STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION TECHNICAL REPORT COVERSHEET

NATURAL RESOURCES EVALUATION REPORT

Florida Department of Transportation

District 1

SR 31 PD&E Study

Limits of Project: SR 80 (Palm Beach Boulevard) to SR 78 (Bayshore Road)

Lee County, Florida

Financial Management Number: 441942-1-22-01

ETDM Number: 14359

Date: September 25, 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.

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Executive Summary

The Florida Department of Transportation (Department) is conducting a Project Development and Environment (PD&E) Study to evaluate roadway improvement alternatives for State Road (SR) 31 from Palm Beach Boulevard (SR 80) to Bayshore Road (SR 78) in Lee County, Florida. The improvements consist of widening the existing two-lane roadway to a six-lane urban facility, the replacement of the Wilson Pigott Bridge, and intersection improvements to SR 80, for a project length of approximately 1.4 miles. Additionally, the improvements include raising the profile above the current 100-year floodplain and shifting the northern segment of the roadway 300 feet east on the north side of the Wilson Pigott Bridge to minimize impacts to the existing Florida Gas Transmission (FGT) line.

The purpose of this Natural Resources Evaluation (NRE) is to document protected species and their habitat within the study area, analyze potential impacts to those protected species and habitats from the Preferred Alternative, provide support for protected species effect determinations, evaluate wetland and surface water impacts from the Preferred Alternative, identify mitigation needs, and consult with federal and state regulatory and resource agencies. The NRE is prepared in accordance with Wetlands and Other Surface Waters, Protected Species and Habitat, and Essential Fish Habitat (EFH), of the FDOT PD&E Manual (2020) and the Natural Resources Evaluation Outline and Guidance (2020). Based on coordination with the United States Coast Guard (USCG), a navigational survey will not be required for the proposed replacement of Wilson Pigott Bridge, however, a bridge permit will be required during the design and permitting phase.

Pursuant to the Endangered Species Act (ESA), federally listed species with moderate or high potential to occur within the study area that may be affected by the Preferred Alternative are summarized in **Table ES-1**. The study area occurs within critical habitat for the west Indian manatee (*Trichechus manatus*) and smalltooth sawfish (*Pristis pectinata*); it is anticipated that the Preferred Alternative will result in "**no destruction or adverse modification**" of both species' critical habitat. The Department will initiate Section 7 consultation with the United States Fish and Wildlife Service (USFWS) for potential impacts to federally protected species through the review of this NRE.

Protecte	d Species	Effect Determination
Common Name	Scientific Name	
FISH		
Smalltooth sawfish	Pristis pectinata	"May affect, not likely to adversely affect"
REPTILES		
Eastern indigo snake	Drymarchon couperi	"May affect, not likely to adversely affect"
Green sea turtle	Chelonia mydas	"May affect, not likely to adversely affect"
Hawksbill sea turtle	Eretmochelys imbricata	"May affect, not likely to adversely affect"
Leatherback sea turtle	Demorchelys coriacea	"May affect, not likely to adversely affect"
Loggerhead sea turtle	Caretta caretta	"May affect, not likely to adversely affect"
BIRDS		
Audubon's crested caracara	Polyborus plancus audubonii	"May affect, not likely to adversely affect"

Table ES-1:	Summary of	Federally	Listed Species	and Anticipated	Effect Determinations
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Protecte	d Species	Effect Determination	
Common Name	Scientific Name	Effect Determination	
Wood stork Mycteria americana		"May affect, not likely to adversely affect"	
MAMMALS			
Florida bonneted bat	Eumops floridanus	"May affect, + further coordination"	
West Indian manatee	Trichechus manatus	"May affect, not likely to adversely affect"	

The Preferred Alternative will directly and indirectly impact 27.76 acres of wetlands and surface waters: 22.60 acres of direct impacts and 5.16 acres of indirect impacts. Based on the Uniform Mitigation Assessment Method (UMAM), the 20.48 acres of direct and indirect wetland impacts may require 1.23 estuarine mangrove credits and 7.86 freshwater forested credits from an approved wetland mitigation bank or equivalent regional mitigation area (**Table ES-2**).

Habitat Type	FLUCFCS Code	Direct and Indirect Impacts (ac)	Functional Loss
Estuarine Mangrove	6120	1.88	1.23
Freshwater Forested	6170, 6210, 6310	18.60	7.86
Surface Water	5110, 5120, 5140	7.28	-

 Table ES-2: Anticipated Habitat Impacts and Functional Loss

Unavoidable wetland impacts will be mitigated pursuant to Section 373.4137, Florida Statutes (FS), to satisfy all mitigation requirements of Part IV of Chapter 373, FS and 33 United States Code (USC) § 1344. The project area is located within the service area of the Little Pine Island Mitigation Bank (LPIMB). LPIMB is located within the Charlotte Harbor Aquatic Preserve and Matlacha Pass Aquatic Preserve with a direct hydrologic connection to the Caloosahatchee River and provides habitat for many of the same species that may occur in the project area for this study. LPIMB provides estuarine and palustrine credits to satisfy "type-for-type" United State Army Corps of Engineers (USACE) and South Florida Water Management District (SFWMD) mitigation requirements.

The proposed project is located within the jurisdiction of the Gulf of Mexico Fishery Management Council. Essential Fish Habitat (EFH) for several managed fisheries is located in the project area and includes mangrove swamps; estuarine water column; and mud sand, shell, and rock substrates. While the Preferred Alternative will directly and indirectly impact 1.88 acres of EFH, compensatory mitigation will be provided through the purchase of credits from LPIMB. In addition, design measures and best management practices during construction will be implemented to prevent runoff and sediment entering estuarine and marine habitats. An EFH assessment is included as part of this NRE to address direct and indirect impacts to EFH. Based on this assessment and proposed mitigation, the Department has determined the project would have "**more than minimal but less than substantial**" potential for adverse effects to EFH. Consultation with NMFS for potential EFH impacts is anticipated.

1.0 PROJECT OVERVIEW

The FDOT, District One (Department) is conducting a Project Development and Environment (PD&E) Study in accordance with the National Environmental Policy Act (NEPA) to evaluate capacity, operational, structural, and modal improvements to about 1.4 miles of State Road (SR) 31 from SR 80 (Palm Beach Boulevard) to SR 78 (Bayshore Road) in northeastern Lee County (see **Figure 1**). The study includes the evaluation of capacity improvements to its current two-lane configuration, as well as pedestrian and bicycle accommodations. The study also includes evaluating repair/rehabilitation and replacement options for the Wilson Pigott Bridge over the Caloosahatchee River and improvement alternatives for the SR 31/SR 80 intersection.

The Department is coordinating with adjacent studies, including the SR 78 PD&E Study, the SR 31 North Design-Build project, and the pending Babcock Ranch development.

1.1 Existing Facility and Conditions

SR 31 in the project study area is classified by the Department as an Urban Minor Arterial. SR 31 is considered an Emerging Strategic Intermodal System (SIS) Corridor. The existing typical section is a two-lane, undivided rural roadway with two 12-foot travel lanes and 5-foot paved outside shoulders centered within a 100-foot right-of-way. The existing bridge is a 14-span low-level bascule structure with 10-foot lanes, 4-foot outside shoulders, and 3.5-foot raised sidewalks on both sides with no separation from motor vehicles. The existing vertical clearance over the channel is 26 feet.

The posted speed limit in this section of SR 31 is 40 mph. The surrounding land uses are a mixture of rural residential, commercial, and undeveloped land. The Lee County Future Land Use map (as of January 2022) reveals that most of the study area is zoned as "Future Urban Areas-Suburban". "Sub-Outlying Suburban", "Non-Urban Areas-Rural", and "Environmentally Critical Areas-Wetlands" designations are also in the project vicinity.

Stormwater runoff is collected in open drainage swales adjacent to the roadway with ultimate outfall to the Caloosahatchee River. SR 31 has no existing stormwater management facilities. The project is located within WBID 3240C, which is impaired for Nutrients. There are four cross drains within the project limits.

1.2 Purpose and Need

The purpose of the project is to address capacity, operational, and structural deficiencies of SR 31 from SR 80 (Palm Beach Boulevard) to SR 78 (Bayshore Road) in northeastern Lee County. To meet future travel demand, the project will evaluate potential widening improvements to its current two-lane configuration, including paved shoulders, sidewalks, bike lanes, and/or a multi-use pathway. Repair/rehabilitation and replacement options for the Wilson Pigott Bridge will also be evaluated as part of the project, as design elements of the bridge are substandard.

The need for the project is based on the following primary and secondary criteria:

1.2.1 Primary Criteria

Capacity/Transportation Demand: Improve Operational Conditions

The existing year [2022] Annual Average Daily Traffic (AADT) volume for the SR 31 project corridor is 16,600 vehicles per day (vpd), operating at Level of Service (LOS) C. As SR 31 is a designated highway corridor of Florida's Emerging SIS and a Tier I Freight Corridor of Lee County, approximately 25% of existing traffic along the roadway is composed of trucks. The SIS network includes the state's most significant transportation facilities, as these facilities carry the highest volumes of freight and commuter traffic. The projected demand along the corridor exceeds the maximum threshold of 20,000 AADT for a two-lane facility. As an Emerging SIS facility, LOS D is the minimum acceptable LOS for SR 31. Without capacity improvements, the corridor is projected to operate at LOS F.

Much of the growth contributing to the increase in traffic comes from the Babcock Ranch Development of Regional Impact (DRI) located to the north of the SR 31 project segment. Although the Babcock Ranch DRI is in Charlotte County, some development is expected to occur in Lee County, such as the Babcock Ranch Mixed-use Planned Development (MPD) and a marina to be sited northeast of the project corridor. The Babcock Ranch DRI and MPD is approved for 19,500 residential dwelling units, almost 5 million square feet of office and retail space, and 600 hotel rooms. In addition, the DRI is approved for 650,000 square feet of industrial space, which will further increase the volume of trucks moving freight along the corridor. Also, eight Planned Unit Development southeast of SR 31 and SR 80 (Palm Beach Boulevard). The Sweetwater Landing Marina, located along the corridor, has expanded operations.

Increased congestion along SR 31 between SR 80 (Palm Beach Boulevard) and SR 78 (Bayshore Road) is anticipated due to this noted growth. Conditions along the roadway will be exacerbated if no improvements occur, as the roadway lacks the operational capacity to accommodate future travel demand. In addition, freight traffic and multimodal activity are expected to increase along the corridor due to the projected growth in the area.

Substandard Bridge Elements: Address Mechanical Malfunctions & Design Deficiencies

The Wilson Pigott Bridge was constructed in 1960 and has exceeded its fifty-year design life. Based on a FDOT bridge inspection report conducted in October 2021, the Wilson Pigott Bridge received a sufficiency rating of 52.0 (on a scale of 0-100). Sufficiency rating is essentially an overall rating of a bridge's fitness to remain in service. A sufficiency rating below 50.0 qualifies a bridge for replacement funds. The bridge inspection report also revealed a health index of 95.52 for the Wilson Pigott Bridge. The health index uses the condition rating of several important bridge components to develop a number from 1 to 100. The lower the number, the more work is required to improve the bridge's overall condition. Below 85 generally means repairs are needed. A low health index may also indicate that it would be more economical to replace the bridge than to repair it. Additionally, an interview conducted with Lee County Metropolitan Planning Organization (MPO) staff in February 2018 indicated that the Wilson Pigott Bridge frequently experiences mechanical malfunctions leaving the bascule span in the up position, disrupting traffic flow and circulation in the area.

Although the current bridge inspection indicating a health index over 90 due to most recent bridge repairs, the bridge has substandard design elements, including:

- Narrow roadway widths [ten-foot travel lanes and four-foot shoulders]
- Narrow pedestrian facilities [three-foot six-inch sidewalks on both sides with no guardrail separating pedestrians and motor vehicles]
- Substandard bridge rails

As the Caloosahatchee River is a navigable waterway, the United States Coast Guard (USCG) regulates the horizontal and vertical clearance requirements for bridges constructed over navigable waters. The following minimum movable bridge clearance guidelines for the Caloosahatchee River at the project location are: Horizontal Clearance = 90 feet; Vertical Clearance (closed) = 21 feet. The vertical clearance for the Wilson Pigott Bridge (closed) is 26 feet at the center and 23 feet at the fenders, and the horizontal clearance is 86.6 feet. Based on this condition, the Wilson Pigott Bridge does not meet the current USCG guide for horizontal clearance.

1.2.2 Secondary Criteria

Area Wide Network/System Linkage: Enhance Regional Connectivity

Planned immediately north of the SR 31 project segment is the widening of SR 31 from SR 78 (Bayshore Road) in Lee County to North of Cook Brown Road in Charlotte County. The proposed widening of SR 31 from SR 80 (Palm Beach Boulevard) to SR 78 (Bayshore Road) will provide a continuous connection from Lee County into Charlotte County and a viable north-south alternate route to I-75.

Safety: Improve Emergency Evacuation and Response Times

Serving as part of the emergency evacuation route network designated by the Florida Division of Emergency Management and Lee County, SR 31 [including the Wilson Pigott Bridge] plays a critical role in facilitating traffic during emergency evacuation periods as one of seven crossings over the Caloosahatchee River within Lee County. The project is in Lee County's Evacuation Zone "A", and all the neighborhoods in proximity to the project corridor are within the 100-year floodplain. Improving the operational capacity of the roadway and maintaining the functionality of the Wilson Pigott Bridge will further enhance emergency evacuation efficiency leading to improved evacuation and response times.

1.3 Alternatives

An alternatives analysis process consists of developing, evaluating, and eliminating potential project alternatives (including the No-Build option), based on the purpose and need for the project. This process also considers the engineering and environmental factors, along with public and stakeholder input. The Preferred Alternative is presented in this document.

1.3.2 Preferred Alternative

The Preferred Alternative consists of the following:

- Widen the existing two-lane undivided roadway to a six-lane divided roadway from SR 80 to SR 78
- Replace the Wilson Pigott Bridge over the Caloosahatchee River
- Improvements to the SR 31/SR 80 intersection

The Preferred Alternative will consist of widening the two-lane roadway to six lanes. The proposed SR 31 roadway typical section from SR 80 to SR 78 will include three, 11-foot travel lanes in each direction separated by a 22-foot raised median with type E and F curb along the inside and outside lanes, respectively. A 12-foot shared-use path is proposed on each side of SR 31 (northbound and southbound) with a 9-foot utility strip between the back of curb and path. This typical section will require approximately 32 acres of new right-of-way.

The Preferred Alternative is a combination of widening existing SR 31 from SR 80 for about 0.7 miles, then shifting 300 feet east prior to the Wilson Pigott Bridge to minimize impacts to the existing Florida Gas Transmission (FGT) line; this roadway segment will be located east of the existing two-lane roadway and the 50-foot FGT easement. The project will tie into the proposed SR 31 North Design-Build project at the northern terminus.

The proposed design speed for the project is 45 miles per hour. The Preferred Alternative raises the profile above the current 100-year floodplain. The profile will be raised approximately three feet above existing SR 31 due to the updated 100-year floodplain elevation (from seven feet to ten feet) in the project corridor.

A new high-level fixed bridge will be constructed to replace the existing Wilson Pigott Bridge. The proposed bridge will meet USCG vertical clearance requirements of 55 feet for a high-level fixed bridge.

The Preferred Alternative also includes reconfiguring the existing intersection of SR 31/SR 80 to a grade-separated intersection. The grade-separation would introduce two new flyover bridges for SR 31 and SR 80 movements and would also include a new signal on SR 31.

Stormwater runoff from the project will be collected and conveyed in closed drainage systems to one proposed offsite pond for water quality treatment and attenuation per state and federal requirements. The pond will discharge at or near the same outfall ditch that carry the roadway runoff in the existing condition. In addition to the 32 acres of new right-of-way needed for the proposed SR 31 roadway typical section from SR 80 to SR 78, 13.5 acres of new right-of-way will be required for the proposed pond and associated access easements.

1.4 Study Area

The study area is approximately 245 acres, and it includes areas within 200 feet of the proposed alternatives and SR 80 intersection improvements (**Figure 1**).



1.5 Existing Conditions

1.5.1 Land Use

The land uses within the SR 31 PD&E study area were defined using the South Florida Water Management District (SFWMD) Florida Land Use, Cover, and Forms Classification System (FLUCFCS) Geographical Information System (GIS) data (2019) and further categorized using the United States Fish & Wildlife Service (USFWS) National Wetlands Inventory (NWI) Wetlands Mapper. The SFWMD data does not include the existing roadways (SR 31 and SR 80), which would be labeled as Transportation (FLUCFCS 8100).

The study area is largely undeveloped and contains a mix of upland forests, wetlands, open water, shrub and brush land, and unimproved pastures. Commercial development and residential housing are primarily located near the SR 31 and SR 80 (Palm Beach Blvd.) intersection. The USFWS NWI Wetlands Mapper identifies the Caloosahatchee River as Estuarine and Marine Deepwater habitat (E1UBL – estuarine, subtidal, unconsolidated bottom). **Table 1** and **Figure 2** provide field verified information about each land use within the study area.

FLUCFCS Code		FLUCFCS Description	Area (Acres)	Site Description
	1110	Low Density, Fixed Single Family Unit	7.88	Fixed homes with at least two dwellings per acre located along SR 31, north of Palm Beach Blvd.
	1210	Medium Density, Fixed Single Family Units	1.54	Fixed homes with two to five dwellings per acre located at the eastern end of Palm Beach Blvd.
	1310	High Density, Fixed Single Family Units	3.33	Six or more fixed homes per acre located at the southwest end of Palm Beach Blvd.
1000s	1400	Commercial and Services	20.17	Commercial businesses located at the intersection of SR 31 and Palm Beach Blvd.
	1820	Golf Courses	5.36	Verandah Golf Club is located at the southeast end of Palm Beach Blvd.
	1840	Marinas and Fish Camps	6.38	Sweetwater Landing Marina located on the western side of SR 31 adjacent to the Caloosahatchee River.
	1900	Open Land	5.48	Disturbed lands without street pattern and structures located along Palm Beach Blvd.
2000s	2120	Unimproved Pastures	14.01	Cleared land with stands of tree and brush located on the northern portion of the study area, north of the bridge.
	2410	Tree Nurseries	4.58	Ornamental tree nursery located to the north of Palm Beach Blvd and west of SR 31.
2000.	3100	Herbaceous (Dry Prairie)	18.45	Upland grasslands located to the north of Palm Beach Blvd and west of SR 31.
30008	3200	Upland Shrub and Brushland	12.81	Shrub lands distributed throughout the study area.
4000s	4200	Upland Hardwood Forests	2.96	Hardwood upland forest located on along the eastern side of SR 31.
	4340	Upland Mixed- Coniferous/Hardwood	9.45	Conifer and hardwood upland forests located on along the eastern side of SR 31.
5000s	5110	Natural River, Stream, Waterway	23.35	Canals, ditches, and the Caloosahatchee River.

