, Subtidal, Unconsolidated Bottom, Subtidal

E2FO3N Estuarine, Intertidal, Forested, Broad-leaved Evergreen, Regularly Flooded

E2USN Estuarine, Intertidal, Unconsolidated Shore, Regularly Flooded

PFO3R Palustrine, Forested, Broad-leaved Evergreen, Seasonally Flooded

5.4.2 Secondary

Secondary impacts are the result of an indirect effect by the proposed project or construction. Potential secondary impacts from this project include water quality degradation to Tampa Bay from stormwater runoff from increased use of the road, including an uptick in sediment, oil and grease, metals and other pollutants. To minimize these secondary impacts, the project will be constructed in accordance with all permit conditions for maintaining water quality during construction and operation of the facility. Therefore, secondary impacts to EFH are not anticipated.

5.5 Conclusion

Construction activities will result in 7.10 acres of impacts to EFH, including 0.002 acres of potential impacts to seagrass, 0.388 acres of impact to substrates, and 6.71 acres of potential impacts to mangroves.

Proposed construction activities will create temporary turbidity in the water column, however it will be confined within the proposed floating turbidity barrier delineated on the Stormwater Pollution Prevention Plan (SWPPP), prepared in accordance with Section 401 of the Clean Water Act and the National Pollution Discharge Elimination System (NPDES) and submitted during the permitting process. All floating turbidity barriers will be compliant with manatee conditions for in-water work and will be designed and installed to prevent manatee entanglement or entrapment. The barriers will not impede manatee movement. In addition, due to the nature of the sandy substrate and wave action within these areas, it is anticipated that any disturbed sediments will

settle out quickly. The proposed bridge replacements are crossing similar substrate and will be the same linear feet across Tampa Bay. In addition, existing causeways are being utilized for bridge approaches and roadways. The minimal proposed direct impacts are not expected to adversely affect the EFH resources in the project area. Any adverse impacts to wetlands will be offset within the same drainage basin with an appropriate mitigation plan.

Indirect and cumulative effects of EFH are not expected since upon construction completion the conditions are expected to be similar to current conditions and actions will be taken to minimize indirect effects to the EFH.

The proposed project will not have significant direct or indirect impacts on EFH, resulting in no representative species or life stages of a species being significantly impacted. The proposed minor direct losses of seagrass and mangrove habitat will be offset with in-basin mitigation which will provide habitat that is of similar quality as the proposed impact area. The species occurrence within the project area will likely be transient in nature between accessible mangroves and other estuarine habitats along the surface waters. Construction activities will create temporary, localized noise impacts and/or turbidity in the water column. The noise will dissipate shortly after construction activities cease, while turbidity will be confined to proposed floating turbidity barrier delineated on the SWPPP, prepared in accordance with Section 401 of the Clean Water Act and the NPDES.

Although some design information is unknown at this time, the FDOT commits to completing any needed Section 7 consultation with NMFS during design once final impacts associated with the bridge construction, including the driving of piles, is finalized.

SECTION 6 – ANTICIPATED PERMITS

Environmental permits are typically required from one or more regulatory agencies for FDOT construction activities, including the addition of impervious surfaces; construction, alteration, or abandonment of stormwater management facilities; impacts to wetlands and surface waters, including navigable waters; and actions that may affect protected species and/or their habitat. Permit applications are reviewed by regulatory agencies for their consistency with regulatory criteria and/or the project's effect on resources (e.g., navigation, wetland function, protected species, and their habitats). During the permit application process, the lead regulatory agencies may request input from other agencies to ensure the project will not adversely impact a regulated or protected resource under their purview. For protected species, a species-specific permit may be required prior to issuance of the environmental permit. The following is a list of anticipated permits needed from the state and federal agencies for the proposed project.

6.1 US Army Corps of Engineers Standard Permit

Section 404 of the CWA established a program to regulate the discharge of dredge or fill material into the waters of the United States, including wetlands. Responsibility for Section 404 was previously administered by the USACE. However, the State of Florida requested and was granted authority on December 22, 2020 (85 FR 83553), to operate the Section 404 Program for work in most non-tidal waters in the state. The USACE retained most tidal waterbodies and any wetlands within 300 feet of these retained areas. Tampa Bay is a retained waterbody and therefore the USACE has jurisdiction for all impacts to the bay and wetlands 300 feet adjacent to the bay. FDEP is responsible for any impacts to federally jurisdictional wetlands outside of the retained waterbody and its 300-foot buffer. The issuance of a Water Quality Certification, under Section 401 of the CWA, is required prior to the issuance of a Section 404 Dredge and Fill Permit. This Water Quality Certification is obtained with the issuance of a state Environmental Resource Permit issued by the Water Management District.

6.2 State 404 Individual Permit

The State 404 Program is administered by FDEP. All waters of the United States (WOTUS) with potential to be impacted by the proposed project outside of Tampa Bay and its 300-foot buffer are not retained by the USACE and are therefore assumed by FDEP. Based on the amount of wetland and surface water impacts, a State 404 Individual Permit is anticipated. The issuance of a Water Quality Certification is also required prior to the issuance of a State 404 Permit.

6.3 SWFWMD Individual Environmental Resource Permit

The FDEP and Florida's five Water Management Districts implemented Chapter 62-330, Florida Administrative Code, Environmental Resource Permitting (ERP) to govern certain regulated activities, such as works in waters of the state, including wetlands, and construction of stormwater management systems. The proposed project is located within the jurisdiction of the SWFWMD. The proposed project is expected to require an Individual ERP.

Under the ERP program, activities located on sovereign submerged lands (SSL) also require propriety authorization to use such lands. In 1948, FDEP granted the Tampa Port Authority (FKA Hillsborough County Port Authority) jurisdiction over SSL. In 1917, the ROW of Gandy Bridge was granted by the State of Florida to the Tampa and St. Petersburg Railway Company. Per a Final Judgment issued in 1944, the federal government took possession of the Gandy Blvd causeway and bridge. In 1948x, the land was conveyed to FDOT to be maintained. This land authorization is satisfactory for the SSL for the proposed project and no further coordination is needed.

6.4 NPDES

As authorized by the CWA, the National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. The Environmental Protection Agency (EPA) delegated its authority to implement the NPDES program to the FDEP. This permit is required because the proposed project will disturb more than one acre of land, and the stormwater runoff will discharge to waters of the state. A Stormwater Pollution Prevention Plan (SWPPP) is required to be developed as part of the NPDES and implemented during construction. The objectives of the SWPPP are to prevent erosion where construction activities occur, prevent pollutants from mixing with stormwater, and prevent pollutants from being discharged by trapping them on-site, before they can affect the receiving waters. The applicant must submit a Notice of Intent with the FDEP at least two days prior to the commencement of construction.

SECTION 7- CONCLUSION

7.1 Implementation Measures

Implementation measures are actions that FDOT would be required to take per procedure, standard specifications, or other agency requirements that will be implemented at a later project phase, but which will help address or reduce project effects and that need to be relayed to the agencies during review of the NRE. These measures are not tracked as commitments since they would already be required at some stage of the project. FDOT will perform or adhere to the following measures:

- Conduct a 100% pre-construction survey for the gopher tortoise in accordance with 68A-27.003 and the current FWC *Gopher Tortoise Permitting Guidelines* and coordinate with FWC to receive necessary permit authorizations prior to construction.
- Conduct a pre-construction survey for the Florida burrowing owl in accordance with 68A-27.003(a), 68A-27.001(4), F.A.C. and the current FWC *Florida Burrowing Owl Species Conservation and Permitting Guidelines* and coordinate with FWC to receive the necessary authorizations and implement the appropriate conservation measures as needed prior to construction.
- Provide mitigation for wetland impacts resulting from project design and construction per 373.4137, F.S. and 33 U.S.C. § 1344.
- Apply erosion and sediment controls and other best management practices prior to and throughout construction to prevent adverse impacts to wetland and aquatic resources adjacent to the project area.
- Coordinate with the FDEP Office of Resilience and Coastal Protection once ROW requirements have been defined.
- FDOT will adhere to the FDOT Special Provision for the protection of the Gulf Sturgeon (Appendix F).
- Any osprey nests within the project area that are deemed necessary for removal will be removed outside of nesting season.
- All gopher tortoise burrows, active or inactive, will be evacuated prior to site manipulation in the project vicinity. If a burrow excavation is utilized, it will be performed by experienced personnel. The method used will minimize the potential for injury of protected species. The FDOT will follow the excavation guidance provided within the FWC's Gopher Tortoise Permitting Guidelines.
- Pre-construction surveys to confirm the absence of bats within the bridge structures that will be impacted.

7.2 Commitments

The FDOT has taken steps to avoid and minimize impacts to protected species and wetlands when practicable. Further measures to avoid and minimize impacts to these resources will be considered

during the design and permitting phase of this project. The FDOT will commit to perform or adhere to the following:

- FDOT will conduct submerged aquatic vegetation surveys during the seagrass growing season (June – September) in order to finalize impacts to these resources during the permitting process. Barge or other vessel anchorage will not be allowed in seagrass bed areas unless those areas are permitted for seagrass impacts.
- FDOT will adhere to the NOAA SERO Protected Species Conditions (Appendix G) during the construction of the project.
- FDOT will adhere to the Standard Protection Measures for the Eastern Indigo Snake (Appendix D). If an indigo snake is encountered, the snake will be allowed to vacate the area prior to additional site manipulation in the vicinity.
- A pre-construction survey by a qualified Permitted Monitor will occur for beach-nesting birds utilizing the current FWC *Imperiled Beach-Nesting Birds Species Conservation and Permitting Guidelines* and coordination with FWC to implement the appropriate conservation measures as needed prior to construction.
- The most current version of the FWC's Standard Manatee Conditions for In-Water Work will be implemented during construction (Appendix H).
- FDOT will provide mitigation for impacts to wood stork Suitable Foraging Habitat within the Service Area of a Service-approved wetland mitigation bank or wood stork conservation bank.
- Consistent with 23 CFR 771.133, FDOT commits to reinitiating consultation during design and permitting with NMFS and USFWS for the following species: sea turtles, smalltooth sawfish, giant manta ray, west Indian manatee, and gulf sturgeon. FDOT commits to providing the information necessary to determine the type, degree, and extent of impacts to listed species potentially adversely impacted by the proposed project. FDOT will develop mitigation measures in consultation with the NMFS and USFWS to offset unavoidable impacts.
- In-water work will only be conducted from official sunrise until official sunset times. If nighttime in-water work is necessitated, FDOT will reinitiate consultation with the jurisdictional resource agencies to identify appropriate conservation measures and receive the necessary authorizations prior to commencement of nighttime in-water work.

7.3 Agency Coordination

The final NRE report will be provided to USFWS, NMFS, and FWC for review and concurrence with the proposed effect determinations for listed species and potential impacts to wetland resources. Agency coordination will continue during and throughout the design phase of the project, when environmental permitting typically occurs. Permit applications will be reviewed by the regulatory agencies for potential impacts to environmental resources. During the permitting process, the regulatory agencies will likely request input from the commenting agencies to ensure consistency with regulatory criteria under their purview. For federal permit applications, USACE will likely request input from the USFWS and NMFS with respect to federally listed or managed species, as

needed. For state permit applications, SWFWMD will seek input from the FWC on state-listed wildlife, particularly aquatic and wetland-dependent species.

SECTION 8 - REFERENCES

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APPENDIX A

Land Use and Habitat Descriptions

Urban and Built-Up (FLUCFCS 100)

This land use type consists of areas of intensive human use. Much of the land in these areas is occupied by man-made structures. This category of land use includes residential, commercial, recreational, industrial, and institutional developments. Identified Urban Land uses within the project area include Medium Density Residential (FLUCFCS 120), High Density Residential (FLUCFCS 130), Commercial and Services (FLUCFCS 140), Institutional (FLUCFCS 170), Recreational (FLUCFCS 180), and Urban Open Land (FLUCFCS 190). This FLUCFCS category is found throughout the project area but is concentrated toward the two ends of the project. These areas lack natural habitat and therefore provide little to no habitat for listed species.

Upland Forests (FLUCFCS 400)

This land use type consists of upland areas which support a tree canopy closure of at least ten percent. This FLUCFCS category includes xeric and mesic forest communities. Identified Upland Forest land uses within the project area include Upland Hardwood Forests (FLUCFCS 420). These forested areas are uncommon within the project area. They are present near the east end of the project and are adjacent to developed areas.

Water (FLUCFCS 500)

This land use type consists of all areas within the United States land mass that are predominantly/persistently covered by water. Water within the project area include Reservoirs (FLUCFCS 530) and Bays and Estuaries (FLUCFCS 540). Existing stormwater ponds are found at the eastern and western ends of the corridor. The majority of the Water within the project area consists of bays and estuaries spanning most of the project. These areas provide foraging habitat for listed species, such as wading birds, piscivorous raptors, manatees, and sea turtles.

Wetlands (FLUCFCS 600)

This land use type consists of areas where water is near, at, or above the soil surface for a significant portion of most years. This FLUCFCS category includes both forested and non-forested wetlands. Identified Wetland land uses within the project area include Mangrove Swamps (FLUCFCS 612), Steam and Lake Swamps (FLUCFCS 615), Wetland Forested Mixed (FLUCFCS 630), Freshwater Marshes (FLUCFCS 641), Saltwater Marshes (FLUCFCS 642), Shorelines (FLUCFCS 652), and Salt Flats (FLUCFCS 660).

Forested and non-forested wetlands are found sporadically throughout the project area. Mangrove swamps are the most common wetland community in the project corridor, found along the edges of the bays/estuaries. Vegetation in these areas includes red mangrove (*Rhizophora mangle*), black mangrove (*Avicennia germinans*), white mangrove (*Laguncularia racemosa*), cabbage palm (*Sabal palmetto*), Brazilian pepper (*Schinus terebinthifolia*), salt bush (*Baccharis halimifolia*), and sea grape (*Coccoloba uvifera*). The wetland habitats within the project area provide cover and foraging habitat for listed species.