Table 1: FLUCFCS within the Study Area

FLUCFCS	Code	FLUCFCS Description	Area (Acres)	Site Description
	5120	Channelized Waterways, Canals	3.13	Constructed stormwater ponds, floodplain compensation areas, or other man-made water features located near the marina on the northern end of SR 31.
	5140	Upland Cut Ditch	3.02	Upland cut ditches along Palm Beach Blvd.
	5300 Reservoirs 2.85 Storm		Stormwater pond at the Verandah Golf Club	
	6120	Mangrove Swamps	11.40	Wetlands dominated by mangroves adjacent to the Caloosahatchee River.
6000s	6170	Mixed Wetland Hardwoods	34.90	Mixed tree and shrub wetlands located along the east and west sides of SR 31. This is the most dominant wetland type in the study area.
	6210	Cypress	1.42	Communities dominated by pond or bald cypress located along Palm Beach Blvd near the Verandah Golf Club.
	6310	Wetland Scrub	17.12	Topographic depressions and poorly drained soils dominated by willows and other low scrub located in the pond site of SR 31.
	8140	Roads and Highways	31.10	SR 31 and Palm Beach Blvd
8000s	8300	Utilities	1.37	Easement for access to pump stations
	8320	Electrical Power Transmission Lines	3.05	Electric supply transmission corridors that transect across Palm Beach Blvd.



1.5.2 Soils

The *Soil Survey of Lee County, FL* (NRCS, 2021) was reviewed to determine the soil types and characteristics within the study area. According to the soil survey, there are 12 different soil types located within the study area with the majority of these classified as Hydrologic Soil Group (HSG) Type B or D soils. HSG B consists of moderately deep or deep, moderate to well drained soils that have a moderately fine to course texture. HSG D consists of soils with permanently high water tables and often indicative of wetlands or depressions. These types of soils are poorly to very poorly drained soils with high water tables. **Table 2** lists and summarize the soil types mapped with the study area, and **Figure 3** depicts the location the soils mapped within the study area.

Map Unit ID	Map Unit Name	Area (Acres)	Hydrologic Group	Hydric (Yes/No)	Drainage Class	Soil Type Location
6	Hallandale Fine Sand, Wet, 0-2% slopes	5.30	B/D	Yes	Poorly drained	Central part of SR 31
7	Matlacha Gravelly Fine Sand-Urban Land Complex, 0-2% slopes	18.32	В	No	Somewhat poorly drained	Northern end of SR 31 near the marina
11	Myakka Fine Sand, 0-2% slopes	3.37	A/D	No	Poorly drained	West side of SR 31
23	Wulfert Muck, Tidal, 0- 1% slopes	11.00	A/D	Yes	Very poorly drained	Northern side of the pond site for SR 31
33	Oldsmar Sand, 0-2% slopes	11.11	A/D	No	Poorly drained	Northeast side of Palm Beach Blvd.
35	Wabasso Sand, 0-2% slopes	14.92	C/D	No	Poorly drained	Intersection of SR 31 and Palm Beach Blvd.
36	Immokalee Sand-Urban Land Complex, 0-2% slopes	47.38	B/D	No	Poorly drained	Majority of Palm Beach Blvd.
42	Wabasso Sand-Limestone Substratum, 0-2% slopes	8.33	C/D	No	Poorly drained	Central part of SR 31
45	Copeland Fine Sandy Loam, Frequently Ponded, 0-1% slopes	30.5	D	Yes	Very poorly drained	Central part of SR 31
99	Water	26.00	N/A	N/A	N/A	Caloosahatchee River
125	Oldsmar Sand-Urban Land, 0-2% slopes	6.48	A/D	No	Poorly drained	Southwest end of Palm Beach Blvd.
144	Caloosa Fine Sand, 0-2% slopes	62.40	А	No	Somewhat poorly drained	Northern side of the Caloosahatchee River and in the pond site

•	Table 2:	Soils	within	the	Study	Area
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PID:	4419	942-1	-22-	01

DATE:

May 2023

DRAWN BY:

R. Schmidt

PROJECT #

18-0080.000

Lee County, FL

DATA SOURCE: Imagery: ESRI 2022

1.5.3 Public and Other Conservation Lands

According to the Florida Natural Areas Inventory (FNAI) Florida Conservation Lands (2022) GIS data, there are no public or conservation lands within the study area. However, just west of the study area, along the Caloosahatchee River, two locally managed conservation lands occur.

The Caloosahatchee Creeks Preserve is located on the northern shoreline of the Caloosahatchee River approximately 1.5 miles downstream from the Wilson Pigott Bridge. It consists of over 1,300 acres of managed habitat including wetland, hammock, and pine flatwood ecosystems.

The Caloosahatchee National Wildlife Refuge (NWR) is a 40-acre property managed within the larger J.N. "Ding" Darling NWR Complex located approximately two miles downstream from the Wilson Pigott Bridge. The Caloosahatchee NWR is comprised of mangrove islands on the Caloosahatchee River near Interstate 75 in Lee County. This NWR is adjacent to the Florida Power and Light (FPL) Orange River Power Plant, which generates warm water discharges that attract and provide wintering refuge for West Indian manatees (*Trichechus manatus*).

Additionally, Lee County Parks and Recreation leads a program called Conservation 20/20 that was established in 1996 through voter approval. Conservation 20/20 is a land acquisition and stewardship program with the goal to protect natural areas in Lee County for the benefit of future generations in Southwest Florida. A review of the Lee County GIS data for Conservation 20/20 (2022) found four parcels nominated for protection; however, all were subsequently withdrawn from consideration (**Figure 4**).

1.5.4 Other Natural Features

The Caloosahatchee River is a tidally influenced waterway connected to the Gulf of Mexico to the west and is an important link in the Okeechobee Waterway. This waterway is considered stateowned Sovereign Submerged Lands (SSL) by the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida (Board of Trustees) and is administered by the Florida Department of Environmental Protection (FDEP).

The FDEP published a Basin Management Action Plan (BMAP) for the Caloosahatchee Estuary Basin (2012) that identifies water quality treatment standards in order to meet restoration goals within the basin. The BMAP covers the entire study area. Based on the presence of sensitive features within the study area, stormwater design will follow the guidance within the SFWMD Environmental Resource Permit (ERP) Applicant Handbook. This information is discussed further in the Pond Siting Report (PSR).



2.0 PROTECTED SPECIES AND HABITAT

2.1 Introduction

Protected species refers to plant and animal species that are protected by law, regulation or rule. The protected species and habitat discussed in this document include those listed in accordance with the Endangered Species Act of 1973 (ESA), as amended (50 Code of Federal Regulations (CFR) 17); critical habitat as defined in the ESA (16 United States Code (USC) § 1532); Chapter 68A-27, Florida Administrative Code (FAC), Florida Endangered and Threatened Species List; Chapter 5B-40, FAC, Regulated Plant Index; and United States Migratory Bird Act, the Bald and Golden Eagle Protection Act.

The USFWS South Florida Ecological Field Office and the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS) Southeast Regional Office will be consulted for potential impacts to federally protected species per Section 7 of the ESA. For state-protected species, the Florida Fish and Wildlife Conservation Commission (FWC) oversees protection of listed wildlife and the Florida Department of Agriculture and Consumer Services (FDACS) oversees the protection of native plants.

The analysis conducted and documented within this report is consistent with the PD&E Manual Protected Species and Habitat chapter and current Natural Resources Evaluation Outline and Guidance.

2.2 Data Collection and Field Surveys

Prior to field reviews, ecologists performed a GIS database and literature review to identify protected species or habitat documented within and adjacent to the study area. Referenced materials included the following data sources:

- Current and historical aerial photography;
- USFWS consultation area GIS data layers;
- USFWS Information for Planning and Consultation (IPaC) website (accessed 2023).
- USFWS and NOAA critical habitat maps and GIS layers;
- USFWS Wood Stork Core Foraging Habitat data (2019);
- FWC Wildlife Observations:
 - Eagles Nest Locations (2021);
 - Black Bear Road Mortality (2022);
 - Black Bear Related Calls (2022);
 - Manatee Synoptic Survey Observations (2021);
 - Manatee Carcass Recovery Locations (2022);
 - Sea Turtle Strandings (2022); and
 - Wading Bird Rookeries (2020).
- FWC Historical Waterbird Colony Locator (accessed 2023);
- FWC State Manatee Protection Zones in Florida (2022);
- FWC Critical Wildlife Areas (2022);
- Audubon's Center for Birds and Prey EagleWatch Program (2023)

• Efficient Transportation Decision Making (ETDM) Summary Report #14359 – SR 31 Wilson Pigott Bridge (2019).

A preliminary programming screen was prepared for the project. Environmental Technical Advisory Team (ETAT) representatives reviewed project information and provided comments about potential direct and indirect effects to resources under their jurisdiction. Additionally, they selected a Degree of Effect (DOE) for each alternative and issue. According to the ETDM Summary Report No. 14359, dated February 19, 2019, the USFWS, FWC and SFWMD indicated the project alternatives may create a "moderate" DOE on wildlife and habitat resources. These agencies expressed concerns for several federally and state-protected species and their habitat (discussed below). FDACS didn't identify any issues or potential project effects related to wildlife and habitat. These species are discussed in detail in the following sections. **Table 3** lists protected species with the potential to occur within the region of the study area. Based on the field reviews conducted by ecologists between June 2020 to April 2023, the potential of species' occurrence within the study area was classified as "low," "moderate," "high," or "observed":

- Low: Species has been documented in the county, but there are no documented occurrences near the study area and the study area lacks suitable habitat.
- Moderate: Species has been documented in the county and potentially suitable habitat occurs in the study area; however, the species was not observed.
- High: Species has been documented in and/or near the study area and suitable habitat occurs in the study area; however, the species was not observed.
- Observed: Species was observed within or near the study area during the field review.

Species assigned with "low" potential of occurrence are not described further unless the study area occurs within the USFWS Consultation Area of that species. Protected species occurrences (GIS database search and field review observations) are depicted **Figure 5**. Marine species managed by NMFS are discussed in further detail in Section 4.0.

Protected Species		Jurisdictio	Jurisdictional Agency	
Common Name	Scientific Name	USFWS/ NMFS	FWC/ FDACS	Occurrence
FISH				
Gulf sturgeon	Acipenser oxyrinchus desotoi	Т	Т	Low
Smalltooth sawfish	Pristis pectinata	Е	Е	Moderate
REPTILES				
American crocodile	Crocodylus acutus	E	Т	Low
Eastern indigo snake	Drymarchon couperi	Т	Т	Moderate
Gopher tortoise	Gopherus polyphemus	-	Т	Moderate
Florida pine snake	Pituophis melanoleucus mugitus	-	Т	Low
Green sea turtle	Chelonia mydas	Т	Т	Moderate
Hawksbill sea turtle	Eretmochelys imbricata	Е	Е	Moderate
Leatherback sea turtle	Demorchelys coriacea	Е	Е	Moderate
Loggerhead sea turtle	Caretta caretta	Т	Т	Moderate

Table 3: Protected Species within the Region and Their Potential for Occurrence within the Study
Area

Protected Species		Jurisdictional Agency		Detential of
Common Name	Scientific Name	USFWS/	FWC/	Occurrence
	Scientific Maine	NMFS	FDACS	
	BIRDS		_	_
American oystercatcher	Haematopus palliatus	-	T	Low
Audubon's crested caracara	Polyborus plancus audubonii	E	Т	Moderate
Black skimmer	Rynchops niger	-	T	Low
Bald eagle	Haliaeetus leucocephalus	BGEPA & MBTA*	68A- 16.002, FAC*	Moderate
Snail kite	Rostrhamus sociabilis plumbeus	Е	Е	Low
Florida burrowing owl	Athene cunicularia floridana	-	Т	Low
Florida grasshopper sparrow	Ammodramus savannarum floridanus	E	E	Low
Florida sandhill crane	Antigone canadensis pratensis	-	Т	Moderate
Florida scrub-jay	Aphelocoma coerulescens	Т	Т	Low
Least tern	Sternula antillarum	-	Т	Moderate
Little blue heron	Egretta caerulea	-	Т	Moderate
Piping plover	Charadrius melodus	Т	Т	Low
Red-cockaded woodpecker	Picoides borealis	E	E	Low
Reddish egret	Egretta rufescens	-	Т	Moderate
Red knot	Calidris canutus rufa	Т	-	Low
Roseate spoonbill	Platalea ajaja	-	Т	Moderate
Snowy plover	Charadrius alexandrinus	-	Т	Low
Southeastern American kestrel	Falco sparverius paulus	-	Т	Moderate
Tricolored heron	Egretta tricolor	-	Т	Moderate
Wood stork	Mycteria americana	Т	Т	Observed
	MAMMALS	I		T
Big Cypress fox squirrel	Sciurus niger avicennia	-	Т	Low
Florida bonneted bat	Eumops floridanus	Е	Е	Moderate
Tricolored bat	Perimyotis subflavus	С	-	Moderate
Florida panther	Puma concolor coryi	Е	Е	Low
Florida black bear	Ursus americanus floridanus	-	68A-4.009, FAC**	High
Sanibel island rice rat	Oryzomys palustris sanibeli	-	Т	Low
Sherman's short-tailed shrew	Blarina shermani	-	Т	Low
West Indian manatee	Trichechus manatus	Т	Т	High
INSECTS				
Miami blue butterfly	Cyclargus thomasi bethunebakeri	Е	Е	Low
PLANTS				
Aboriginal pricklyapple	Harrisia aboriginum	Е	E	Moderate
American bird's nest fern	Asplenium serratum	-	Е	Moderate
Banded wild-pine	Tillandsia flexuosa	-	Т	Moderate
Beautiful pawpaw	Deeringothamnus pulchellus	E	E	Low

Protected Species		Jurisdictional Agency		Dotontial of
Common Nomo	Scientific Nome	USFWS/	FWC/	Occurrence
	Scientific Name	NMFS	FDACS	Occurrence
Florida beargrass	Nolina atopocarpa	-	Т	Moderate
Cardinal airplant	Tillandsia fasciculata	-	Е	Low
Celestial lily	Nemastylis floridana	-	E	Low
Giant airplant	Tillandsia utriculate	-	Е	Low
Ghost orchid	Dendrophylax lindenii	-	E	Low
Giant leather fern	Acrostichum aureum	-	Т	Observed
Giant orchid	Pteroglossaspis ecristata	-	Т	Moderate
Gulf Coast Florida lantana	Lantana depressa var. sanibelensis	-	E	Low
Hand fern	Ophioglossum palmatum	-	E	Moderate
Iguana hackberry	Celtis iguanaea	-	E	Low
Lowland loosestrife	Lythrum flagellare	-	Е	Low
Many-flowered grass pink	Calopogon multiflorus	-	Т	Low
Nodding pinweed	Lechea cernua	-	Т	Low
Northern needleleaf	Tillandsia balbisiana	-	Т	Low
Pine pinweed	Lechea divaricata	-	E	Low
Ray fern	Schizaea pennula	-	E	Low
Redmargin zephyrlily	Zephyranthes simpsonii	-	Т	Moderate
Red stopper	Eugenia rhombea	-	E	Low
Scrub stylisma	Stylisma abdita	-	E	Low
Sand butterfly pea	Centrosema arenicola	-	E	Low
Sand-dune spurge	Chamaesyce cumulicola	-	E	Low
Sanibel lovegrass	Eragrostis pectinacea var. tracyi	-	E	Moderate
Sleeping beauty waterlily	Nymphaea jamesoniana	-	Е	Low
Florida spiny-pod	Matelea floridana	-	Е	Low
Spiny hackberry	Celtis pallida	-	E	Low
Tampa mock vervain	Glandularia tampensis	-	Е	Low
Tropical ironwood	Eugenia confusa	-	Е	Low
Yellow fringeless orchid	Platanthera integra	-	Е	Low

Definitions:

E = Endangered, T = Threatened, C=Candidate for Listing

* Removed from Florida's Endangered and Threatened Species List in 2008, but is still protected under the Bald and Golden Eagle Protection Act (BGEPA), Migratory Bird Treaty Act (MBTA), and FAC.

**Removed from Florida's Endangered and Threatened Species List in 2012, but still protected under the FAC.



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TC	DRMP, Inc. 941 Lake Baldwin Ln. Orlando, FL 32814 www.drmp.com Phone: 407-896-0594 Fax: 407-896-4836
DRAWN BY:	PROJECT #
R. Schmidt	18-0080.000

State Road 31 from State Road 80 to State Road 78 FPID: 441942-1-22-01 Lee County, FL

Protected	Figure
Species Map	5
DATA SOURCE: Imagery: ESRI 2022	

2.3 Federally Listed Species and Designated Critical Habitat

The following subsections describe the federally listed species observed, identified to have a "moderate" or "high" potential of occurrence within the study area, as listed above in **Table 3**, or the project occurs within the species' USFWS consultation area, critical habitat or focus area. All federally listed species are also considered state listed species. State listed species are discussed in further detail in Section 2.4.

2.3.1 Fish

Smalltooth Sawfish

The smalltooth sawfish is protected under the ESA as an endangered species. The species is under the jurisdiction of NMFS and was the first marine fish to receive federal protection. The range for the smalltooth sawfish has reduced during the last century and currently, this species is primarily found in southwest Florida waters, particularly within the Caloosahatchee River. Young smalltooth sawfish prefer shallow estuarine waters near red mangroves, as well as waters under docks, bridges, and piers. Juveniles will remain in this habitat until they are two to three years old. Adults prefer deeper, more open waters but have been documented near coral reefs and travel inshore for mating and birth. The smalltooth sawfish diet consists primarily of fish, but it will also eat small invertebrates such as shrimps and crabs. The study area occurs within designated critical habitat for the smalltooth sawfish and provides suitable habitat for juveniles within the Caloosahatchee River mangrove habitats. The species has been documented west of the study area within the Charlotte Harbor Estuary Unit. No smalltooth sawfish were observed within or adjacent to the study area during wetland delineation or seagrass and mangrove surveys. The Protected Species Construction Conditions (NOAA, 2021, included in Appendix A) will be adhered to during construction of the project. In accordance with Section 7 of the ESA, consultation with NMFS will be initiated through the review of the NRE. In order to quantify potential acoustic impacts to ESA-listed fish, sea turtles, and marine mammals, the following information on the proposed pile driving activity is to be included in the NMFS's Multispecies Pile Driving Calculator and is intended to be used as tool during consultation:

- The piles are 30" square concrete piles. The total numbers of piles driven during the course of project is 221.
- The piles will be driven by an impact hammer. No other piling driving methods are proposed.
- It is anticipated to be an average of 5000 to 7000 impact blows per day with a maximum average of 7000 impact blows per day.
- Bubble curtains or equivalent methods, as specified during consultation, will be implemented during construction as a noise reduction (attenuation) measure.
- No seasonal in-water work moratoriums are anticipated.
- In-water work will be performed land-based and by barges.
- The total duration of in-water work is anticipated to take 24 months and the total duration of the entire project is anticipated to take 36 months and will occur year-round.
- The project areas water depth is +/- 25 feet and substrate consist of silty-sand.

It is anticipated that the Preferred Alternative "**may affect, not likely to adversely affect**" the smalltooth sawfish.

2.3.2 Reptiles

American Crocodile

The American crocodile is federally protected under the ESA as a threatened species and is under the jurisdiction of the USFWS. American crocodiles are usually found in saltwater or brackish water in southern Florida; the northern extent of their range. Crocodiles deposit their eggs in holes or build mound nests in areas near water on beaches, stream banks, and levees. Florida crocodiles can be distinguished from alligators by their narrow snout shape and slender build. The study area is within the USFWS consultation area for the American crocodile but is not within designated critical habitat. The study area contains limited suitable nesting and foraging habitat for this species. However, the nearest known nesting locations occur on Marco Island, which is located approximately 50 miles south of the study area. No American crocodiles or their nests were observed during field surveys. Therefore, it is anticipated that the Preferred Alternative "**may affect, not likely to adversely affect**" the American crocodile.

Eastern Indigo Snake

The eastern indigo snake is protected under the ESA as a threatened species and under the jurisdiction of the USFWS. This species uses a wide variety of habitats including pine flatwoods, scrubby flatwoods, high pine flatwoods, dry prairie, tropical hardwood hammocks, edges of freshwater marshes, agricultural fields, coastal dunes, and human-altered habitats. They are known to utilize gopher tortoise burrows for refuge in the winter. Following the *Programmatic Effect Determination Key for the Eastern Indigo Snake* (USFWS, 2017):

- A. The Preferred Alternative is not located solely in open water or saltmarsh;
- B. The Preferred Alternative will be conditioned to follow the USFWS's *Standard Protection Measures for the Eastern Indigo Snake* during site preparation and construction;
- C. The project will impact less than 25 acres or more of eastern indigo habitat;
- D. There are potential gopher tortoise burrows, holes, cavities, or other refugia within the study area; and
- E. The permit will be conditioned such that all potential eastern indigo refugia is excavated and/or inspected prior to construction and if an individual is encountered, it must be allowed to vacate the area prior to site manipulation.

A copy of the determination key for the eastern indigo snake is found in **Appendix B**. The Department is committed to implementing the *Standard Protection Measures for Eastern Indigo Snake* (USFWS, 2021, included in **Appendix C**). Additionally, no gopher tortoise burrows were observed withing the study area during field surveys. Per the determination key, it is anticipated the Preferred Alternative "**may affect, not likely to adversely affect**" (A>B>C>D>E) the eastern indigo snake.

Sea Turtles

The loggerhead sea turtle is protected as a threatened species, while the green, hawksbill, kemp's ridley and leatherback sea turtles are protected as endangered species under the ESA. The USFWS and NMFS share jurisdiction of marine turtles where USFWS has jurisdiction over nesting sea turtles and NMFS has jurisdiction over swimming sea turtles. These four sea turtle species are generally found in marine and coastal waters but can also be found in bays and inlets. The

loggerhead sea turtle may be found offshore, as well as in inshore such as inlets, bays, and rivers and use the sandy beaches along Florida's Gulf and Atlantic coast to nest. Green sea turtles are generally found in shallow flats inside reefs, bays, and inlets, traveling further offshore when migrating. Kemp's ridley sea turtles are the smallest of the four species and inhabit nearshore and inshore waters of the northern Gulf of Mexico. Leatherback sea turtles are the largest turtle in the world and spend the majority of the time foraging offshore and returning to sandy beaches to nest throughout the east and west coast of Florida, with over 50% of nesting occurring in Palm Beach County. The turtles are attracted to lagoons and shoals with an abundance of marine grasses and algae. Open sandy beaches with minimal human disturbance are prime nesting sites. There is no suitable nesting habitat within the study area, however, foraging habitat is available within the Caloosahatchee River. No sea turtles were observed during the field reviews and no seagrasses were observed within the study area. Additionally, the review of the FWC Sea Turtle Stranding Data (2021) indicated that the nearest sea turtle stranding is approximately 8.50 miles southwest of the study area. Due to their potential of occurrence within the study area, the NOAA Protected Species Construction Conditions will be implemented during construction (Appendix A). Therefore, it is anticipated that the Preferred Alternative "may affect, not likely to adversely affect" marine turtles.

2.3.3 Birds

Audubon's crested caracara

Audubon's crested caracara (caracara) is protected under the ESA as a federally threatened species and is under the jurisdiction of the USFWS. The study area is located within the USFWS consultation area for the caracara. Caracara's preferred habitat includes wet prairies with cabbage palms, utilized for nesting. They have also been documented in wooded areas with saw palmetto, cypress, and scrub oaks. With the onset of agricultural development throughout Florida, many caracaras utilize pasture for foraging and nesting. Caracaras are highly opportunistic feeders with their diets consisting primarily of carrion but also insects, fish, rabbits, snakes, turtle, birds, opossums, rats, mice, squirrels, frogs, lizards, young alligators, crabs, and crayfish. Portions of the study area contain potentially suitable caracara habitat. A formal survey was conducted in 2020 and additional surveys were conducted in 2023. Qualified observers conducted a formal caracara survey in suitable habitat in accordance with the survey protocol and guidance approved by USFWS in 2022. During the January 2023 to April 2023 survey, observers did not observe individuals, territorial and nesting behaviors, or nests within the study area. The survey results indicate that caracaras do not appear to be actively using the habitat within the study area for nesting or foraging. Based on the results of the 2023 species-specific survey, the absence of caracara and caracara nests observed within the study area, combined with similar results from previous surveys, provides reasonable assurance that the Preferred Alternative "may affect, not likely to adversely affect" the caracara. The study area for the 2023 caracara survey was modified to encompass a pond outfall near the southwest portion of the project. However, based on the existing habitat and land use, no additional suitable caracara habitat occurs within the updated study area and no updated species surveys were required. Caracara survey results are summarized in Appendix D.

Florida Grasshopper Sparrow

The Florida grasshopper sparrow is protected under the ESA as an endangered species and is under the jurisdiction of the USFWS. The study area is located within the USFWS consultation area for the Florida grasshopper sparrow. These small, drab-colored birds prefer dry open prairies that contain bunch grasses, low shrubs, and saw palmetto with enough interspersed bare ground to forage. Most Florida grasshopper sparrows occur on public lands in south-central Florida. Pasture and shrub and brushlands are present north and south of the Caloosahatchee River; however, the area has been disturbed by historic cattle ranching practices or lack the vegetation structure needed to support this species. No suitable habitat is present within the study area to support foraging or nesting for this species. No nests or observations have been documented within the study area. Therefore, it is anticipated that the Preferred Alternative will have "**no effect**" on the Florida grasshopper sparrow.

Florida Scrub-Jay

The Florida scrub-jay is protected by the ESA as a threatened species and is under the jurisdiction of the USFWS. It is the only species of bird that is endemic to Florida. Scrub-jays inhabit sand pine and xeric oak scrub, and scrubby flatwoods, which occur in the highest and driest areas of Florida. The study area is wholly within the Florida scrub-jay USFWS consultation area. The majority of the study area consists of low lying, hydric habitat, as well as densely vegetated upland forests and shrublands. Scrub jays have been documented approximately 1.5 miles north of the study area, however, no suitable habitat exists within or adjacent to the study area. Additionally, no scrub-jay were observed during field reviews. Due to the lack of suitable habitat present within the study area, it is anticipated the Preferred Alternative "**may affect**, **not likely to adversely affect**" the Florida scrub-jay.

Red-cockaded Woodpecker

Red-cockaded woodpeckers (RCWs) are protected under the ESA as an endangered species and are under the jurisdiction of the USFWS. In the southeast, RCWs are habitat specialists that inhabit old growth pine forests where they can nest in living trees that have been infected with red heart disease. RCWs prefer open mature longleaf pine flatwoods; however, they will also occupy slash pine (Pinus elliottii) in south Florida, outside of the range of the longleaf pine (Pinus palustris). They are considered a keystone species because their cavities provide refuge for a host of other species. Due to the exponential reduction of longleaf pine ecosystems in Florida, the RCW population has been dramatically reduced with current distribution limited largely to conservation lands with areas of old growth pine forests. The southernmost occurrence was documented in the Big Cypress National Preserve in Collier and Monroe County. RCWs feed on insects, arthropods, and seeds. The study area is within the USFWS consultation area for RCW; however, the closest RCW observation is documented approximately nine miles to the northwest. The study area lacks old growth pines and a Florida bonneted bat roost survey that was conducted on January 26, 2023 concluded that no trees, powerline poles, or structures within the Preferred Alternative exhibited cavities or other potential roosting features (Section 2.3.4). Due to the lack of suitable habitat present within the study area, it is anticipated the Preferred Alternative will have "no effect" on the red-cockaded woodpecker.

Wood Stork

The wood stork is protected under the ESA as a threatened species and is under the jurisdiction of the USFWS. Wood storks are colonial waterbirds nesting in large rookeries, primarily in cypress swamps but also in sloughs, mangrove swamps, and other hardwood forested wetlands. Suitable foraging habitat (SFH) for wood storks include a variety of both freshwater and estuarine habitats including marshes, ponds, shallow roadside or agricultural ditches, seasonally flooded pastures, canals, creeks, managed impoundments, and depressional wetlands. Their diet consists of fish, insects, and small amphibians or reptiles.

The Preferred Alternative is within two designated wood stork Core Foraging Areas (CFAs): Caloosahatchee River East and West. The nearest wood stork colony, Caloosahatchee River East, is located approximately 2.1 miles west of the study area (**Figure 5**). The study area contains wood stork SFH within other surface waters (OSWs), herbaceous wetlands, and riparian areas along the Caloosahatchee River. During field assessments, wood storks were observed foraging in a roadside swale near the intersection of SR 31 and SR 80 and in a small agricultural pond just north of the study area. Per the *Wood Stork Effect Determination Key* (USFWS, 2010):

- A. The proposed build alternative impacts Suitable Foraging Habitat at a location greater than 0.47 miles from a colony site;
- B. The proposed build alternative impacts suitable foraging habitat greater 0.50 acres;
- C. The proposed build alternative impacts suitable foraging habitat with core foraging area;
 - The proposed build alternative impacts to SFH are within the CFA of a colony site; and
- E. The proposed build alternative provides SFH compensation within a wetland mitigation service area that is an USFWS approved wetland mitigation bank.

A copy of the *Wood Stork Effect Determination Key* is found in **Appendix E**. It is anticipated that the Preferred Alternative "**may affect, not likely to adversely affect**" the wood stork (A>B>C>E). FDOT will provide mitigation for impacts to wood stork SFH within the Service Area of a Service-approved wetland mitigation bank or wood stork conservation bank.

2.3.4 Mammals

Florida Bonneted Bat

The Florida bonneted bat is protected under the ESA as an endangered species and is under the jurisdiction of the USFWS. The USFWS proposed critical habitat for the Florida bonneted bat on June 10, 2020 (85 FR 35510), covering approximately 1.5 million acres in south and southwest Florida. The 2020 critical habitat includes the Babcock-Webb WMA, Babcock Ranch, and surrounding areas that are located north of the study area. The study area is not within the proposed critical habitat for the Florida bonneted bat, however, is located within the USFWS consultation area. Suitable habitat for the Florida bonneted bat includes areas that are relatively open and provide a water source such as freshwater systems and wetlands. They have been documented foraging in a variety of habitats including semitropical forests with tropical hardwood, pineland, and mangrove habitats, as well as developed areas such as golf courses and neighborhoods. Their preferred roosting habitat includes forests and other areas where tall, mature live or dead trees are

present and in artificial roosting structures including buildings, bridges, and bat houses. Suitable foraging habitat for the Florida bonneted bat is present throughout the study area.

According to the PD&E Study conducted to the north of the proposed project, *SR 31 from SR 78 to Cook Brown Road* (FDOT, 2020), acoustic surveys performed in Spring 2020 confirmed that Florida bonneted bats were present and foraging in the project area. Following the acoustic survey, a roosting survey was conducted and no potential roosting locations were observed. During a meeting held with USFWS and Department staff on August 18, 2021, USFWS determined that the proposed project (SR 31 from SR 80 to SR 78) could assume presence of the species, the study area contains foraging habitat for the Florida bonneted bat, and that a limited roosting survey would be required. This Florida bonneted bat roost survey was conducted on January 26, 2023, in accordance with the USFWS *Florida Bonneted Bat Consultation Guidelines* (2019). Results of the roost survey concluded that no trees, powerline poles, or structures within the Preferred Alternative exhibited cavities or other potential roosting features suitable for use by Florida bonneted bats. Results of the survey are included as **Appendix F**. Per the USFWS *South Ecological Services Field Office Consultation Key for the Florida Bonneted Bat* (October 22, 2019):

- 1a. The proposed project is wholly within the Consultation Area;
- 2a. Potential FBB roosting habitat exists within the project area;
- 3b. Project size/footprint is greater than 5 acres;
- 6a. Results show some FBB activity (assumption from the 2020 PD&E Study for SR 31 from SR 78 to Cook Brown Road acoustic survey results);
- 7b. Results do not show FBB roosting is likely;
- 10b. Results do not show high FBB activity/use;
- 12a. Project will affect greater than 50 acres of FBB habitat.

Per the consultation key (**Appendix G**), it is anticipated the Preferred Alternative "**may affect**, **likely to adversely affect**" the Florida bonneted bat and that **further consultation** with the USFWS will be required (1a>2a>3b>6a>7b>10b>12a). In accordance with Appendix D of the USFWS *South Ecological Services Field Office Consultation Key for the Florida Bonneted Bat* (October 22, 2019), FDOT is proposing the following conservation measures and best management practices (BMPs) in order to minimize impacts to the Florida bonneted bat; check cavities for bats 30 days prior to removal of trees, snags, or structures, retain mature trees and snags that could provide roosting habitat, where possible, avoid and minimize the use of artificial lighting, retain natural light conditions, and install wildlife friendly lighting, and avoid or limit widespread application of insecticides in areas where Florida bonneted bats are known or expected to forage or roost. The Department is requesting formal Section 7 consultation with the USFWS through the review of the NRE to determine the DOE on the Florida bonneted bat and to provide concurrence on the proposed BMPs.

Tricolored Bat

The tricolored bat is a candidate for listing under the jurisdiction of the USFWS. As of September 14, 2022, the USFWS proposed to list the tricolored bat as an endangered species under the ESA. Designated critical habitat is not proposed for the tricolored bat at this time. Tricolored bats are found throughout Florida, however more common in the northern half of the state. The tricolored bat populations have been drastically impacted by a fungal infection, white nose syndrome, that

affects hibernating bat colonies. The small, insect-eating bats prefer to roost in mature hardwood forests, caves, and manmade structures. When tree hollows or other naturally occurring roosts are unavailable, the bats have been documented roosting in man-made structures such as road culverts or abandoned wells. Tricolored bats forage in waterways, forests, and agricultural areas where small insects such as mosquitos, leafhoppers, or small beetles can be found. The study area contains suitable roosting and foraging habitat for the tricolored bat. The Department will continue coordination with USFWS to determine the potential effect to the tricolored bat once a final listing decision has been made.

Florida Panther

The Florida panther is protected under the ESA as an endangered species and is under the jurisdiction of the USFWS. The historic range of the panther was throughout Florida and as far north as South Carolina. Currently the remaining population of adult panthers (approximately 120-230) exist primarily in southwest Florida with female breeding populations restricted south of the Caloosahatchee River. Panthers utilize a variety of warmer habitat, preferring native upland forests, wetlands, swamps, stands of palmetto, pine flatwoods, or disturbed habitats. The southern portion of the study area is located over a USFWS designated secondary panther focus area; however, the Preferred Alternative contains a limited amount of suitable habitat for the panther and is not within the panther focus area. The nearest Panther Focus Area is located south of the SR 31 and SR 80 intersection and neighboring land use (a commercial shopping center) does not provide suitable habitat that would be utilized by Florida panther. Additionally, no Florida panthers were observed during the field surveys and the remaining suitable habitat for this species has either been disturbed or developed. Therefore, it is anticipated the Preferred Alternative will have "**no effect**" on the Florida panther.

West Indian Manatee

The west Indian manatee is protected under the ESA as a threatened species under the jurisdiction of the USFWS. Manatees are also protected under the Marine Mammal Protection Act (16 USC § 1361 et seq) and the Florida Manatee Sanctuary Act (68C-22, FAC). Manatees are found throughout Florida in marine, estuarine, and freshwater environments such as rivers, bays, canals, estuaries, and coastal areas moving freely between fresh, saline and brackish waters. Florida estuaries, springs and rivers contain seagrass beds and freshwater aquatic vegetation that provide the manatee's primary food source. Manatee observations are documented within and adjacent to the study area in the Caloosahatchee River and associated canals (**Figure 5**). The study area occurs within the USFWS designated critical habitat for the manatee and State Manatee Protection Zone (Chapter 68C-22.005(2), FAC). A nearby manatee aggregation area exists approximately two miles downstream of the Wilson Pigott Bridge; the FPL Orange River Power Plant generates warm water discharges that attract manatees to the southern shore of the Caloosahatchee River.

A manatee was observed in the Caloosahatchee River during wetland and mangrove surveys. Per the *Effect Determination Key for the Manatee in Florida* (USACE, 2013, included in **Appendix H**), it is anticipated the Preferred Alternative "**may affect, not likely to adversely affect**" the west Indian manatee (A>B>C>G>N>O>P). Due to their potential of occurrence within the project, the Department commits to implementing *Standard Manatee Conditions for In-Water Work* (USFWS, 2006, included in **Appendix I**) during construction.

2.3.5 Federally Protected Plants

Federally protected plants are protected under the ESA. There are two federally protected plant species that have the potential to occur in Lee County (**Table 3**); however, only one has a moderate potential of occurrence within the study area due to suitable habitat for the species. Species-specific plant surveys for federally protected plants were conducted in June 2020 and April 2023. Surveys consisted of pedestrian transects through all appropriate habitats. No federally protected plant species were observed within the Preferred Alternative; therefore, it is anticipated that the proposed project would have no effect on federally protected plant species.

Aboriginal Pricklyapple

The aboriginal pricklyapple is a cylindrical-stemmed cactus with upright stems. This cactus occurs in Florida coastal strands, tropical coastal hammocks. Populations may likely be found on shell mounds, sites with shelly substrates, or close to mangrove zones. Mangroves within the study area may provide suitable habitat for the aboriginal pricklyapple. During the field reviews, no aboriginal pricklyapple were observed within the study area. Areas to be impacted by the Preferred Alternative will be re-evaluated for the presence of any federally protected plant species during permitting in the design phase of the project. As a result, it is anticipated that the Preferred Alternative will have "**no effect**" on the aboriginal pricklyapple.

No individuals or habitat for federally protected plants species was observed within the study area during field surveys. If any federally protected plant species are observed within the proposed impact limits during the design phase, consultation with the USFWS will be initiated, and efforts will be made prior to construction to allow for seed collection and/or relocation to adjacent habitat or other suitable protected lands.

2.3.6 Critical Habitat

The study area occurs within areas of critical habitat for the west Indian manatee and smalltooth sawfish. The proposed project will include the replacement of an existing overwater structure and minor impacts to EFH. Impacts to critical habitat are minor given the small size of impact to EFH relative to the available habitat in the region. Additionally, compensatory mitigation to offset the loss of similar habitat will be provided pursuant to Section 373.4137, Florida Statutes (FS), to satisfy all mitigation requirements of Part IV of Chapter 373, FS and 33 United States Code (USC) § 1344. Further details regarding mitigation are provided in Section 3.7. It is anticipated that the Preferred Alternative will result in "**no destruction or adverse modification**" of critical habitat for the west Indian manatee and smalltooth sawfish.