Transportation, Communication, and Utilities (FLUCFCS 800)

This land use type consists of industrial areas used for transportation, communications, and utilities. This category of land use includes transportation facilities, roads, railroads, communication facilities, transmission towers, power facilities, and water treatment plants. Land uses in this category that are present include Transportation (FLUCFCS 810), Communications (FLUCFCS 820), and Utilities (FLUCFCS 830). These areas do not provide habitat for listed species.

APPENDIX B

Photographs

Photo 1: Pedestrian trail in the northeast quadrant of the project

Photo 2: Vegetation along the southern edge of SW 4 near the east end of the project

Photo 3: Representative of WL 4, north of Gandy Boulevard

Photo 4: Non-swimming beach area adjacent to WL 4, north of Gandy Boulevard

Photo 5: Gandy Bridge over SW 4, facing southwest

Photo 6: Representative of WL 3, south of Gandy Boulevard

Photo 7: Representative of WL 3

Photo 8: SW 4 on the north side of Gandy Bridge, facing east

Photo 9: Representative of WL 5, north of Gandy Boulevard

Photo 10: Representative of WL 6, north of Gandy Boulevard

Photo 11: Representative of WL 7, north of Gandy Boulevard

Photo 12: Representative of WL 9, north of Gandy Boulevard

Photo 13: Upland adjacent to WL 9, north of Gandy Boulevard

Photo 14: Recreational area in the southwest quadrant of the project, facing south

Photo 15: Recreational area in the southwest quadrant of the project, facing northeast

Photo 16: Osprey nest on signpost, in Tampa Bay south of Gandy Bridge

APPENDIX C

NRCS Soil Descriptions

HILLSBOROUGH COUNTY SOIL DATA							
Soil No.	USDA Soil Name	Seasonal High Ground Water		HSG	Soil Classification		
		Depth* (feet)	Duration (months)		Depth (inches)	Unified	AASHTO
22	Immokalee-urban land complex	0-1.0	Jun-Nov	B/D	0-5	SP, SP-SM	A-3
					5-35	SP, SP-SM	A-3
					35-60	SP-SM, SM	A-3, A-2-4
					60-80	SP, SP-SM	A-3
32	Myakka-urban land complex	0-1.0	Jun-Nov	B/D	0-20	SP, SP-SM	A-3
					20-44	SM, SP-SM	A-3, A-2-4
					44-80	SP, SP-SM	A-3
45	St. Augustine-urban land complex	1.5-3.0	Jul-Oct	C	0-3	SP, SP-SM	A-3
					3-80	SP-SM, SM	A-3, A-2-4
56	Urban land	---	---	---	---	---	---
58	Wabasso-urban land complex	0-1.0	Jun-Oct	B/D	0-21	SP, SP-SM	A-3
					21-31	SP-SM, SM	A-3, A-2-4
					31-48	SC, SM-SC	A-2-4, A-2-6
					48-80	SP-SM, SM	A-3, A-2-4
99	Water	---	---	---	---	---	---
100	Waters of the Gulf of Mexico	---	---	---	---	---	---

PINELLAS COUNTY SOIL DATA							
Soil No.	USDA Soil Name	Seasonal High Ground Water		HSG	Soil Classification		
		Depth* (feet)	Duration (months)		Depth (inches)	Unified	AASHTO
3	Anclote fine sand, depressional	0.0	Jun-Dec	D	0-16	SP, SP-SM	A-2-4, A-3
					16-80	SM, SP, SP-SM	A-2-4, A-3
7	Basinger fine sand	0-1.0	Jun-Feb	D	0-5	SP	A-3
					5-14	SP, SP-SM	A-2-4, A-3
					14-36	SP, SM-SM	A-2-4, A-3
					36-80	SP, SP-SM	A-2-4, A-3
10	EauGallie soils and urban land	0.5-1.5	Jun-Mar	B/D	0-5	SP, SP-SM	A-3
					5-23	SM, SP-SM	A-2-4, A-3
					23-47	SP, SP-SM	A-2-4, A-3
					47-59	SC, SC-SM, SM	A-2-4, A-2-6
					59-80	SM, SP-SM	A-2-4, A-3
12	Felda fine sand	0-1.0	Jun-Dec	D	0-3	SP, SP-SM	A-3
					3-26	SP, SP-SM	A-3
					26-34	SC, SC-SM, SM	A-2-4, A-2-6
					34-80	SP, SP-SM	A-2-4
13	Immokalee soils and urban land	0.5-1.5	Jun-Nov	B/D	0-6	SP, SP-SM	A-3
					6-35	SP, SP-SM	A-3
					35-50	SM, SP-SM	A-2-4, A-3
					50-80	SP, SP-SM	A-3
14	Kesson fine sand	0-0.5	Jan-Dec	D	0-5	SP-SM	A-2-4, A-3
					5-26	SP, SP-SM	A-3
					26-42	SP-SM, SP	A-3
					42-80	SP, SP-SM	A-3
16	Urban land	---	Jan-Dec	D	---	---	---
17	Myakka soils and urban land	0.5-1.5	Jun-Oct	B/D	0-4	SP, SP-SM	A-3
					4-22	SP, SP-SM	A-3
					22-36	SM, SP-SM	A-2-4, A-3
					36-80	SP, SP-SM	A-3
22	Pineda soils and urban land	0-1.0	Jun-Oct	B/D	0-4	SP, SP-SM	A-3
					4-37	SP, SP-SM	A-3
					37-55	SC, SC-SM, SM	A-2-4, A-2-6
					55-80	SM, SP, SP-SM	A-2-4, A-3
24	Pits	---	Jan-Dec	---	0-60	---	---
30	Urban land	---	Jan-Dec	---	---	---	---