2.4 State Listed Species

The following subsections describe the state listed species observed or identified to have a "moderate" or "high" potential of occurrence within the study area, as listed above in **Table 3**.

2.4.1 Reptiles

Gopher Tortoise

The gopher tortoise is listed by the FWC as threatened. Gopher tortoises are generally found in high and dry habitats such as sandhills, xeric oak habitats, and pine flatwoods. More than 350 other commensal species benefit from the gopher tortoises' extensive burrows. The eastern indigo snake (discussed in Section 2.3.2) has the potential to occur within the project area and utilize gopher tortoise burrows for refugia. There are portions of the study area that contain suitable xeric habitat for gopher tortoise. However, no gopher tortoises or their burrows were observed within the study area during the gopher tortoise survey conducted in April 2023. The gopher tortoise survey was conducted by FWC authorized gopher tortoise agents in 15% of suitable gopher tortoise habitat within the study area. The Department will conduct a gopher tortoise survey of all suitable habitat within the project footprint prior to construction, in accordance with *Gopher Tortoise Permitting Guidelines* (FWC, 2008, revised 2020). If gopher tortoise burrows are identified within the project footprint, a gopher tortoise relocation permit will be obtained from the FWC. Therefore, the Preferred Alternative will have "**no adverse effect anticipated**" on the gopher tortoise.

2.4.2 Birds

Florida Sandhill Crane

The Florida sandhill crane is listed by FWC as threatened. Florida sandhill cranes forage in a variety of open habitats, including shallow herbaceous wetlands, improved pastures, prairies, open pine forests, croplands, golf courses, airports, and sod farms. They nest and roost in shallow freshwater marshes varying year to year based on fluctuating water levels. It is anticipated that the Florida sandhill crane may utilize habitat within the study area for foraging, particularly the freshwater wetlands; however, no suitable nesting habitat was observed. Therefore, the Preferred Alternative will have "**no adverse effect anticipated**" on the Florida sandhill crane.

Least Tern

The least tern is listed by the FWC as threatened. Least terns forage in a variety of coastal waters, including beaches, bays, estuaries, sandbars, tidal creeks, and inland waters such as large lakes, phosphate pits, and flooded agricultural fields. This species nests on sandy beaches, small coastal islands, and dredge spoil islands but will also utilize manmade structures like gravel rooftops, dredge spoil islands, construction sites, and mining lands. Suitable foraging habitat for the least tern occurs within the study area, and suitable nesting habitat exists in areas along the Caloosahatchee River; however, it is anticipated that there will be minimal loss of suitable habitat. Thus, the Preferred Alternative will have "**no adverse effect anticipated**" to least tern.

Wading Birds

Wetlands and surface waters within the study area contain foraging habitat for four state-listed wading bird species: little blue heron, reddish egret, roseate spoonbill, and tri-colored heron. The FWC Historic Waterbird Colony Locator indicated that the nearest wading bird colony is 2.1 miles southwest of the study area located on an island in the Caloosahatchee River (**Figure 5**). During the field review, no nesting activity for wading birds was observed within or adjacent to the study area. Additionally, the Preferred Alternative will not cause a significant loss of foraging or nesting

habitat in the region or impact nest sites; therefore, it will have "**no adverse effect anticipated**" on state-protected wading birds.

Southeastern American Kestrel

The southeastern American kestrel is listed by the FWC as threatened. The southeastern American kestrel is the only non-migratory, permanent resident kestrel in Florida and is the smallest falcon in the U.S. The southeastern American kestrel nests in cavities excavated by woodpeckers or natural processes to create holes in trees, predominately dead trees called snags. Suitable foraging habitat includes land cover with open, low herbaceous vegetation or low scrub oaks with patchy open sandy areas such as sandhill and open pine savannah maintained by fire, open pine habitats, woodland edges, prairies, pastures, and other agricultural lands. During preliminary field surveys, southeastern American kestrel habitat was observed throughout the study area in open lands and woodland edges. Due to the presence of suitable habitat, a species-specific survey was conducted in March and April 2023 in accordance with the Species Conservation Measures and Permitting Guidelines for the Southeastern American Kestrel (FWC, 2020). A combination of vehicular and pedestrian transects were utilized to survey the study area covering all potentially suitable habitat. Based on the results of the 2023 species-specific survey, southeastern American kestrels do not appear to be actively using the habitat within the study area for nesting or foraging and no active or inactive nest cavities were observed during the survey. Therefore, the Preferred Alternative will have "no adverse effect anticipated" on the southeastern American kestrel. The results of the survey are included in Appendix J.

2.4.3 State Protected Plants

The FDACS Division of Plant Industry is the regulatory agency responsible for the protection of plant species that are endangered, threatened, or commercially exploited in the State of Florida. The Florida Regulated Plant Index includes all plants listed as endangered, threatened, or commercially exploited as defined in Chapter 5B-40.0055, FAC. According to the FNAI, and FDACS, there are thirty-two (32) state-protected plant species that have the potential to occur in Lee County (**Table 3**). Of those 32 species, eight have a "moderate" or "observed" potential of occurrence within the study area due to the presence of potentially suitable habitat or were observed within the study area. These species are discussed below.

Species-specific plant surveys for state protected plants were conducted in June 2020 and April 2023 with pedestrian transects through all appropriate habitat. No state protected plant species were observed within the Preferred Alternative; therefore, it is anticipated that the proposed project would have no effect on state protected plant species.

American Bird's Nest Fern

This species is state listed as endangered due to habitat loss and plant poaching. This plant can be found in tropical hardwood hammocks and swamps including cypress swamps. During field reviews, this species was not observed within the study area. Due to the lack of suitable habitat and no observations made during field assessments, the Preferred Alternative will have "**no effect anticipated**" on the American bird's nest fern.

Banded Wild-Pine and Hand Fern

These species are discussed collectively due to similarity of habitat types. The banded wild pine is state listed as threatened, while the hand fern is listed as endangered. These plants can be found in coastal hammocks, rockland hammocks, scrubby flatwoods, shell mounds, estuarine tidal swamps, and red bay (*Persea borbonia*) islands. Neither of these species were observed during field assessments. Due to the lack of suitable habitat present and no observations during field assessments, the Preferred Alternative will have "**no effect anticipated**" on the banded wild-pine and hand fern.

Florida Beargrass and Redmargin Zephyrlily

These species are discussed collectively due to similarity of habitat types. The Florida beargrass and redmargin zephyrlily are state listed as threatened species. These plants can be found in wet flatwoods, plains, hillsides, and pineland sites. Neither of these species were observed during field assessments. Due to the lack of suitable habitat present and no observations during field assessments, the Preferred Alternative will have "**no effect anticipated**" on the Florida beargrass or the redmargin zephyrlily.

Giant Leather Fern

The giant leather fern is state listed as threatened and can be found in brackish or freshwater marshes, swamps, prairies, and floodplains of the central and southern peninsula. This species was observed within the wetland habitats during field assessments. The Department will notify FDACS of the observed locations of the giant leather fern in order to provide the opportunity to conduct conservation measures for the species or pursue a plant rescue effort. It is anticipated that the Preferred Alternative will have the "**potential for adverse effects**" on the giant leather fern.

Giant Orchid

The giant orchid is state listed as threatened and can be found in shrub, sandhill, pine flatwoods, pine rocklands, old fields, and scrubby flatwoods. Little to no suitable habitat is present within the study area and no observations of this species were made during field assessments; therefore, the Preferred Alternative will have "**no effect anticipated**" on the Giant orchid.

Sanibel Lovegrass

State-listed as endangered, Sanibel lovegrass can be found in bars of rivers, shores of creeks and ponds, and roadside ditches. Potential habitat for Sanibel lovegrass exists within the study area along the Caloosahatchee River. No observations of this species was observed during field assessments therefore, the Preferred Alternative will have "**no effect anticipated**" on the Sanibel lovegrass.

2.4.4 Non-Listed Rare Plants

Non-listed native plant species are generally not afforded the type of protection that state or federally protected listed plant or wildlife species are. The FDOT Office of Environment Management (OEM) partnered with the Florida Wildflower Foundation (FWF) and the Florida Native Plant Society (FNPS) to form the Native Florida Plants FDOT Working Group. Through the working group, the FWF and FNPS can engage and review projects early in the process so that their comments regarding potential plants of concern can be considered by FDOT. The working

group also includes representatives from FDACS to ensure the procedures under 581.185 Florida Statutes and Chapter 5B-40, Florida Administrative Code are followed. Even though FDOT is not obligated to protect non-listed species of interest/concern, stakeholders are often interested in performing plant relocations or seed and/or cuttings collection to maintain species or population viability if avoidance is not feasible.

The Peninsular Florida Genera of Concern List (2021) provided by FNPS was reviewed and no plants were identified with the potential to occur within the study area. Additionally, according to the ETDM Summary Report No. 14359, dated February 19, 2019, the working group and FDACS did not identify any issues or potential project effects related to non-listed plants of interest or concern.

2.5 Other Protected Species or Habitats

2.5.1 Bald Eagle

The bald eagle was removed from the protection of the ESA in 2007 (72 FR 37345) and from the FWC imperiled list in 2008; however, it is still protected by state and federal rules. The bald eagle is protected under the U.S. Migratory Bird Act, the Bald and Golden Eagle Protection Act, and under the state bald eagle rule 68A-16.002, FAC. Bald eagles forage in expanses of fresh and salt water and nest in forested areas generally located along habitat edges that provide an unobstructed view of the surrounding habitat. Most bald eagle nests are relatively large and located within two miles from a water source, they prefer tall pine trees but will also utilize cypress, oaks, or manmade structures such as power poles or utility towers. The FWC has monitored the population of nesting eagles since 1972, however, has recently teamed with the Audubon's Center for Birds and Prey EagleWatch program; the EagleWatch program will continue to maintain and update the nesting information while assigning nest identification numbers for new nests. In order to reduce the potential for human activity to adversely affect bald eagles, USFWS and FWC Management Guidelines suggest the protection of a 660-ft habitat buffer around each active and alternate bald eagle nest. According the FWC and EagleWatch data, the closest documented bald eagle nest (LE039) is located approximately 1.34 miles east of the Preferred Alternative, well beyond the 660-ft protection zone (Figure 5). The study area contains suitable foraging and nesting habitat for the bald eagle; however, no individual or nests were observed during field investigations.

2.5.2 Florida Black Bear

The Florida black bear is not listed by the USFWS and was removed from FWC's list of threatened species in 2012; however, is still protected under the Bear Conservation Rule (68A-4.009, FAC) and the FWC Florida Black Bear Management Plan. Suitable habitat for black bears includes a mixture of flatwoods, swamps, scrub oak ridges, bayheads and hammock. Suitable habitat exists within the study area; however, movement is restricted due to the river, large roadways, and residential development. The Florida black bear thrives in habitats that provide an annual supply of seasonally available food sources, secluded areas for denning, and some degree of protection from humans. FWC maintains a database of bear related calls, mortality occurrences, telemetry, and release data. There is one documented bear related call within the study area near the Sweetwater Landing Marina and several surrounding the study area, near the SR 80 intersection and Fort Myers Shores residential neighborhood (**Figure 5**). Additionally, one bear mortality

occurred in 2009 east of the study area near proposed Pond Site 1-E. The study area falls within the FWC South Bear Management Unit. To avoid potential conflicts with bears during construction, the Department will require contractors to remove garbage daily from the construction site or use bear proof containers for securing of food and other debris from the project work area to prevent these items from becoming an attractant for the Florida black bear. Any interaction with nuisance bears will be reported to the FWC Wildlife Alert hotline 888-404-FWCC (3922).

2.5.3 Non-Listed Bats

In Florida, there are 13 resident bat species that reside in the state year-round or are seasonal visitors. All Florida non-listed bats are protected in accordance with FAC rule 68A-4.001 General Prohibitions and FAC rule 68A-9.010 Taking Nuisance Wildlife. Bats roost in a variety of locations including buildings, manmade structures, bridges, tree cavities, or caves and can either roost solitary or in colonies depending on species, location, or roost type. During field investigations, evidence of roosting bats were observed in the Wilson Pigott Bridge. The Department will follow the *FDOT Guidance on Bat Exclusion Practices* (July 2023) prior to construction to ensure adverse impacts to bats are avoided. Bat exclusion measures can only be conducted outside of the maternity season which lasts from April 15th to August 15th, and the exclusion should take place when the low temperature is forecasted by the U.S. National Weather Service to remain above 50°F for four consecutive nights.

3.0 WETLAND EVALUATION

3.1 Introduction

During the ETDM process, the FDEP and SFWMD assigned Moderate DOE to wetlands and surface waters. The United States Army Corps of Engineers (USACE) and the USFWS assigned Minimal Degrees of Effect to wetlands and surface waters. NMFS was also coordinated with during the ETDM process and assigned Moderate Degrees of Effect to wetlands and surface waters, citing potential concerns related to living marine resources within the Caloosahatchee River. Coordination will continue throughout the study and design/permitting phase of the project.

The presence of wetlands and surface waters associated with the Preferred Alternative fall under the jurisdiction of the USACE which regulates the discharge of dredged or fill material into waters of the United States under the Clean Water Act (CWA) and SFWMD which regulates activities in surface waters and wetlands in this region. The wetland evaluation conducted and documented within this report is consistent with requirements of the following regulations:

- Section 404 of the CWA;
- Federal Executive Order 11990, Protection of Wetlands;
- U.S. Department of Transportation (USDOT) Order 5660.1A, Preservation of the Nation's Wetlands;
- Federal Highway Administration (FHWA) Technical Advisory T6640.8A;
- Chapter 62-340, FAC, Delineation of the Landward Extent of Wetlands and Surface Waters; and
- PD&E Manual Wetlands and Other Surface Waters (2020).

3.2 Data Collection and Field Surveys

Prior to a field review, ecologists performed a GIS database and literature review to identify wetlands and surface waters that occur within and adjacent to the study area. Referenced materials included, but were not limited to, the following data sources:

- Current and historical aerial photography;
- SFWMD FLUCFCS land cover and land use data (2016);
- Soil Survey Geographic (SSURGO) Database for Florida (2021);
- Soil Survey for Lee County (1984);
- USFWS National Wetland Inventory (NWI) Mapper (accessed 2023);
- FWC Marine/Seagrass GIS data (2022);
- USACE Wetland Delineation Manual, 1987;
- Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region, (USACE 2010);
- Chapter 62-345, FAC, Uniform Mitigation Assessment Method (UMAM); and
- Chapter 62-340, FAC, Delineation of the Landward Extent of Wetlands and Surface Waters.

Professional wetland scientists delineated the extent of wetlands and surface waters within the study area on various field visits between August 2019 to April 2021 in accordance with federal
and state guidelines referenced above. A seagrass survey was conducted, but no seagrasses were observed (see **Section 4.0** for more detail).

3.3 Wetland Habitats and Surface Waters

Wetlands and surface waters comprise approximately 96 acres of the study area and are under the regulatory authority and jurisdiction of the SFWMD and USACE. Wetland systems located in the northern portion of the study area are tidally influenced and hydrologically connected to the Caloosahatchee River. Forested and non-forested wetlands were observed in the central and southern portion of the study area. Surface waters consist of the Caloosahatchee River and excavated channels connected to the Caloosahatchee River.

Four (4) surface waters, 14 wetland systems, and six (6) Other Surface Waters (OSW) were identified within the study area based on literature/data and field reviews (described below and depicted on **Figure 6**). Wetland and surface water limits will be verified by regulatory agencies during the project design and permitting.

Surface Water 1

SFWMD FLUCFCS 5110: Natural River, Stream, Waterway

USFWS NWI: E1UBL (Estuarine, Subtidal, Unconsolidated Bottom, Subtidal)

The Caloosahatchee River (Surface Water 1) bisects the study area under the Wilson Pigott Bridge and is a navigable waterway. It is a tidally influenced waterway connecting the Gulf of Mexico to the Okeechobee Canal, forming an estuary along most of its course. It is hydrologically connected to San Carlos Bay and the Matlacha Pass Aquatic Preserve, a marine ecosystem that provides estuarine habitat and filtering of nearshore waters. Within the study area, Surface Water 1 is bordered by mangrove swamps in its northwest, northeast, and southeast quadrants. Commercial development, the Sweetwater Marina and Boathouse restaurant, is located on the southwest quadrant. Wetland vegetation along the shoreline is described as Wetlands A and B (FLUCFCS 6120: mangrove swamp).

Surface Water 1 has a high ecological value for fish and wildlife, providing habitat for many fish, reptiles, amphibians, and various mammals. NMFS has designated this portion of the Caloosahatchee River as critical habitat for the smalltooth sawfish and West Indian manatee. Additionally, Surface Water 1 is considered state-owned SSL.

Surface Waters 2 and 3

SFWMD FLUCFCS 5120: Channelized River, Stream, Waterway

USFWS NWI: E1UBLx (Estuarine, Subtidal, Unconsolidated Bottom, Subtidal, Excavated) This land use class includes artificially improved rivers, creeks, canals, and man-made channels. Surface Water 2 and 3 are located on the east and west side of the existing SR 31 corridor and south of the Caloosahatchee River. They are excavated channelized canals connected to the Caloosahatchee River supporting watercraft from the Sweetwater Marina and residential development. Surface Waters 2 and 3 are bordered by red mangroves (*Rhizophora mangle*), white mangroves (*Laguncularia racemose*), giant reed (*Arundo donax*), cattail (*Typha latifolia*), and Brazilian pepper (*Schinus terebinthifoli*). Surface Waters 2 and 3 have a moderate to high ecological value for fish and wildlife, providing habitat for reptiles, amphibians, and various mammals. FWC has designated these areas as a Manatee Protection Zone (Chapter 68C-22, FAC).

Surface Water 4

SFWMD FLUCFCS 5300: Reservoirs

USFWS NWI: PUBHx (Palustrine, Unconsolidated Bottom, Permanently Flooded, Excavated)

Surface water 4 is a maintained stormwater treatment pond located on the southeast corner of the study area within the Verandah Golf Course. Reservoirs are artificial impoundments of water used for flood control, irrigation, or water supply. Surface water 4 is devoid of vegetation and is maintained within the golf course.

Wetlands A and B

SFWMD FLUCFCS 6120: Mangrove Swamps

USFWS NWI: E2SS3Pd (Estuarine, Intertidal, Scrub-Shrub, Broad-Leaved Evergreen, Irregularly Flooded, Partly Drained/Ditched)

Wetlands A and B are defined as mangrove swamps because they are predominately composed of red and/or black mangroves (*Avicennia germinans*). These systems are similar in vegetative composition and hydrologic location and function. They are located along the north and south shoreline of the Caloosahatchee River adjacent to the existing Wilson Pigott Bridge. Wetland A and B both have a dense population of red mangrove (greater than 75% cover). Other vegetation observed within these systems include white mangrove, pond apple (*Annona glabra*), wax myrtle (*Myrica cerifera*), Brazilian pepper, cabbage palm (*Sabal palmetto*), strangler fig (*Ficus aurea*), bishopwood (*Bischofia javanica*), Carolina willow (*Salix caroliniana*), mimosa tree (*Albizia julibrissin*), primrose willow (*Ludwigia spp.*), elderberry (*Sambucus nigra subsp. canadensis*), giant reed, giant leather fern, saw-grass (*Cladium jamaicense.*), Baker's cordgrass (*Spartina bakeri*), torpedo grass (*Panicum repens*), spike rush (*Eleocharis palustris*), cattail, cinnamon fern (*Osmundastrum cinnamomeum*), Boston fern (*Nephrolepis exaltata*), wedelia (*Sphagneticola trilobata*), and star rush (*Dichromena spp.*).

Wetlands C and D

SFWMD FLUCFCS 6170: Mixed Wetland Hardwoods

USFWS NWI: PSS1/3Cd (Palustrine, Scrub-Shrub, Broad-Leaved Deciduous/Broad-Leaved Evergreen, Seasonally Flooded, Partially Drained/Ditched)

Wetlands C and D are similar in vegetative composition and geographic location. Wetland C and D are a mixed wetland hardwood forested system. They are located on the east side of the study area and bordered by shrub and brushland, residential development to the east, and the existing SR 31 corridor to the west. Canopy species observed within Wetlands C and D include cabbage palm, live oak (*Quercus virginiana*), laurel oak (*Quercus laurifolia*), Australian pine (*Casuarina spp.*), strangler fig, and melaleuca (*Melaleuca quinquenervia*). Subcanopy species observed consisted of Brazilian pepper, mimosa tree, Carolina willow, buttonwood (*Conocarpus erectus*), pond apple, marlberry (*Ardisia escallonioides*), wax myrtle, and saltbush (*Baccharis halimifolia*). Herbaceous vegetation and ground cover consisted of giant reed, giant leather fern, cattail, Peruvian primrose willow, swamp lily (*Crinum Americanum*), para grass (*Urochloa mutica*), torpedo grass, Baker's cordgrass, flat sedge (*Cyperus spp.*), Virginia chain fern (*Woodwardia virginica*), pickerel weed (*Pontederia cordata*), and climbing hempweed (*Mikania scandens*).

Wetland E

SFWMD FLUCFCS 6170: Mixed Wetland Hardwoods

USFWS NWI: PFO1Cd (Palustrine, Forested, Broad-Leaved Deciduous, Seasonally Flooded, Partially Drained/Ditched)

Wetland E is located on the east side of the study area and is classified as a mixed wetland hardwoods. The system is bound by a mixture of upland forest and low density residential to the south, SR 31 right-of-way to the west, and a commercial facility to the north. The system is dominated by cabbage palm in the interior and Carolina willow on the edges. Other vegetation observed include swamp tupelo (*Nyssa sylvatica*), bishopwood, laurel oak, live oak, chinaberry (*Melia azedarach*), pond apple, Brazilian pepper, saw palmetto, cogon grass (*Imperata cylindrica*), star-rush (*Dichromena species*), wedelia, swamp lily, duck potato (*Sagittaria lancifolia*), and smartweed (*Polygonum hydropiperoides*).

Wetland F

SFWMD FLUCFCS 6170: Mixed Wetland Hardwoods

USFWS NWI: PFO1Cd (Palustrine, Forested, Broad-Leaved Deciduous, Seasonally Flooded, Partially Drained/Ditched)

Wetland F is an isolated depressional system located on the east side of the study area. The system is bordered by upland hardwood forests on its north, east, and south and the existing SR 31 right-of-way on the west. The canopy of Wetland F consisted predominately of cabbage palm. Subcanopy and groundcover observed included Peruvian primrose, Brazilian pepper, torpedo grass, and smartweed.

Wetlands G and H

SFWMD FLUCFCS 6170: Mixed Wetland Hardwoods

USFWS NWI: PFO1/2Cd (Palustrine, Forested, Broad-Leaved Deciduous, Needle-Leaved Deciduous, Seasonally Flooded, Partially Drained/Ditched)

Wetlands G and H are similar in vegetative composition and were historically connected. Recent development of commercial facilities located on the northeast quadrant of the SR 31 and SR 80 intersection has segmented the systems into two geographically isolated systems. Observed canopy species included laurel oak, bald cypress (*Taxodium distichum*), bishopwood, cabbage palm, and ear pod tree (*Enterolobium cyclocarpum*). Subcanopy and groundcover observed included Carolina willow, Brazilian pepper, wax myrtle, buttonbush (*Cephalanthus occidentalis*), giant leather fern, royal fern (*Osmunda regalis*), Peruvian primrose willow, pond apple, cattail, swamp fern (*Blechnum serrulatum*), smartweed, torpedo grass, and alligator flag (*Thalia geniculate*).

Wetland I

SFWMD FLUCFCS 6210: Cypress

USFWS NWI: PFO2Ed (Palustrine, Forested, Needle-Leaved Deciduous, Seasonally Flooded/Saturated, Partially Drained/Ditched)

Wetland I is an isolated depressional forested system that is dominated by bald cypress. Wetland I is located on the southeast corner of the study area within the existing SR 80 right-of-way. Observed vegetation within Wetland I consists primarily of bald cypress with Brazilian pepper, cabbage palm, and Peruvian primrose around the periphery.

Wetland J

SFWMD FLUCFCS 6170: Mixed Wetland Hardwoods

USFWS NWI: PSS1/3Cd (Palustrine, Scrub-Shrub, Broad-Leaved Deciduous/Broad-Leaved Evergreen, Seasonally Flooded, Partially Drained/Ditched)

Wetland J is located on the northwest quadrant of the SR 31 and SR 80 intersection and is classified as a mixed wetland hardwood. The system is bound by a mixture of uplands to the north and west and roadways on the south and east. Historically, the system was much larger but has been altered due to land clearing and land management. Observed canopy within Wetland J consisted of laurel oak, cabbage palm and a handful of melaleucas. Other vegetation observed included swamp tupelo, bishopwood, wax myrtle, Brazilian pepper, and broomsedge. Wetland J is hydrologically connected to a stormwater ditch to the south (OSW 3).

Wetland K

SFWMD FLUCFCS 6310: Wetland Scrub

USFWS NWI: PSS1Cf (Palustrine, Scrub-Shrub, Broad-Leaved Deciduous, Seasonally Flooded, Farmed)

Wetland K is a wetland scrub habitat located within proposed Pond Site 1-E and associated pond site outfalls. Wetland K is a disturbed system that has been altered by ongoing agricultural practices. Vegetation observed within the system included low scrub such as Carolina willow, Peruvian primrose, Brazilian pepper, saltbush, cogon grass, cattails, and various wetland rushes (*Juncus spp.*)

Wetlands L and M

SFWMD FLUCFCS 6170: Mixed Wetland Hardwoods

USFWS NWI: E2FO3Px (Estuarine, Intertidal, Forested, Broad-Leaved Evergreen, Permanently Flooded, Excavated)

Wetland L and M are similar in vegetative composition and geographic location. Wetlands L and M were historically a contiguous mixed wetland hardwood forest system that is now separated by a narrow upland berm. They are located on the west side of the study area and are hydrologically connected and tidally influenced by the Caloosahatchee River. Canopy species observed within Wetlands L and M include Australian pine, cabbage palm, laurel oak, ear pod tree, and live oak. Subcanopy species observed consisted of Brazilian pepper, Carolina willow, wax myrtle, buttonbush, and saltbush. Clusters of red mangroves were observed scattered throughout the systems, primarily in Wetland L where standing water is present within the SR 31 right-of-way. Other vegetation observed included giant reed, royal fern, giant leather fern, cinnamon fern, cattail, Peruvian primrose willow, flat sedge, and maidencane.

Wetland N

SFWMD FLUCFCS 6170: Mixed Wetland Hardwoods

USFWS NWI: PSS1/3Cd (Palustrine, Scrub-Shrub, Broad-Leaved Deciduous/Broad-Leaved Evergreen, Seasonally Flooded, Partially Drained/Ditched)

Wetland N is located adjacent to a pond site outfall for Pond Site 1-E. This wetland system is bound by low density residential to the north and west, disturbed herbaceous site to the south, and upland shrub to the east. Historically this wetland system was connected to Wetland J but is now separated by an upland berm. Observed canopy species include laurel oak, cabbage palm, and sweet bay. Subcanopy and groundcover species include Brazilian pepper, wax myrtle and cinnamon fern.

Other Surface Waters 1-6

OSWs 1-5 are channelized drainage ditches cut in uplands designed to provide flood control. Five of the six OSWs are located near the SR 31 and SR 80 intersection within the existing right-of-way. OSW 6 is located within the proposed Pond Site 1-E and was excavated for agricultural use.



3.4 Potential Impacts

The Preferred Alternative is being evaluated for the SR 31 from SR 80 to SR 78 PD&E Study that includes widening the two-lane roadway to six lanes, constructing a new high-level fixed bridge to replace the existing Wilson Pigott Bridge, and reconfiguring the existing intersection of SR 31/SR 80 to a grade-separated intersection. The grade-separation would introduce two new flyover bridges for SR 31 and SR 80 movements and would also include a new signal on SR 31. The direct and indirect impacts anticipated from the Preferred Alternative are discussed in the subsections below.

3.4.1 Direct Impacts

The Preferred Alternative will result in direct wetland and surface water impacts. Wetland and surface water impacts for the preferred alternative were calculated based on the estimated project footprint, accounting for the proposed typical section, new bridge, and intersection improvements. Accounting for the proposed typical section, drainage improvements and floodplain compensation areas; the estimated project footprint will result in 15.32 acres of direct wetland impacts and 7.28 acres of surface water impacts (**Table 4**). The FDOT will provide compensation for direct wetland impacts as discussed in Section 3.7.

3.4.2 Indirect Impacts

Potential indirect (i.e. secondary) wetland impacts for the Preferred Alternative were calculated 25 feet beyond the limits of the direct wetland impacts (see **Table 4** below). Indirect impacts were not calculated for OSW impacts because these areas are routinely maintained to prevent flooding and edge effects would be negligible. It is anticipated that the preferred alternative will result in 5.16 acres of indirect wetland impacts. The Department will provide compensation for indirect wetland impacts as discussed in Section 3.7.

Construction and operation of the Preferred Alternative may result in indirect water quality impacts; however, impacts would be minimized through project design and BMPs (e.g., stormwater management and erosion control measures). Therefore, the Preferred Alternative would not contribute to violations of water quality standards.

3.4.3 Cumulative Impacts

Compensatory mitigation for direct and indirect impacts from the Preferred Alternative will be mitigated as described in Section 3.7 below. The Preferred Alternative is located within the mitigation service area of Little Pine Island Mitigation Bank (LPIMB). LPIMB is located in Lee County and within the Charlotte Harbor Aquatic Preserve and Matlacha Pass Aquatic Preserve with a direct hydrologic connection to the Caloosahatchee River and provides habitat for many of the same species that may occur in the project area for this study. The purchase of credits from LPIMB will require a Cumulative Impact Assessment be completed during the permitting phase that provides reasonable assurance the proposed impacts will not have unacceptable cumulative impact on similar wetland types within the same basin.

3.5 Avoidance and Minimization

In accordance with federal and state regulations, avoidance and minimization of wetland impacts were considered in developing the Preferred Alternative. These measures include using the existing right-of-way when practical; proposing a typical section to meet needs of the project and the minimum requirements of the FDOT standard design criteria; collecting stormwater runoff efficiently; evaluating best fit options; widening the existing corridor to avoid or reduce wetland impacts, particularly near the sensitive habitats along the Caloosahatchee River; and implementing *FDOT's Standard Specifications for Road and Bridge Construction*. Additionally, pond sites were selected to avoid direct impacts to wetlands and other surface waters when practicable.

3.6 Wetland Assessment

A wetland assessment was conducted for wetlands and surface waters within the footprint of the Preferred Alternative using the Uniform Mitigation Assessment Method (UMAM), pursuant to Chapter 62-345, FAC. UMAM was used to determine the functional values provided by wetlands and the amount of mitigation required to offset the functional loss associated with the unavoidable wetland impacts. The UMAM assesses three parameters (landscape and location support, water environment, and community structure) in the existing and post-construction condition and uses a scoring method from one to ten, with one being the lowest value and ten being the highest value for wetland parameter functionality. The results of the UMAM assessment, i.e., anticipated functional loss of each wetland, are provided in **Table 4**. Completed UMAM assessment worksheets are provided in **Appendix K.** These values may be refined through coordination and review by the regulatory agencies during project design and permitting.

Wetland or	FLUCFCS Code and Name	Direct Impacts		Indirect Impact	
OSW ID		Acre(s)	Functional Loss	Acre(s)	Functional Loss
Wetland A	6120: Mangrove Swamps	1.35	1.04	0.28	0.05
Wetland B	6120: Mangrove Swamps	0.19	0.13	0.06	0.01
Wetland C	6170: Mixed Wetland Hardwoods	5.12	2.92	0.68	0.12
Wetland D	6170: Mixed Wetland Hardwoods	1.00	0.47	0.25	0.03
Wetland E	6170: Mixed Wetland Hardwoods	0.28	0.14	0.12	0.01
Wetland F	6170: Mixed Wetland Hardwoods	0.11	0.05	0.04	0
Wetland G	6170: Mixed Wetland Hardwoods	0.32	0.20	0.17	0.02
Wetland H	6170: Mixed Wetland Hardwoods	< 0.01	0	0.03	0
Wetland I	6210: Cypress	0.67	0.40	0.20	0.02
Wetland J	6170: Mixed Wetland Hardwoods	0.27	0.15	0.20	0.02
Wetland K	6310: Wetland Scrub	3.58	1.54	2.02	0.20
Wetland L	6170: Mixed Wetland Hardwoods	2.35	1.41	0.90	0.09
Wetland N	6170: Mixed Wetland Hardwoods	0.07	0.04	0.21	0.03

 Table 4: Anticipated Wetland and Surface Water Impacts for the Preferred Alternative

Wotland or		Direc	t Impacts	Indire	ect Impact
OSW ID	FLUCFCS Code and Name	Acre(s)	Functional Loss	Acre(s)	Functional Loss
Total Wetl	and Impacts and Functional Loss	15.32	8.49	5.16	0.60
Surface Water 1	5110: Natural River, Stream, Waterway	5.93*	-	-	-
Surface Water 2	5120: Channelized River, Stream, Waterway	0.89	-	-	-
OSW 1	5140: Upland Cut Ditch	0.16	-	-	-
OSW 2	5140: Upland Cut Ditch	0.09	-	-	-
OSW 3	5140: Upland Cut Ditch	0.03	-	-	-
OSW 4	5140: Upland Cut Ditch	0.13	-	-	-
OSW 6	5140: Upland Cut Ditch	0.05	-	-	-
	Total OSW Impacts	7.28	-	-	-
Total	Wetland and OSW Impacts	22.60	-	5.16	-
*Shading impacts	s. No functional loss or mitigation anticipat	ed.			

3.7 Mitigation

Avoidance and minimization of potential wetland and surface water impacts were incorporated throughout the development of the Preferred Alternative and as the project advances through subsequent phases, avoidance and minimization of wetland impacts will continue to be considered to the maximum extent practicable. Unavoidable direct and indirect impacts to wetlands will be mitigated through the purchase of credits from Little Pine Island Mitigation Bank (LPIMB) to satisfy all mitigation requirements of Part IV, Chapter 373 FS and 33 USC § 1344. LPIMB currently has type-for-type state and federal credits available, including mangrove swamp habitat. LPIMB is located within the Charlotte Harbor Aquatic Preserve and Matlacha Pass Aquatic Preserve and has a direct hydrologic connection to the Caloosahatchee River. LPIMB is a 4,670acre island that provides habitat for many of the same protected species that may utilize habitat within the study area. The purchase of 9.09 credits (1.23 estuarine mangrove credits and 7.86 freshwater forested credits) is estimated for wetland impacts resulting from the Preferred Alternative. It is anticipated that no mitigation will be required for the direct and shading impacts anticipated to surface waters. Final credit amounts will be determined through coordination with the SFWMD and USACE during project design and permitting. Mitigation credits would also offset the loss of wood stork SFH because LPIMB is within the wood stork CFA impacted by the preferred alternative.

The Preferred Alternative has been evaluated in accordance with Federal Executive Order 11990 - "Protection of Wetlands." Given the location of the existing infrastructure, location and landscape of the existing alignment, the purpose and need for the project, these factors preclude any practical alternatives that avoid wetland impacts. Based upon the above considerations, it is determined that there is no practicable alternative to the proposed construction in wetlands and that the proposed action includes all practicable measures to minimize harm to wetlands which may result from such use. Therefore, the proposed project will have no significant short-term or long-term adverse impacts to wetlands.

4.0 ESSENTIAL FISH HABITAT

4.1 Introduction

The NMFS is the regulatory agency responsible for the nation's living marine resources and their habitats, including EFH. This authority is designated by the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), as amended. The MSFCMA defines EFH as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity" (16 USC § 1802(10)]. The study area falls under the jurisdiction of the Gulf of Mexico Fishery Management Council (GMFMC) and the Fisheries Management Plans (FMPs) provide information on Habitat Areas of Particular Concern (HAPC). HAPCs are considered EFH, but with one or more of the following traits: rare, particularly susceptible to human-induced degradation, especially ecologically important, or located in an environmentally stressed area. Section 305 of the MSFCMA (16 USC §1855) requires consultation with the NMFS for potential impacts to EFH.

The GMFMC has designated the following estuarine habitats as EFH for federally managed species: submerged aquatic vegetation, mangroves, drift algae (sargassum), emergent marshes, sand and shell bottoms, soft bottoms (mud, clay, silt), oyster reefs, banks/shoal, reefs, shelf edge/slopes, and water column (associated with pelagic, planktonic, coastal pelagics). In accordance with the MSFCMA, Section 7 of the ESA, and the Essential Fish Habitat chapter of the FDOT's PD&E Manual, the SR 31 study area was evaluated for potential EFH. According to the ETDM Summary Report No. 14359, dated February 19, 2019, NMFS noted the following habitats are designated as EFH and utilized by managed fish species and their prey that may be directly impacted by the project: mangroves; estuarine water column; and mud, sand, shell, and rock substrates. Estuarine habitats, which exist in the project area, have been identified as EFH for coastal migratory pelagics, stone crab (Menippe mercenaria), reef fish, shrimp (Penaeus spp.) and red drum (Sciaenops ocellatus) by the GMFMC under provisions of the MSFCMA. NMFS added that the project may indirectly affect mangroves, seagrasses, and salt marshes located downstream at the mouth of the Caloosahatchee River and in San Carlos Bay. NFMS recommended that the bridge be designed to direct stormwater to retention areas before it is discharged into the Caloosahatchee River and that BMPs be employed during project construction to prevent sedimentation of estuarine and marine habitats. NMFS additionally recommended that ESA Section 7 consultation be conducted for the smalltooth sawfish as the project lies within designated critical habitat for this species. Per NMFS request, an EFH Assessment has been included below.

4.2 Data Collection and Field Surveys

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

- USFWS Information for Planning and Consultation (IPaC) website (accessed 2023);
- USFWS and NOAA critical habitat maps and GIS layers;
- FWC Statewide Seagrass GIS data layer (2022); and
- NOAA EFH mapper (accessed 2023).

According to the GMFMC, the study area does not occur within a HAPC. Portions of the study area are within and immediately adjacent to EFH for coastal migratory pelagics, red drum, reef fish, and shrimp.