PINELLAS COUNTY SOIL DATA							
Soil No.	USDA Soil Name	Seasonal High Ground Water		HSG	Soil Classification		
		Depth* (feet)	Duration (months)		Depth (inches)	Unified	AASHTO
31	Wabasso urban land	0.5-1.5	Jun-Oct	B/D	0-5	SP, SP-SM	A-3
					5-26	SP, SP-SM	A-3
					26-36	SM, SP-SM	A-2-4, A-3
					36-50	SC, SC-SM	A-2-4, A-3
					50-80	SM, SP-SM	A-2-4, A-3
32	Wulfert muck	0-0.5	Jan-Dec	D	0-35	PT	---
					35-80	SM, SP-SM	A-2-4, A-3
99	Water	---	---	---	---	---	---
100	Waters of the Gulf of Mexico	---	---	---	---	---	---

APPENDIX D

Standard Protection Measures for the Eastern Indigo Snake

STANDARD PROTECTION MEASURES FOR THE EASTERN INDIGO SNAKE
U.S. Fish and Wildlife Service

March 23, 2021

The eastern indigo snake protection/education plan (Plan) below has been developed by the U.S. Fish and Wildlife Service (USFWS) in Florida and Georgia for use by applicants and their construction personnel. At least **30 days prior** to any clearing/land alteration activities, the applicant shall notify the appropriate USFWS Field Office via e-mail that the Plan will be implemented as described below (North Florida Field Office: jaxregs@fws.gov; South Florida Field Office: verobeach@fws.gov; Panama City Field Office: panamacity@fws.gov; Georgia Field Office: gaes_assistance@fws.gov). As long as the signatory of the e-mail certifies compliance with the below Plan (including use of the attached poster and brochure), no further written confirmation or approval from the USFWS is needed and the applicant may move forward with the project.

If the applicant 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. At least 30 days prior to any clearing/land alteration activities, the applicant 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.

The Plan materials should consist of: 1) a combination of posters and pamphlets (see **Poster Information** section below); and 2) verbal educational instructions to construction personnel by supervisory or management personnel before any clearing/land alteration activities are initiated (see **Pre-Construction Activities** and **During Construction Activities** sections below).

POSTER INFORMATION

Posters with the following information shall be placed at strategic locations on the construction site and along any proposed access roads (a final poster for Plan compliance, to be printed on 11 x 17in or larger paper and laminated, is attached):

DESCRIPTION: The eastern indigo snake is one of the largest non-venomous snakes in North America, with individuals often reaching up to 8 feet in length. They derive their name from the glossy, blue-black color of their scales above and uniformly slate blue below. Frequently, they have orange to coral reddish coloration in the throat area, yet some specimens have been reported to only have cream coloration on the throat.

These snakes are not typically aggressive and will attempt to crawl away when disturbed. Though indigo snakes rarely bite, they should NOT be handled.

SIMILAR SNAKES: The black racer is the only other solid black snake resembling the eastern indigo snake. However, black racers have a white or cream chin, thinner bodies, and WILL BITE if handled.

LIFE HISTORY: The eastern indigo snake occurs in a wide variety of terrestrial habitat types throughout Florida and Georgia. Although they have a preference for uplands, they also utilize some wetlands and agricultural areas and often move seasonally between upland and lowland habitats, particularly in the northern portions of its range (North Florida and Georgia). Eastern indigo snakes will often seek shelter inside gopher tortoise burrows and other below- and above-ground refugia, such as other animal burrows, stumps, roots, and debris piles. Reliance on xeric sandhill habitats throughout the northern portion of the range in northern Florida and Georgia is due to the dependence on gopher tortoise burrows for shelter during winter. Breeding occurs during October through February. Females may lay from 4 - 12 white eggs as early as April through June, with young hatching in late July through October.

PROTECTION UNDER FEDERAL AND STATE LAW: The eastern indigo snake is classified as a Threatened species by both the USFWS and the Florida Fish and Wildlife Conservation Commission. Taking of eastern indigo snakes is prohibited by the Endangered Species Act without a permit is defined by the USFWS as an attempt to kill, harm, harass, pursue, hunt, shoot, wound, trap, capture, collect, or engage in any such conduct. Penalties include a maximum fine of $25,000 for civil violations and up to $50,000 and/or imprisonment for criminal offenses, if convicted.

Only individuals currently authorized through an issued Incidental Take Statement in association with a USFWS Biological Opinion, or by a Section 10(a)(1)(A) permit issued by the USFWS, to handle an eastern indigo snake are allowed to do so.

IF YOU SEE A <u>LIVE</u> EASTERN INDIGO SNAKE ON THE SITE:

- Cease clearing activities and allow the live eastern indigo snake sufficient time to move away from the site without interference;
- Personnel must NOT attempt to touch or handle snake due to protected status.
- Take photographs of the snake, if possible, for identification and documentation purposes. Â
- Immediately notify supervisor or the applicants designated agent, **and** the appropriate USFWS office, with the location information and condition of the snake.
- If the snake is located in a vicinity where continuation of the clearing or construction activities will cause harm to the snake, the activities must halt until such time that a representative of the USFWS returns the call (within one day) with further guidance as to when activities may resume.

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

- Cease clearing activities and immediately notify supervisor or the applicants designated agent, **and** the appropriate USFWS 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.

Telephone numbers of USFWS Florida Field Offices to be contacted if a live or dead eastern indigo snake is encountered:

North Florida Field Office: (904) 731-3336
Panama City Field Office: (850) 769-0552
South Florida Field Office: (772) 562-3909
Georgia Field Office: (706) 613-9493

PRE-CONSTRUCTION ACTIVITIES

1. The applicant or designated agent will post educational posters in the construction office and throughout the construction site, including any access roads. The posters must be clearly visible to all construction staff. A sample poster is attached.

2. Prior to the onset of construction activities, the applicant/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 brochure 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 (a final brochure for Plan compliance, to be printed double-sided on 8.5 x 11in paper and then properly folded, is attached). Â Photos of eastern indigo snakes may be accessed on USFWS and/or FWC or GADNR websites.

3. Construction staff will be informed that in the event that an eastern indigo snake (live or dead) 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 Field Office. The contact information for the USFWS is provided on the referenced posters and brochures.

DURING CONSTRUCTION ACTIVITIES

1. During initial site clearing activities, an onsite observer may be utilized 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).

2. If an eastern indigo snake is discovered during gopher tortoise relocation activities (i.e. burrow excavation), the USFWS shall be contacted within one business day to obtain further guidance which may result in further project consultation.

3. Periodically during construction activities, the applicants designated agent should visit the project area 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.

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. The report can be sent electronically to the appropriate USFWS e-mail address listed on page one of this Plan.

APPENDIX E

Eastern Indigo Snake 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)

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APPENDIX F

Construction Special Conditions for Gulf Sturgeon

CONSTRUCTION SPECIAL PROVISIONS
STURGEON PROTECTION GUIDELINES

The shortnose sturgeon (Acipenser brevirostrum) and the gulf sturgeon (A. oxyrinchus desotoi) are listed under the Endangered Species Act as endangered and threatened, respectively. These species are under the jurisdiction of the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS). In Florida, the lower St Johns River is habitat for shortnose sturgeon. Major portions of the Suwannee and Withlacoochee Rivers are designated as critical habitat for the gulf sturgeon.

The following special provisions will be incorporated into any construction contract where involvement with sturgeon may occur:

The FDOT will coordinate with the NMFS and USFWS early in the project development stage of new bridge projects. All efforts should be made to avoid known spawning habitats, nursery areas, feeding areas and thermal refuges.

1. Advise construction personnel of the potential presence of these species, of their endangered status and federal protection, and of the need to avoid any actions that would jeopardize these species.

2. The Florida Department of Transportation (FDOT) shall advise all FDOT project personnel and Contractor personnel on the project that there are civil and criminal penalties for harming, harassing or killing sturgeon, which are protected under the Endangered Species Act of 1973. The FDOT and the Contractor will be held responsible for any sturgeon harmed, harassed, or killed as a result of the project activity.