The study area contains potential habitat for seagrass and other submerged aquatic vegetation (SAV) that provide EFH; however, the Statewide Seagrass GIS data layer (FWC, 2022) did not identify seagrass within the study area, with the nearest occurrence approximately 4.4 miles to the west. To verify presence/absence, qualified biologists conducted a pedestrian SAV survey of suitable habitat during the seagrass growing season (June 1 to September 30) in accordance with *Recommended Survey Protocols for Estuarine and Marine Submerged Aquatic Vegetation* (FWC, 2011) and *Submerged Aquatic Vegetation Survey Guidelines* (USACE, 2018). Survey transects were spaced a maximum of five feet apart. During the survey, water clarity was low; therefore, the survey was conducted at low tide using an underwater viewer bucket along the shoreline and snorkeling gear for deeper portions of the river. The river substrate consisted of soft bottom silt, sand and clay with small rocks and concrete. No seagrass or macroalgae were observed during the SAV survey. Seagrasses colonization is unlikely within the study area due to high wave energy near the bridge from vessel traffic east and west of the existing bridge, flow of freshwater from Caloosahatchee River, and turbid water conditions from the summer wet season.

During the field reviews, mangroves were also surveyed and mapped using a sub-meter accurate handheld Trimble GPS Unit. Wetlands A and B (described in Section 3.3) are dominated by red and black mangroves. Scattered mangroves were also mapped in Wetlands L and M; however, these areas are currently isolated from the Caloosahatchee River located within drainage swales along SR 31 and no longer provide habitat for marine species.

4.3 Managed Species

Based on the NOAA EFH mapper data and the presence of mangroves, sand and shell bottoms, and soft bottoms (mud, clay, silt), impacts to the following managed species are discussed further: coastal migratory pelagic species, red drum, reef fish, black tip shark (*Carcharhinus limbatus*), bonnethead shark (*Sphyrna tiburo*), bull shark (*Carcharhinus leucas*) and tiger shark (*Galeocerdo cuvier*), and shrimp.

Coastal Migratory Pelagic Species

Coastal Migratory Pelagic species are managed jointly by the GMFMC and South Atlantic Fishery Management Council (SAFMC) and managed species include king mackerel (*Scomberomorus cavalla*), Spanish mackerel (*Scomberomorus maculatus*), and cobia (*Rachycentron canadum*). The study area contains EFH for the coastal migratory pelagics but does not occur within the species' HAPC. EFH for coastal migratory pelagics includes all estuaries from the United States/Mexico border to the boundary between the areas covered by the GMFMC and the SAFMC from estuarine waters out to depths of 100 fathoms. The study area contains open water habitats that could be used by coastal migratory pelagics; however, most of the life cycle of these managed species is coastal inlets, near in- and off- shore habitats. In addition, the study area is approximately 22 miles from the Gulf of Mexico. The Preferred Alternative will include impacts to the open water of Caloosahatchee River; however, given the relatively inland location of the bridge and the footprint of the project compared to the preferred habitat in the region, it is anticipated to have minimal effect to the coastal migratory pelagics.

Red Drum

The study area contains EFH for red drum (*Sciaenops ocellatus*). EFH for red drum includes seagrass, sand, mud and oyster reefs. Red drum can tolerate salinities ranging from freshwater to highly saline. Types of preferred habitat depend upon the life stage of the fish and includes submerged aquatic vegetation, mangroves, emergent marshes, sand and shell bottoms, soft bottoms (mud, clay, silt), and oyster reefs. The study area contains sand and mud substrates and mangroves adjacent to the Caloosahatchee River, which may provide habitat for juvenile red drum. The construction of the Preferred Alternative will impact mangroves, however, it is anticipated that removal of the existing bridge and bridge approaches will provide additional habitat for the red drum. Construction of the bridge may displace red drum in the vicinity of the project; however, these impacts would be temporary. Given minimal impacts to habitat, proposed wetland/EFH mitigation, and the implementation of BMPs during construction, the Preferred Alternative is anticipated to have minimal effects on the red drum.

Shrimp

The study area contains both EFH and HAPC for shrimp, more specifically penaeid shrimp. The penaeid shrimp includes three species: white shrimp (Litopenaeus setiferus), pink shrimp (Farfantepenaeus duorarum) and brown shrimp (Farfantepenaeus aztecus) in the Gulf of Mexico. Brown, white, and pink shrimp all spawn offshore in the Gulf of Mexico and produce demersal eggs, which hatch into pelagic larvae. The pelagic larvae of all three species consume planktonic algae and zooplankton. All three species migrate to estuaries as postlarvae. They all become benthic upon reaching their estuarine nursery grounds. EFH for penaeid shrimp include submerged aquatic vegetation, mangroves, drift algae (sargassum), emergent marshes, sand and shell bottoms, soft bottoms (mud clay, silt), oyster reefs, banks/shoal, reefs, shelf edge/slopes, and water column (associated with pelagic, planktonic, coastal pelagics). The study area contains estuarine wetlands (mangroves) and soft bottom sediments, which could be utilized by shrimp. Although, construction of the Preferred Alternative will impact mangroves, it is anticipated that removal of the existing bridge will provide additional habitat for the penaeid shrimp. Construction of the bridge may displace shrimp in the vicinity of the project; however, these impacts would be temporary. Given minimal impacts to habitat, proposed wetland/EFH mitigation, and the implementation of BMPs during construction, the Preferred Alternative is anticipated to have minimal effects on penaeid shrimp.

Reef Fish

The reef fish contains four families and 42 species of fish. EFH for the reef fish is offshore hard bottoms, offshore reefs, offshore pelagic, nearshore SAV, offshore shelf edge/slope, offshore sand/shell, and nearshore reefs. A planktonic larval stage lives in the water column and feeds on zooplankton and phytoplankton. Juvenile and adult reef fish are typically demersal and usually associated with bottom topographies on the continental shelf on coral reefs, artificial reefs, rocky hard-bottom substrates, ledges and caves, sloping soft-bottom areas, and limestone outcroppings. However, some juvenile snappers, such as mutton (*Lutjanus analis*), gray (*Lutjanus griseus*), red (*Lutjanus campechanus*), dog (*Lutjanus jocu*), lane (*Lutjanus synagris*), and yellowtail snappers (*Ocyurus chrysurus*), and groupers, such as goliath grouper (*Epinephelus itajara*), red

(*Epinephelus morio*), gag (*Mycteroperca microlepis*), and yellowfin groupers (*Mycteroperca venenosa*) have been documented in inshore seagrass beds, mangrove estuaries, lagoons, and larger bay systems. The study area includes mangroves and soft sediment bottom habitats that may be used by these reef fish; however, it is anticipated the Preferred Alternative will have minimal effect to reef fish due to the lack of seagrass within the project area and insignificant impacts to preferred habitat compared to the availability in the region.

4.4 Adverse Effects

The Preferred Alternative was evaluated during the SR 31 from SR 80 to SR 78 PD&E Study. The direct and indirect impacts to EFH anticipated from the Preferred Alternative are discussed in the subsections below.

4.4.1 Direct Impacts

The Preferred Alternative will directly impact 1.54 acres of mangrove wetlands considered EFH (**Table 4**). Compensatory mitigation for direct impacts would be provided as discussed in Section 4.6.

4.4.2 Indirect Effects

The Preferred Alternative will indirectly (i.e., secondary) impact 0.34 acres of mangrove wetlands considered EFH (**Table 4**). Indirect impacts were calculated in EFH areas 25 feet beyond the limits of the direct wetland impacts. Erosion control measures and the use of BMPs during construction would be implemented to provide reasonable assurance the Preferred Alternative would not contribute to violations of water quality standards. Compensatory mitigation for indirect impacts would be provided as discussed in Section 4.6.

4.4.3 Cumulative Effects

Compensatory mitigation for direct and indirect EFH impacts resulting from the Preferred Alternative will be provided from an approved mitigation bank, such as LPIMB. The purchase of credits from LPIMB will require a Cumulative Impact Assessment be completed during the permitting phase that provides reasonable assurance the proposed impacts will not have unacceptable cumulative impact on similar wetland types within the same basin.

4.5 Avoidance and Minimization

In accordance with state and federal regulations, avoidance and minimization of wetland impacts were considered in developing the Preferred Alternative. These measures include using the existing right-of-way when practical; proposing a typical section to meet needs of the project and the minimum requirements of the FDOT standard design criteria; collecting stormwater runoff efficiently; evaluating best fit options; reducing the footprint as much as possible, particularly near the sensitive habitats along the Caloosahatchee River; and implementing FDOT's Standard Specifications for Road and Bridge Construction.

4.6 Mitigation

It is anticipated the Preferred Alternative would result in 1.23 acres of wetland functional loss to habitat considered EFH protected under the MSFCMA. As described within the Wetland Evaluation Section (Section 3.6), the Department will purchase functional credits from the LPIMB to compensate for unavoidable wetland impacts pursuant to Section 373.4137, FS to satisfy all mitigation requirements of Part IV of Ch. 373, FS and 33 USC § 1344. The LPIMB provides estuarine habitat and long-term protection for many of the same managed fisheries within the study area. Mitigation requirements for impacts to EFH, which may include the purchase of additional functional credits from the LPIMB, will be determined through consultation with the NMFS during project design.

4.7 EFH Determination

Given the minor impact to EFH compared to the available habitat in the region and the provision of agency-approved mitigation for unavoidable impacts, it is anticipated the Preferred Alternative has "**more than minimal but less than substantial**" potential for adverse effect to EFH. Any changes to mitigation credit availability will be coordinated with the NMFS during project design and permitting, which is anticipated to directly following the completion of the SR 31 PD&E Study.

5.0 ANTICIPATED PERMITS

The Preferred Alternative would require permits from state and federal regulatory agencies for impacts to wetlands, other surface waters, and water quality. Several agencies, such as USFWS, NMFS, Environmental Protection Agency (EPA), FWC, and the State Historic Preservation Officer (SHPO), would also have the opportunity to review and comment on the permit applications. The FDEP regulates stormwater discharges during construction to prevent sediment and pollutants, that could significantly impact water quality, from entering the adjacent wetlands and surface waters. The anticipated permits associated with the construction of the Preferred Alternative are listed in **Table 5**.

Permit Type	Agency
Section 404 Permit	USACE
Individual Environmental Resource Permit (ERP)	SFWMD
Bridge Permit	USCG
National Pollution Discharge Prevention and Elimination System (NPDES)*	FDEP
SFWMD Right-of-Way Occupancy Permit	SFWMD
*This permit will be obtained by the selected construction contract	ctor

Table 5: Anticipated Permits for the Preferred Alternative

In addition, the new Wilson Pigott Bridge crosses the Caloosahatchee River, land that is designated by the State of Florida as SSL. A new public easement from the Board of Trustees would be required along with a sketch and legal description for the new bridge and construction area that documents the location of this easement.

6.0 CONCLUSIONS

The SR 31 from Palm Beach Boulevard (SR 80) to Bayshore Road (SR 78) PD&E Study was conducted to evaluate alternatives to address roadway deficiencies and capacity improvements. The Preferred Alternative would address those safety and capacity concerns, replace the existing Wilson Pigott Bridge, provide intersection improvements, be designed to current FDOT criteria and implement avoidance and minimization measures to the greatest extent feasible to reduce impacts to wetlands, surface waters, and protected species and their habitat.

The study area was evaluated for the presence of federally and/or state-protected species and their suitable habitat in accordance with Section 7 of the ESA and the PD&E Manual (2023). Pursuant to Section 7 of the ESA, the Preferred Alternative "may affect" the Florida bonneted bat, "may affect, but not likely to adversely affect" the eastern indigo snake, smalltooth sawfish, four marine sea turtles (green, hawksbill, leatherback, and loggerhead sea turtles), Audubon's crested caracara, wood stork, and the west Indian manatee, as summarized in **Table 6**. Additional coordination with FWC, USFWS, and NMFS will be required during the design/permitting phase, and additional wildlife surveys may be required prior to or during construction.

Protected Species		Effort Determination	
Common Name	Scientific Name	Effect Determination	
FISH			
Smalltooth sawfish	Pristis pectinata	"May affect, not likely to adversely affect"	
REPTILES			
Eastern indigo snake	Drymarchon couperi	"May affect, not likely to adversely affect"	
Green sea turtle	Chelonia mydas	"May affect, not likely to adversely affect"	
Hawksbill sea turtle	Eretmochelys imbricata	"May affect, not likely to adversely affect"	
Leatherback sea turtle	Demorchelys coriacea	"May affect, not likely to adversely affect"	
Loggerhead sea turtle	Caretta caretta	"May affect, not likely to adversely affect"	
BIRDS			
Audubon's crested caracara	Polyborus plancus audubonii	"May affect, not likely to adversely affect"	
Wood stork	Mycteria americana	"May affect, not likely to adversely affect"	
MAMMALS			
Florida bonneted bat	Eumops floridanus	"May affect, + further coordination"	
West Indian manatee	Trichechus manatus	"May affect, not likely to adversely affect"	

 Table 6: Summary of Federally Listed Species and Anticipated Effect Determinations

The Preferred Alternative is expected to directly impact approximately 15.32 acres of wetlands and 7.28 acres of surface waters. Based on the Uniform Mitigation Assessment Method (UMAM), wetland impacts may require 1.23 estuarine mangrove credits and 7.86 freshwater forested credits from an approved wetland mitigation bank. Unavoidable wetland impacts will be mitigated pursuant to Section 373.4137, FS to satisfy all mitigation requirements of Part IV of Ch. 373, FS and 33 USC § 1344. The Department proposes to address mitigation requirements by purchasing type-for-type state and federal wetland mitigation credits from the LPIMB. LPIMB provides habitat for many of the same protected species that may occur within the study area. LPIMB

currently has estuarine and palustrine credits available to satisfy the type-for-type mitigation requirements, including estuarine mangrove swamp habitat. Given an approved mitigation plan, the Preferred Alternative is not anticipated to adversely impact wetlands, other surface waters, and protected species and their habitats.

6.1 Implementation Measures

To ensure the project will not adversely affect protected species or contribute to water quality degradation, the Department will perform or adhere to the following measures.

- Conduct surveys for listed plants in suitable habitat prior to construction. If listed plants are observed in the project footprint, the Department will coordinate with the appropriate agency to receive the necessary authorizations prior to construction.
- Conduct a pre-construction survey for gopher tortoises. If gopher tortoise burrows are located within 25 feet of the project footprint, a relocation permit will be obtained from the FWC prior to construction for burrows that cannot be avoided or excluded from project construction.
- Apply BMPs (e.g., erosion and sediment controls) prior to and throughout construction to avoid adverse impacts to wetland and aquatic resources adjacent to the project area.
- Provide compensatory mitigation for wetland impacts resulting from the Preferred Alternative, per 373.4137, FS, and 33 USC § 1344.

6.2 Commitments

To ensure the project will not adversely affect protected species or their habitats, the Department will commit to perform or adhere to the following measures.

- The NMFS *Protected Species Construction Conditions*, NOAA Fisheries Southeast Regional Office will be utilized during construction.
- The most recent version of the USFWS *Standard Protection Measures for the Eastern Indigo Snake* will be utilized during construction.
- The USFWS and FWC *Standard Manatee Construction Conditions for In-Water Work* will be utilized during construction.
- FDOT will require contractors to remove garbage daily from the construction site or use bear proof containers for securing of food and other debris from the project work area to prevent these items from becoming an attractant for the Florida black bear. Any interaction with nuisance bears will be reported to the FWC Wildlife Alert hotline 888-404-FWCC (3922).
- 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.
- Prior to demolition of bridge no. 120064, bat exclusion must be completed to comply with FAC rule 68A-4.001 General Prohibitions; and rule 68A-9.010 Taking Nuisance Wildlife. Per the regulations, exclusion is not permitted during bat maternity season April 15 through August 15. Exclusion devices must be left up for a minimum of four nights and the low temperature must be forecasted to remain above 50 degrees Fahrenheit during that time period.

- Should the listing status of the tricolored bat be elevated by USFWS to Threatened or Endangered and the Preferred Alternative is located within the consultation area during the design and permitting phase of the proposed project, FDOT commits to re-initiating consultation with the USFWS to determine the appropriate survey methodology and to address USFWS regulations regarding the protection of the tricolored bat.
- The NFMS *Vessel Strike Avoidance Measures*, NOAA Fisheries Southeast Regional Office will be utilized during construction.
- A survey for giant leather fern will be performed during the design phase and coordination with FDACS will occur if impacts to the species are anticipated.

6.3 Agency Coordination

This NRE will be submitted to the USFWS, NMFS, and FWC for review and to initiate consultation for the project. In addition, this NRE will be shared with the SFWMD, FDACS and the USACE for informational purposes. The resulting coordination and/or concurrence will be documented in the final environmental document and project file.

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Appendix A: NOAA Protected Species Construction Conditions





PROTECTED SPECIES CONSTRUCTION CONDITIONS, NOAA FISHERIES SOUTHEAST REGIONAL OFFICE

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

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

- 1. **Equipment**–Turbidity curtains, if used, shall be made of material in which protected species cannot become entangled and be regularly monitored to avoid protected species entrapment. All turbidity curtains and other in-water equipment shall be properly secured with materials that reduce the risk of protected species entanglement and entrapment.
 - a. In-water lines (rope, chain, and cable, including the lines to secure turbidity curtains) shall be stiff, taut, and non-looping. Examples of such lines are heavy metal chains or heavy cables that do not readily loop and tangle. Flexible in-water lines, such as nylon rope or any lines that could loop or tangle, shall be enclosed in a plastic or rubber sleeve/tube to add rigidity and prevent the line from looping and tangling. In all instances, no excess line shall be allowed in the water. All anchoring shall be in areas free from hardbottom and seagrass.
 - b. Turbidity curtains and other in-water equipment shall be placed in a manner that does not entrap protected species within the project area and minimizes the extent and duration of their exclusion from the project area.
 - c. Turbidity barriers shall be positioned in a way that minimizes the extent and duration of protected species exclusion from important habitat (e.g. critical habitat, hardbottom, seagrass) in the project area.
- 2. **Operations**–For construction work that is generally stationary (e.g., barge-mounted equipment dredging a berth or section of river, or shore-based equipment extending into the water):
 - a. Operations of moving equipment shall cease if a protected species is observed within 150 feet of operations.

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

- b. Activities shall not resume until the protected species has departed the project area of its own volition (e.g., species was observed departing or 20 minutes have passed since the animal was last seen in the area).
- 3. Vessels–For projects requiring vessels, the action agency, and any permittee shall ensure conditions in the Vessel Strike Avoidance Measures are implemented as part of the project/permit issuance (https://www.fisheries.noaa.gov/southeast/consultations/regulations-policies-and-guidance).
- 4. **Consultation Reporting Requirements**–Any interaction with a protected species shall be reported immediately to NOAA Fisheries SERO PRD and the local authorized stranding/rescue organization.

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

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

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

NOAA Fisheries Enforcement Hotline (800) 853-1964

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

For additional information, please contact NOAA Fisheries SERO PRD at:

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

Revised: May 2021

Appendix B: USFWS Consultation Key for the Eastern Indigo Snake



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.

<u>Habitat</u>

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: <u>https://www.fws.gov/verobeach/ReptilesPDFs/20130812_EIS%20Standard%20Protection%20M</u> <u>easures_final.pdf</u>. 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**," <u>consultation may be concluded</u> <u>informally or formally</u> 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.