3. The FDOT shall provide information to all FDOT and Contract personnel for identification of sturgeon.

4. Appropriate work shift personnel will be instructed in the appearance, habits, biology, migratory patterns, and preservation of sturgeon. At least one of these trained personnel will be on site during construction activities to maintain a constant surveillance for these species, assure the cessation of activities (such as dredging, excess turbidity, and construction barge activity), which may endanger these species, and assure that uninhibited passage for the animals is provided.

5. Post signs on site warning of the presence of sturgeon, of their endangered status, and precautions needed.

6. Turbidity from construction activity will be adequately controlled to prevent degradation of the quality and transparency of the water. When sturgeon are present, turbidity curtains of appropriate dimension will be used to restrict the

animals access to the work area. Pollution booms or turbidity curtains should use tangle resistant or hemp rope when anchoring, or employ surface anchors to prevent entangling sturgeon. Continuous surveillance will be maintained in order to free animals which may become trapped in silt or turbidity barriers.

7. No dredging of the river bottom will be conducted for barge access.

8. Drilled shaft pile construction will be used whenever prudent and feasible as determined by FDOT.

9. Care shall be taken in lowering equipment or material below the water surface and into the stream bed. These precautions will be taken to ensure no harm occurs to any sturgeon which may have entered the construction area undetected.

10. Construction debris shall not be discarded into the water.

11. If the use of explosives is necessary, no blasting will occur during sturgeon spawning season or in known spawning, staging, feeding, or vital nursery areas.

    The following protection measures will be employed for blasting:

    A. For each explosive charge, detonation will **not** occur if a sturgeon is known to be within a circular area ("the danger zone") encompassing the detonation site defined by the following radius:

    $$r = 560(\sqrt[3]{W})$$

    Where: r = radius of danger zone in feet
    W = weight of explosive charge in pounds (tetryl or TNT)

    B. In the event that a sturgeon is killed during blasting, the NMFS and/or the USFWS will be notified immediately.

12. Any dead sturgeon will be secured on site for carcass analysis by notified agency representative.

13. Following completion of the project, a report summarizing any involvement with sturgeon will be prepared for NMFS and/or USFWS.

APPENDIX G

NOAA SERO Protected Species Conditions

PROTECTED SPECIES CONSTRUCTION CONDITIONS, NOAA FISHERIES SOUTHEAST REGIONAL OFFICE

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

   NOAA Fisheries Enforcement Hotline (800) 853-1964

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

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

Revised: May 2021

APPENDIX H

Standard Manatee Conditions for In-Water Work

STANDARD MANATEE CONDITIONS FOR IN-WATER WORK

2011

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

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

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

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

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

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

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

CAUTION: MANATEE HABITAT

All project vessels

IDLE SPEED / NO WAKE

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

SHUT DOWN

Report any collision with or injury to a manatee:

Wildlife Alert:

1-888-404-FWCC(3922)

cell *FWC or #FWC

APPENDIX I

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 J

Wood Stork Effect Determination Key

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

Purpose and Background

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

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

Scope of the key

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

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

impacts to wood storks and/or suitable wood stork foraging habitat. Projects that key to a "no effect" determination do not require additional consultation or coordination with the JAFL. Projects that key to "NLAA" also do not need further consultation; however, the JAFL staff will assist the Corps if requested, to answer questions regarding the appropriateness of mitigation options. Projects that key to a "may affect" determination equate to "likely to adversely affect" situations, and those projects should not be processed under the SPGP or any other programmatic general permit. For all "may affect" determinations, Corps Project Managers should request the JAFL to initiate formal consultation on the Wood stork.

Summary of General Wood Stork Nesting and Foraging Habitat Information

The wood stork is primarily associated with freshwater and estuarine habitats that are used for nesting, roosting, and foraging. Wood storks typically nest colonially in medium to tall trees that occur in stands located either in swamps or on islands surrounded by relatively broad expanses of open water (Ogden 1991; Rodgers et al. 1996). Successful breeding sites are those that have limited human disturbance and low exposure to land based predators. Nesting sites protected from land-based predators are characterized as those surrounded by large expanses of open water or where the nest trees are inundated at the onset of nesting and remain inundated throughout most of the breeding cycle. These colonies have water depths between 0.9 and 1.5 meters (3 and 5 feet) during the breeding season.

In addition to limited human disturbance and land-based predation, successful nesting depends on the availability of suitable foraging habitat. Such habitat generally results from a combination of average or above-average rainfall during the summer rainy season, and an absence of unusually rainy or cold weather during the winter-spring breeding season (Kahl 1964; Rodgers et al. 1987). This pattern produces widespread and prolonged flooding of summer marshes that tends to maximize production of freshwater fishes, followed by steady drying that concentrate fish during the season when storks nest (Kahl 1964). Successful nesting colonies are those that have a large number of foraging sites. To maintain a wide range of foraging opportunities, a variety of wetland habitats exhibiting short and long hydroperiods should be present. In terms of wood stork foraging, the Service (1999) describes a short hydroperiod as one where a wetland fluctuates between wet and dry in 1 to 5-month cycles, and a long hydroperiod where the wet period is greater than five consecutive months. Wood storks during the wet season generally feed in the shallow water of short-hydroperiod wetlands and in coastal habitats during low tide. During the dry season, foraging shifts to longer hydroperiod interior wetlands as they progressively dry down (though usually retaining some surface water throughout the dry season).