Δ	
л.	Project is not located in open water or salt marshgo to B
	Project is located solely in open water or salt marshno effect
Β.	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
	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
C.	The project will impact less than 25 acres of eastern indigo snake habitat (<i>e.g.</i> , 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)
	The project will impact 25 acres or more of eastern indigo snake habitat (<i>e.g.</i> , 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)
D.	The project has no known holes, cavities, active or inactive gopher tortoise burrows, or other <u>underground refugia</u> where a snake could be <u>buried</u> , <u>trapped and/or injured</u> during project activities
	The project has known holes, cavities, active or inactive gopher tortoise burrows, or other <u>underground refugia</u> where a snake could be <u>buried</u> , <u>trapped and /or</u> <u>injured</u>
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
	occupied by an eastern indigo snake, no work will commence until the snake has vacated the vicinity of proposed work

End Key

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 <u>http://imyfwc.com/gophertortoise</u>.

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

Donnie Kinard

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 C: 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 LIVE 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. \hat{A}
- 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 <u>DEAD</u> 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 D: Audubon's Crested Caracara Survey Results Report (May 2023)



MEMORANDUM

DRMP Job #: 18-0080.000

May 10, 2023

Subject: Audubon's Crested Caracara Survey Results Report (*Polyborus plancus audubonii*) January 2023 – April 2023 State Road (SR) 31 from SR 80 to SR 78 Lee County, FL FPID No. 441942-1-22-01

PROJECT INTRODUCTION

The Florida Department of Transportation (Department) is conducting a Project Development and Environment (PD&E) Study to evaluate roadway improvement alternatives for State Road (SR) 31 from Palm Beach Boulevard (SR 80) to Bayshore Road (SR 78) in Lee County, Florida (Attachment A, Figure 1). The improvements consist of widening the existing two-lane roadway to a six-lane urban facility, the replacement of the Wilson Pigott Bridge, and intersection improvements to SR 80, for a project length of approximately 1.4 miles. Additionally, the improvements include raising the profile above the current 100-year floodplain and shifting the northern segment of the roadway 300 feet east of the Wilson Pigott Bridge to minimize impacts to the existing Florida Gas Transmission (FGT) line. The project is located within Sections 24, 25, 36 of Township 43S, Range 25E, and Sections 19 and 30 of Township 43S, Range 26E.

The proposed project falls within the United States Fish and Wildlife Service's (USFWS) Consultation Area for the Audubon's crested caracara (*Polyborus plancus audubonii*) (caracara). This memorandum summarizes the methods and results of a species-specific caracara survey, conducted in January 2023 through April 2023. The lack of caracara and caracara nests observed within the study area, combined with results of previous surveys, provides reasonable assurance that the project "**may affect, but is not likely to adversely affect**" caracara.

HABITAT ANALYSIS

Caracaras utilize open xeric to mesic habitats; their preferred habitat is native dry or wet prairie with associated marshes, cabbage palm (*Sabal palmetto*), and cabbage palm-live oak (*Quercus virginiana*) hammocks. Native prairie habitat has been greatly reduced in Florida by residential development and conversion to agricultural lands. Consequently, caracaras can typically be found nesting and foraging within unimproved and improved pastures.

Adult caracaras maintain and defend large territories, usually with their mates. Breeding activity can occur from September through June with the primary season being from November through April. Suitable nest trees are an important component of caracara habitat. Cabbage palms are most frequently utilized followed by live oaks, cypress (*Taxodium* spp.), and occasionally Australian pine (*Casuarina* spp.), and black gum (*Nyssa sylvatica*). Caracaras usually construct their nests 12-50 feet above ground. Caracara pairs sometimes have two or three alternate nest trees that may be used in different years.

Caracara nests have a protective radius of 1,500 meters (4,920 feet) that includes the primary (flushing distance from the nest) and secondary (foraging territory) habitat surrounding any potential caracara nests.

BDRMP

Therefore, a 1,500-meter study area buffered around the perimeter of the preferred alternative was utilized to include any caracara nest protective radii that may overlap with the project area.

Prior to survey, DRMP reviewed available information and Geographic Information System (GIS) data to locate documented occurrences and potential caracara habitat within the project area. The following information and GIS data were used to conduct the desktop review:

- Aerial photographs of Lee County (ESRI 2022),
- Florida Land Use Cover and Forms Classification System (FLUCFCS) according to the South Florida Water Management District (SFWMD 2014 2016),
- USFWS caracara observation and nest location data (1992-2009), and
- SR 31 Corridor from SR 78 (Bayshore Road) to Cook Brown Road Caracara Survey Report.

Habitat and land use within the study area were classified according to the FLUCFCS. A habitat and land use map is provided in Attachment A, Figure 2. Subsequently, project biologists conducted preliminary site inspections to evaluate the habitat surrounding the proposed study area in August 2019 and June 2020. Land cover classified as FLUCFCS 2110: Improved Pasture located northeast of the existing alignment was field verified, and it was determined that this portion of the study area contains habitat that is capable of supporting crested caracara. Habitat conditions consist of open pasture with high grasses (varying from 6 inches to 2 feet in height) and scattered cabbage palm, Australian pine, Brazilian pepper (*Schinus terebinthifolius*), and Chinese tallow (*Triadica sebifera*). The Caloosahatchee River abuts the suitable habitat to the south, SR 31 on the western boundary, and rural residential on the north and east.

SURVEY METHODOLOGY

In 2020, FDOT conducted a caracara survey for the adjacent segment of the SR 31 corridor from SR 78 (Bayshore Road) to Cook Brown Road, which is located directly north of the proposed project. The caracara survey conducted in 2020 overlaps most of the survey area. Monitoring blocks were established for the 2020 survey; monitoring block 5, as depicted in Attachment A, Figure 3 portrays the overlapping survey areas from the above referenced project. The current survey was conducted January 2023 to April 2023 in accordance with the foraging and nesting survey methodology that was previously approved in 2020. A monitoring block and observation station were established within the study area based on the habitat analysis, as depicted in Attachment A, Figure 4.

Prior to conducting the survey, FDOT coordinated with USFWS for approval of the proposed caracara survey methodology and monitoring location. On November 2, 2022, USFWS agreed that the survey methodology for the project was acceptable; agency coordination is included as Attachment C.

The survey was conducted from one observation station during the first week of January 2023 and continued through the end of April 2023, in accordance with the survey season and survey methodology approved by USFWS. The survey was conducted by qualified observers with experience identifying caracara and their nests (Table 1).

Obsomvon	Obser	rver Role	Hours Conducting Concerns Survive	
Observer	Primary	Secondary	Hours Conducting Caracara Surveys	
Rachel Schmidt (RS)	Х	Х	200+ hours	
David Simpson (DS)	Х	Х	1,000+ hours	
Matty Lane (ML)		Х	50+ hours	

Table 1. DRMP Personnel and Caracara Experience

BDRMP

The survey consisted of a total of nine monitoring events conducted every two weeks that began 15 minutes prior to sunrise and continued for at least three hours. During the survey, observers utilized binoculars, a spotting scope to assist with the spotting of birds or nests at a distance, and a truck and ladder to allow for an elevated view of the region. During each monitoring event, observers completed a Crested Caracara Monitoring Field Data Form that included the project name, observer name(s), start and stop times, weather conditions, and any caracara activity or general observations. Additionally, photographs of the observation station were taken and provided as Attachment C. Table 2 summarizes the field data forms.

	Observers	Time		Weather Conditions				
Date		Start	End	Start/End Temperature (°F)	Start/End Wind	Start/End Cloud Cover	Caracara Observations	
01/04/2023	RS/ML	6:59 am	10:11 am	62°/ 76°	7 mph / 8 mph	<5% / <5%	0	
01/18/2023	RS/ML	6:54 am	10:02 am	57° / 66°	4 mph / 6 mph	0% / <5%	0	
02/01/2023	RS/ML	6:56 am	10:07 am	70° / 77°	Calm / 4mph	0% / 30%	0	
02/15/2023	RS/ML	6:48 am	10:12 am	58° / 77°	3 mph / 6 mph	10% / 15%	0	
03/01/2023	RS/ML	6:56 am	10:00 am	58° / 75°	1 mph / 4 mph	0% / 0%	0	
03/15/2023	RS/ML	7:22 am	10:24 am	58° / 58°	9 mph / 11 mph	80% / 90%	0	
03/29/2023	RS/ML/DS	7:28 am	10:30 am	66° / 79°	3 mph/ 4 mph	40% / 30%	0	
04/12/2023	RS/ML/DS	7:26 am	10:44 am	68° / 76°	11 mph / 9 mph	90% / 90%	0	
04/26/2023	RS/ML/DS	7:04 am	10:17 am	66° / 78°	3 mph/ 4 mph	<5% / <5%	0	

 Table 2. Field Data

Caracaras were observed foraging, perched, and flying over north of the 1,500-meter study area along SR 31 in adjacent farmlands and fencing; however, no individuals or nests were observed from the observation station or during survey events. Other wildlife observed during the survey included red-winged blackbird (*Agelaius phoeniceus*), anhinga (*Anhinga anhinga*), great egret (*Ardea alba*), great blue heron (*Ardea herodias*), cattle egret (*Bubulcus ibis*), red shouldered hawk (*Buteo lineatus*), cardinal (Cardinalis cardinalis), black vulture (*Coragyps atratus*), American crow (*Corvus brachyrhynchos*), blue jay (*Cyanocitta cristata*), swallow-tailed kite (*Elanoides forficatus*), loggerhead shrike (*Lanius ludovicianus*), belted kingfisher (*Megaceryle alcyon*), red-bellied woodpecker (*Melanerpes carolinus*), mockingbird (*Mimus polyglottos*), osprey (*Pandion haliaetus*), boat-tailed grackle (*Quiscalus major*), eastern meadowlark (*Sturnella magna*), and mourning dove (*Zenaida macroura*).

CONCLUSION

Qualified observers conducted a formal caracara survey along SR 31 in Lee County in accordance with the survey protocol and guidance approved by USFWS in 2022. During the January 2023 to April 2023 survey, observers did not observe individuals, territorial and nesting behaviors, or nests within the study area. Based on the results of the 2023 species-specific survey, caracaras do not appear to be actively using the habitat within the study area for nesting or foraging. Therefore, it is anticipated the roadway improvements project will have no direct adverse effect on caracara.

The absence of caracara and caracara nests observed within the study area, combined with similar results from previous surveys, provides reasonable assurance that the proposed project "**may affect, but is not**



likely to adversely affect" caracara. Written concurrence from the USFWS regarding this determination is requested.

REFERENCES

Dwyer, J.F. 2010. Ecology of non-breeding and breeding crested caracaras (*Caracara cheriway*) in Florida.

Florida Department of Transportation. 1999. Florida Land Use, Cover and Forms Classification System. Third Edition. 91pp.

Florida Department of Transportation. 2020. Natural Resources Evaluation – State Road 31 Project Development & Environment (PD&E) Study. Natural Resource Evaluation - SR 31 from SR 78 to Cook Brown Road.pdf (swflroads.com)

U.S. Fish and Wildlife Service, South Florida Ecological Services Office. 2004. Species Conservation Guidelines, South Florida: Audubon's Crested Caracara

Enclosure(s): Attachment A: Figures Attachment B: Photos Attachment C: Agency Coordination



Attachment A: Figures





SR 31 from SR 80 to SR 78 Study Area	
SR 31 from SR 80 to SR 78 1500 m Buffer Radius	
SFWMD Land Use 2014-2016 w/in Study Area	
1000s: Urban and Built-Up	
1110: Fixed Single Family Units, Light Density	
1120: Mobile Home Units	
1180: Rural Residential	
1210: Fixed Single Family Units, Medium Density	
1330: Multiple Dwelling Units, Low Rise	
1840: Marinas and Fish Camps	
1850: Parks and Zoos	
1900: Open Land	
2000s: Agricultural	
2110: Improved Pastures	
2130: Woodland Pastures	
2150: Field Crops	
2210: Citrus Groves	
2410: Tree Nurseries	
2500: Specialty Farms	
DRMP, Inc.	

Legend

3000s: Rangeland 3100: Herbaceous (Dry Prairie) 3200: Shrub and Brushland 3210: Palmetto Prairies 4000s: Upland Forests 4110: Pine Flatwoods 4200: Upland Hardwood Forests 4220: Brazilian Pepper 4280: Cabbage Palm 4340: Upland Mixed Coniferous/Hardwood 4370: Australian Pine 5000s: Water 5110: Natural River, Stream, Waterway 5120: Channelized Waterways, Canals 5300: Reservoirs

- 6000s: Wetlands
- 6120: Mangrove Swamp
- 6170: Mixed Wetland Hardwoods
- 6172: Mixed Shrubs
- 6191: Wet Melaleuca
- 6210: Cypress
- 6215: Cypress-Domes/Heads
- 6216: Cypress Mixed Hardwoods
- 6250: Wet Pinelands Hydric Pine
- 6300: Wetland Forested Mixed
- 6410: Freshwater Marshes / Graminoid Prairie Marsh
- 6430: Wet Prairie



Figure

2-1



Land

P:\GIS\18-0080.000 SR 31\Caracara\Fig 2-1 Caracara

941 Lake Baldwin Ln. Orlando, FL 32814 www.drmp.com Phone: 407-896-0594 Fax: 407-896-4836 PROJECT NUMBER: 18-0080.000

State Road 31 from State Road 80 to State Road 78 FPID: 441942-1-22-01

Lee County, FL

DATA SOURCE: FLUCFCS - SFWMD 2014-2016

SR 31 Study Area

Land Use Map



FPID: 441942-1-22-01

Fax: 407-896-4836

18-0080.000

PROJECT NUMBER:

Lee County, FL

DATA SOURCE: FLUCFCS - SFWMD 2014-2016 2-2

à

DATE

May 2023

DRAWN

BY: BH





P:\GIS\18-0080.000 SR 31\Caracara\Fig 4 Caracara Monitoring Block.mxc



Attachment B: Photos





Observation Station 1: Looking North (01/04/2023)



Observation Station 1: Looking East (01/04/2023)





Observation Station 1: Looking South (01/04/2023)



Observation Station 1: Looking West (01/04/2023)



Attachment C: Agency Coordination

From: Wrublik, John <john wrublik@fws.gov>
Sent: Wednesday, November 02, 2022 1:32 PM
To: Bennett, Jonathon <<u>Jonathon.Bennett@dot.state.fl.us</u>>
Cc: George McLatchey <<u>gmclatchey@drmp.com</u>>; Matter, Melody <<u>Melody.Matter@dot.state.fl.us</u>>
Subject: Re: [EXTERNAL] 441942-1 SR 31 FROM SR 80 (PALM BEACH BLVD) TO SR 78 (BAYSHORE RD) USFWS Caracara Survey Methodology

Jonathon,

I have reviewed the proposed caracara survey methodology for the project and it is acceptable to the Service.

John

John M. Wrublik U.S. Fish and Wildlife Service 1339 20th Street Vero Beach, Florida 32960 Office: (772) 469-4282 Fax: (772) 562-4288 email: John Wrublik@fws.gov

NOTE: This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act (FOIA) and may be disclosed to third parties.

From: Bennett, Jonathon <<u>Jonathon.Bennett@dot.state.fl.us</u>>
Sent: Wednesday, November 2, 2022 1:23 PM
To: Wrublik, John <<u>john wrublik@fws.gov</u>>
Cc: George McLatchey <<u>gmclatchey@drmp.com</u>>; Matter, Melody <<u>Melody.Matter@dot.state.fl.us</u>>
Subject: [EXTERNAL] 441942-1 SR 31 FROM SR 80 (PALM BEACH BLVD) TO SR 78 (BAYSHORE RD) USFWS Caracara Survey Methodology

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

John,

Good afternoon, FDOT is working on species assessment the above-mentioned project, (ETDM 14359) if you could please review the attached Caracara Methodology it would be appreciated. Please let me know if you have any questions.

Thank you,

Jonathon A. Bennett Environmental Project Manager ETDM Coordinator Florida Department of Transportation | District One 801 North Broadway Avenue | Bartow, Florida 33830 PH: (863) 519-2495 EMAIL: Jonathon.Bennett@dot.state.fl.us





Appendix E: Effect Determination Key for the Wood Stork



United States Department of the Interior

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

May 18, 2010



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

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

Dear Mr. Kinard:

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

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

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

Wood stork

<u>Habitat</u>

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



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

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

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

Conservation Measures

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

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

In an effort to reduce correspondence in effect determinations and responses, the Service is providing the Wood Stork Effect Determination Key below. If the use of this key results in a Corps determination of "no effect" for a particular project, the Service supports this determination. If the use of this Key results in a determination of NLAA, the Service concurs with this determination¹. This Key is subject to revisitation as the Corps and Service deem necessary.

The Key is as follows:

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

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

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

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

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

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

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

Pro	oject does not affect SFH"no effect ^{1"} .
B.	Project impact to SFH is less than 0.20 hectare (one-half acre) ⁶ NLAA ¹ ,
	Project impact to SFH is greater in scope than 0.20 hectare (one-half acre)go to C
C.	Project impacts to SFH not within the CFA (29.9 km, 18.6 miles) of a colony site
	Project impacts to SFH within the CFA of a colony sitego to E
D.	Project impacts to SFH have been avoided and minimized to the extent practicable; compensation (Service approved mitigation bank or as provided in accordance with Mitigation Rule 33 CFR Part 332) for unavoidable impacts is proposed in accordance with the CWA section 404(b)(1) guidelines; and habitat compensation replaces the foraging value matching the hydroperiod ⁷ of the wetlands affected and provides foraging value similar to, or higher than, that of impacted wetlands. See Enclosure 3 for a detailed discussion of the hydroperiod foraging values, an example, and further guidance ⁸ NLAA ¹ .
	Project not as above "may affect ⁴ "
E.	Project provides SFH compensation in accordance with the CWA section 404(b)(1) guidelines and is not contrary to the HMG; habitat compensation is within the appropriate CFA or within the service area of a Service-approved mitigation bank; and habitat compensation replaces foraging value, consisting of wetland enhancement or restoration

matching the hydroperiod⁷ of the wetlands affected, and provides foraging value similar

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

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

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

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to, or higher than, that of impacted wetlands. See Enclosure 3 for a detailed discussion of the hydroperiod foraging values, an example, and further guidance⁸......"*NLAA*¹"

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

Monitoring and Reporting Effects

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

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

Sincerely yours. Janan Paul Souza

Field Supervisor South Florida Ecological Services Office

Enclosures

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

LITERATURE CITED

- Ceilley, D.W. and S.A. Bortone. 2000. A survey of freshwater fishes in the hydric flatwoods of flint pen strand, Lee County, Florida. Proceedings of the 27th Annual Conference on Ecosystems Restoration and Creation, 70-91. Hillsborough Community College; Hillsborough County, Florida.
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Appendix F: Florida Bonneted Bat Roost Survey Results Report (January 2023)

FPID: 441942 1 22 01 SR 31 FROM SR 80 (PALM BEACH BLVD) TO SR 78 (BAYSHORE RD)

FLORIDA BONNETED BAT (*EUMOPS FLORIDANUS*) ROOST SURVEY

LEE COUNTY, FLORIDA

26 January 2023

Prepared for:

U.S. Fish and Wildlife Service South Florida Ecological Services Office 1339 20th Street Vero Beach, FL 32960-3559

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Appendix Appendix A: Photographs

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1.0 Introduction

Environmental Solutions & Innovations, Inc. (ESI) was contracted by DRMP, Inc. (DRMP) to conduct a survey for the Florida bonneted bat (*Eumops floridanus*) on the proposed 66-acre (26.87 ha) State Road (SR) 31 from SR 80 (Palm Beach Blvd.) to SR 78 (Bayshore Rd.) Project in Lee County, Florida (Project; Figure 1). Appendix A provides photographs of the Project's Area of Investigation (AOI).