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

regimes ranging from dry to wet. The vegetative component provides nursery habitat for small fish, frogs, and other aquatic prey, and the shallow, open-water areas provide sites for concentration of the prey during daily or seasonal low water periods.

WOOD STORK KEY

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

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

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

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

Project impacts SFH[2]……go to C

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

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

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

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

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

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

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

[2] Suitable foraging habitat (SFH) is described as any area containing patches of relatively open (< 25% aquatic vegetation), calm water, and having a permanent or seasonal water depth between 2 and 15 inches (5 to 38 cm). SFH supports and concentrates, or is capable of supporting and concentrating small fish, frogs, and other aquatic prey. Examples of SFH include, but are not limited to, freshwater marshes and stock ponds, shallow, seasonally flooded roadside or agricultural ditches, narrow tidal creeks or shallow tidal pools, managed impoundments, and depressions in cypress heads and swamp sloughs. See above *Summary of General Wood Stork Nesting and Foraging Habitat Information*.

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

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

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

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

Monitoring and Reporting Effects

For the Service to monitor cumulative effects, it is important for the Corps to monitor the number of permits and provide information to the Service regarding the number of permits issued that were determined "may affect, not likely to adversely affect." It is requested that information on date, Corps identification number, project acreage, project wetland acreage, and latitude and longitude in decimal degrees be sent to the Service quarterly.

Literature Cited

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

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

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

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

APPENDIX K

UMAM Summary Sheet

MODIFIABLE SUMMARY TABLE

Site/Project Name:	Application Number:	Date:
SR 600 / Gandy Boulevard PD&E Study		December 1, 2022

Impact Summary

	Assessment Area	Impact Type	Location and Landscape Support		Water Environment		Community Structure		Impact Delta	Acres	Functional Loss
			Current	w/Impact	Current	w/Impact	Current	w/Impact			
1	WL 4	Direct	7	0	7	0	7	0	0.70	0.06	0.042
2	WL 4	Secondary	7	5	7	7	7	5	0.13	0.09	0.012
3	WL 6	Direct	7	0	7	0	7	0	0.70	3.85	2.695
4	WL 6	Secondary	7	5	7	7	7	5	0.13	2.74	0.365
5	WL 7	Direct	7	0	7	0	7	0	0.70	0.36	0.252
6	WL 7	Secondary	7	5	7	7	7	5	0.13	0.13	0.017
7	WL 8	Direct	7	0	7	0	7	0	0.70	2.44	1.708
8	WL 8	Secondary	7	5	7	7	7	5	0.13	1.06	0.141
9	SW 4	Direct	8	0	8	0	8	0	0.80	0.21	0.168
10	SW 9	Direct	7	0	7	0	0	0	0.47	0.15	0.070
11	SW 11	Direct	7	0	7	0	0	0	0.47	0.03	0.014
12	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-
								TOTAL		11.12	5.484

Mitigation Summary

	Assessment Area	Mitigation Type	Location and Landscape Support		Water Environment		Community Structure		Mitigation Delta	Time Lag	Risk	PAF	RFG	Acres	Functional Gain
			w/o Mit	w/Mit	w/o Mit	w/Mit	w/o Mit	w/Mit							
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
													TOTAL	0.00	0.000

TEMPORAL LAG TABLE

YEAR	T-factor	YEAR	T-factor	YEAR	T-factor
< or = 1	1	11-15	1.46	41-45	3.03
2	1.03	16-20	1.68	46-50	3.34
3	1.07	21-25	1.92	51-55	3.65
4	1.10	26-30	2.18	>55	3.91
5	1.14	31-35	2.45		
6-10	1.25	36-40	2.73		

TOTALS

Impacts	Acres	Mitigation - Upland	Acres	Mitigation - Wetland	Acres
				Creation	0.00
		Restoration	0.00	Restoration	0.00
Direct Impacts	0.00	Enhancement	0.00	Enhancement	0.00
Secondary Impacts	0.00	Preservation	0.00	Preservation	0.00
Total Impacts	**0.00**	**Total Upland Mitigation**	**0.00**	**Total Wetland Mitigation**	**0.00**

Total Functional Loss	**5.484**
Total Functional Gain	**0.000**
Mitigation Deficit	**-5.484**