The Project is within the U.S. Fish and Wildlife Service (USFWS) Consultation Area for the Florida bonneted bat. Per USFWS, previous Florida bonneted bat acoustic surveys established presence within the Project area; therefore, a roost survey was requested to document potential roosts within the AOI.

2.0 Ecological Setting

2.1 Description

The Florida bonneted bat is the largest bat found in Florida. Individuals have short, glossy fur darker on the dorsal side and lighter on the ventral side, and hairs are bicolored as the bases are white (Timm and Genoways 2004). The fur may vary in color from black to brown to brownish gray or cinnamon brown (Timm and Genoways 2004). Forearm length ranges from 2.4 to 2.7 inches (60.0 to 69.1 mm) (Ober et al. 2017). The head and body length range from 5.1 to 6.5 inches (130 to 165 mm). Although Timm and Genoways (2004) describe the species without sexual dimorphism, further study indicates males are slightly larger than females and possess gular glands, which are absent in females (Ober et al. 2017).



2.2 Status

The USFWS listed the Florida bonneted bat as endangered on 2 October 2013 (USFWS 2013). The species was considered a sub-species of Wagner's mastiff bat



(*Eumops glaucinus*) and was described as a separate species in 2004 (Timm and Genoways 2004). In the U.S., seven species of bats are within the family Molossidae, and the Florida bonneted bat is the only federally listed species. Factors affecting species' status include threats to roosting and foraging habitat, inadequacy of existing regulatory protections prior to listing, and other natural or manmade factors, particularly small population size, restricted range, low fecundity, and few, isolated colonies (USFWS 2013).

The International Union for Conservation of Nature Red List (IUCN) assessed the Florida bonneted bat in October 2015 and categorized it as vulnerable due to low population size and limited distribution. The species is thought to continue declining and population estimates range from 3,000-5,000 individuals (IUCN 2016).

In June 2020, USFWS introduced a proposal to designate approximately 1.5 million acres (607,028 ha) in 10 counties as critical habitat for the Florida bonneted bat under the Endangered Species Act (ESA) (USFWS 2020). However, an updated proposal in November 2022 revised the critical habitat total to approximately 1.2 million acres (475,105 ha) in 13 counties (USFWS 2022).

Additionally, the species is protected as a federally designated endangered species by the Florida Fish and Wildlife Conservation Commission (FWC).

2.3 Species Distribution

The Florida bonneted bat has one of the most restricted distributions of any bat in North America, with records from only 12 counties in southern Florida: Charlotte, Collier, DeSoto, Glades, Hendry, Highlands, Lee, Miami-Dade, Monroe, Okeechobee, Osceola, and Polk (Timm and Genoways 2004, USFWS 2013).

Most known records of Florida bonneted bats are on federal-, state-, or countymanaged lands; however, a few exist on lands under private ownership. The USFWS defines the Florida bonneted bat's general distributable range, or Consultation Area, using confirmed presence data, key habitat features, reasonable flight distances, and home range sizes. Current Consultation Area requirements extend out 15 miles (24 km) from a known roost representing the distance Florida bonneted bats likely travel on a given night. In 2019, USFWS extended the Consultation Area to include all or parts of 17 counties. Justification for the extension was derived using home range sizes, key habitat features, and presence/absence data (USFWS 2019).

2.4 Ecology

Compared to other listed bat species in the U.S., relatively little is known about the Florida bonneted bat. Recent studies are beginning to provide valuable information critical for the species' future.

2.4.1 Roosting Ecology

The Florida bonneted bat is known to roost in a variety of man-made structures and natural roosts including under the Spanish tile of buildings, in low shrubbery, and in growths of tropical flowers and shrubs in residential Miami, Coconut Grove, and Coral Gables (Best et al. 1997). Individuals were also located roosting in bald cypress (*Taxodium distichum*), rock outcrops, chimneys, and beneath barrel roof tiles (Gore et al. 2015). Natural roosts include shafts of royal palms (*Roystonea regia*) and cavities excavated by red-cockaded woodpeckers (*Picoides borealis*), and sometimes enlarged by pileated woodpeckers (*Dryocopus pileatus*), in longleaf pines (*Pinus palustris*) (Best et al. 1997). In recent years, individuals were discovered occupying a cavity in a longleaf pine at Avon Park Air Force Range in Osceola County and a cavity in a slash pine (*Pinus elliottii*) in Florida Panther National Wildlife Refuge in Collier County (Braun de Torrez et al. 2016). The species may also use utility poles or highway structures (i.e., bridges).

Artificial bat boxes provide potential roosting habitat for the Florida bonneted bat. The species was observed roosting in bat boxes in the Fred C. Babcock/Cecil M. Webb Wildlife Management Area (BWWMA) (Ober et al. 2017). Boxes are primarily found in mesic and hydric pine flatwoods proximate other habitat types such as basin wetlands (USFWS 2013).

The Florida bonneted bat roosts in small colonies usually composed of a male and a harem of females. Roosting in tree cavities may allow a male to better defend the roost from other males (Belwood 1981).

2.4.2 Maternity Season

Evidence suggests Florida bonneted bats are polyestrous as pregnant bats have been found in early summer and September in Florida (Belwood 1981, Timm and Genoways 2004). Pregnant females were documented in April and August, and males with descended testes in both months and in December. The same study found non-volant pups eight months out of the year, but no individual female was pregnant more than once within a given year (Ober et al. 2016). Females give birth to one offspring each maternity season (USFWS 2013). Like other bats, females leave the young in the roost to forage during the lactation period. In the latter portion of the maternity season, the young forage with the females until the young can sufficiently forage alone (USFWS 2013).

2.4.3 Food Habits and Foraging Ecology

The species is insectivorous and known to primarily feed on flying insects such as beetles (Coleoptera), true bugs (Hemiptera), and true flies (Diptera) (Belwood 1981). Florida bonneted bats rely on open spaces for foraging and tend to avoid clutter as they are fast fliers, but not as agile as smaller bats (Best et al. 1997). Recent evidence potentially suggests males and females occupy separate foraging niches, as modest sexual dimorphism in wing morphology occurs (Ober et al. 2017). Florida bonneted

bats rarely fly below 30 feet (9 m) (Timm and Genoways 2004). Important foraging areas include wetlands and open, fresh water such as ponds and streams where they also fly low to drink water (USFWS 2013).

2.5 Survivorship/Population Size

Population size of the Florida bonneted bat is unknown; however, it is thought to be less than that needed for optimum viability (Timm and Arroyo-Cabrales 2008). Additional studies will provide more insight; however, initial thoughts range from fewer than a few hundred individuals (Marks and Marks 2008) to a number in the hundreds or low thousands (FWC 2011).

2.6 Causes of Past/Current Decline

Habitat loss and modification and other natural and manmade factors appear to influence the Florida bonneted bat. Management practices such as live or dead tree removal or prescribed burns potentially destroy roosts. The species' ability to adapt to roost in human structures puts it at risk to purposeful or inadvertent harm from humans. Activities such as utility pole removal or bridge maintenance can disturb maternity roosts or cause mortality in a situation where awareness of Florida bonneted bat's sensitivity is lacking (USFWS 2013)

Small population size, restricted range, isolated colonies, and low fecundity can allow stochastic or catastrophic events to be severely detrimental to the Florida bonneted bat. Factors also create a bottleneck effect making the species vulnerable to genetic drift. With such a restrictive range and likely small population size, the Florida bonneted bat becomes more vulnerable to demographic, stochastic, and environmental processes (USFWS 2013).

Competition for tree cavities as roosts is high. Florida bonneted bats must compete for roosts with a variety of native and non-native wildlife. Competition increased due to loss of habitat and potential roost trees (PRTs) resulting from development (USFWS 2013).

Several factors potentially adversely affecting the Florida bonneted bat are not yet examined including artificial light pollution, pesticides, disease, predation, and impacts from wind facilities (USFWS 2013).

3.0 Methods

ESI conducted surveys following the October 2019 *Florida Bonneted Bat Consultation Guidelines* (USFWS 2019) (2019 Guidelines).

3.1 Level of Effort

Given Florida bonneted bats were previously detected in the area, roost surveys are conducted within all types and age classes of forest within AOI. Habitat with high Florida bonneted bat roosting suitability includes areas with abundant presence of large or mature live trees with various deformities including, but not limited to: large cavities, hollows, and sloughing bark. Potential roost trees are typically greater than 33 feet (10 m) in height and 8 inches (20 cm) in diameter at breast height (DBH) with cavities at least 16 feet (5 m) above ground.

3.2 Survey Methods for Natural Cavities

Line transects are established through potential roosting habitat and all trees and snags are inspected for evidence of cavities. Transects are oriented north to south and spaced according to habitat density. Locations of cavities observed are recorded using a GPS unit. Tree species, type of cavity structure, tree diameter and height, cavity height, and cavity orientation are also recorded. PRT quality is estimated as high, moderate, or low. PRTs are designated low-quality when potential roosting features, such as palm fronds, loose bark, or gouges, are too tight or shallow to search with a wireless cavity camera and are easily assessed using visual methods. Moderate-quality PRTs have up to two cavities and possibly loose bark but are less than 30 feet (9.14 m) in estimated height. High-quality PRTs present cavities, peeling bark or the base of palm fronds, are over 16 feet (4.9 m) above ground level, have sufficient solar exposure, and are generally mid to upper canopy trees. Cavities, if possible, are scoped using a wireless camera mounted to a telescoping fiberglass pole system. Cavity contents and height are documented.

3.3 Survey Methods for Artificial Structures

Artificial structures (such as abandoned buildings, bridges/culverts, and wooden utility poles) are visually inspected for evidence of bats. Evidence potentially includes cavities, crevices, staining at entrance to cavity or crevice, guano, and/or auditory chirping sounds.

4.0 Results

Habitat assessments and PRT surveys were completed on 19 January 2023. Habitat within the Project area varied. The small, northern tip of the Project area bordered to the south by the Caloosahatchee River consisted of open pasture with scattered trees, primarily sabal palms (*Sabal palmetto*). South of the river along the east and west side of SR 31, habitat was primarily forested with few developed areas. Large trees in the area included sabal palm and southern live oak (*Quercus virginiana*). The understory was primarily characterized by dense areas of tall herbaceous vegetation and shrubs.

Developed areas were characterized by few large sabal palms. No cavities were observed on trees in any of the areas along SR 31 north or south of the Caloosahatchee River.

Areas along the north and south sides of SR 80 were primarily developed lands and comprised few clusters of sabal palm, southern live oak, and small sand live oak (*Quercus geminata*). However, one small section along the southern side of SR 80 and east of the intersection with SR 31 was forested with a small stand of bald cypress in a wet area. The understory was moderate to dense with numerous saplings and shrubs. No trees with cavities were observed in this area.

The portion of the project detached from the main thoroughfares to the northwest (only accessible via Wildwood Lane) consisted of open tall grass with no trees and few wooden power poles on the eastern side. Cavities were not observed in any nearby trees nor in the few wooden power poles present.

5.0 Discussion

During surveys completed 19 January 2023, no trees along the Project exhibited cavities or other potential roosting features. Multiple large sabal palms had superficial gouges inadequate for providing any shelter for a bat seeking an area to roost. In addition, wooden powerline poles observed throughout the Project area did not possess any holes or cavities suitable for use by Florida bonneted bats.

Given no potential roosts were observed, Florida bonneted bat roosting is not expected present within the AOI. Some areas of the Project, such as the open pasture just to the north of the Caloosahatchee River, potentially provide Florida bonneted bats foraging opportunities and possibly explain any positive detections from previous acoustic surveys.

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APPENDIX A PHOTOGRAPHS



West End of SR-80 Photo 1



West End of SR-80 Photo 2



Western End to Central Section of SR-80 Photo 1



Western End to Central Section of SR-80 Photo 2



Western End to Central Section of SR-80 Photo 3



Western End to Central Section of SR-80 Photo 4



Western End to Central Section of SR-80 Photo 5



Intersection of SR-80 and SR-31 Photo 1



Intersection of SR-80 and SR-31 Photo 2



Intersection of SR-80 and SR-31 Photo 3



Eastern End of SR-80 Photo 1



Eastern End of SR-80 Photo 2



Forested Section of Eastern End of SR-80 Photo 1



Forested Section of Eastern End of SR-80 Photo 2



Forested Section of Eastern End of SR-80 Photo 3



Forested Section of Eastern End of SR-80 Photo 4



Forested Section of Eastern End of SR-80 Photo 5



Forested Section of Eastern End of SR-80 Photo 6



Forested Section of Eastern End of SR-80 Photo 7



Forested Section of Eastern End of SR-80 Photo 8



Eastern End of SR-80 Photo 3



Eastern End of SR-80 Photo 4



Eastern End of SR-80 Photo 5



Eastern End of SR-80 Photo 6



Eastern End of SR-80 Photo 7



Eastern End of SR-80 Photo 8



Northwest Section off Wildwood Lane Photo 1



Northwest Section off Wildwood Lane Photo 2



Northwest Section off Wildwood Lane Photo 3



Northwest Section off Wildwood Lane Photo 4



Northwest Section off Wildwood Lane Photo 5



Northwest Section off Wildwood Lane Photo 6



Southern Section of SR-31 Photo 1





Southern Section of SR-31 Photo 3



Southern Section of SR-31 Photo 4



Southern Section of SR-31 Photo 5





Southern Section of SR-31 Photo 7



Southern Section of SR-31 Photo 8



Southern Section of SR-31 Photo 9





Southern Section of SR-31 Photo 11





Southern Section of SR-31 Photo 13





Southern Section of SR-31 Photo 15





Southern Section of SR-31 Photo 17



Southern Section of SR-31 Photo 18



Southern Section of SR-31 Photo 19





Southern Section of SR-31 Photo 21





Southern Section of SR-31 Photo 23





SR-31 Section North of the Caloosahatchee River Photo 1



SR-31 Section North of the Caloosahatchee River Photo 2



SR-31 Section North of the Caloosahatchee River Photo 3



SR-31 Section North of the Caloosahatchee River Photo 4



SR-31 Section North of the Caloosahatchee River Photo 5



SR-31 Section North of the Caloosahatchee River Photo 6

Appendix G: USFWS Consultation Key for the Florida Bonneted Bat



United States Department of the Interior

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



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

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

Dear Mr. Zinszer:

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

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

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

Roosting habitat

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

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

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

Foraging habitat

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

The Service recognizes that the movement information comes from only one site (BWWMA and vicinity), and data are from small numbers (n=20) of tagged individuals for only short periods of time (Webb 2018a-b). We expect that across the Florida bonneted bat's range differences in
habitat quality, prey availability, and other factors will result in variable habitat use and home range sizes between locations. Foraging distances and home range sizes in high quality habitats are expected to be smaller while foraging distances and home range sizes in low quality habitat would be expected to be larger. Regardless, we use these studies as our best available information to evaluate when changes to foraging habitat may have an effect on the species ability to feed, breed, and shelter and subsequently result in incidental take. When considering where most of the nightly activity was observed, we calculate a foraging area centered on a roost with a 1 mile radius would include approximately 2,000 acres, and a foraging area centered on a 9.5 mile radius would encompass approximately 181,000 acres, on any given night.

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

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

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

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

Determinations

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

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

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

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

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

MANLAA-C: If the use of the Key results in a determination of MANLAA-C, further consultation with the Service is required to confirm that the Key has been used properly, and the Service concurs with the evaluation of the survey results. Survey results should be submitted with the consultation request.

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

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

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

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

Sincerely, Roxanna Hinzman

Field Supervisor South Florida Ecological Services

Enclosure

Cc: electronic only

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

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

FLORIDA BONNETED BAT CONSULTATION GUIDELINES

October - 2019

The U.S. Fish and Wildlife Service's South Florida Ecological Services Field Office (Service) developed the Florida Bonneted Bat Consultation Guidelines (Guidelines) to assist in avoiding and minimizing potential negative effects to roosting and foraging habitat, and assessing effects to the Florida bonneted bat (Eumops floridanus) from proposed projects. The Consultation Key within the Guidelines assists applicants in evaluating their proposed projects and identifying the appropriate consultation paths under sections 7 and 10 of the Endangered Species Act of 1973 (Act), as amended (87 Stat. 884; 16 U.S.C. 1531 et seq.). These Guidelines are primarily for use in evaluating regulatory projects where development and land conversions are anticipated. These Guidelines focus on conserving roosting structures in natural and semi-natural environments. The following Consultation Area map (Figure 1 and Figure 2, Appendix A), Consultation Flowchart (Figure 3), Consultation Key, Survey

Framework (Appendices B-C), and Best Management Practices (BMPs) (Appendix D) are based upon the best available scientific information. As more information is

obtained, these Guidelines will be revised as appropriate. If

you have comments, or suggestions on these Guidelines or the Survey Protocols (Appendix B and C), please email your comments to FBBguidelines@fws.gov. These comments will be reviewed and incorporated in an annual review.

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

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

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

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

Use of Consultation Area, Flowchart, and Key

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

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

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

Using the Key and Consultation Flowchart

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

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

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



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



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

Florida Bonneted Bat Consultation Key[#]

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

la.	Proposed project or land use change is partially or wholly within the Consultation Area (Figure 1)Go to 2
1b.	Proposed project or land use change is wholly outside of the Consultation Area (Figure 1)No Effect
<mark>2a.</mark>	Potential FBB roosting habitat exists within the project areaGo to 3
2b.	No potential FBB roosting habitat exists within the project areaGo to 13
3a.	Project size/footprint* \leq 5 acres (2 hectares) Conduct Limited Roost Survey (Appendix C) then Go to 4
<u>3b.</u>	Project size/footprint* > 5 acres (2 hectares)Conduct Full Acoustic/Roost Surveys (Appendix B) then
	Go to 6
4a.	Results show FBB roosting is likely
4b.	Results do not show FBB roosting is likelyMANLAA-P if BMPs (Appendix D) used and survey reports are submitted. Programmatic concurrence.
-	
5a. 5b.	Project will affect roosting habitatLAA ⁺ Further consultation with the Service required. Project will not affect roosting habitat
<mark>6a.</mark>	Results show some FBB activity
6b.	Results show no FBB activityNo Effect
70	Desults show FDD reacting is likely.
/a.	Cesuits show FBB loosting is likely
7a. <mark>7b.</mark>	Results do not show FBB roosting is likely
7a. <mark>7b.</mark> 8a	Results on ot show FBB roosting is likely
7a. <mark>7b.</mark> 8a. 8b.	Results show FBB roosting is likely
7a. 7b. 8a. 8b. 9a.	Results show FBB roosting is likely
7a. 7b. 8a. 8b. 9a.	Results show FBB roosting is likely
7a. 7b. 8a. 8b. 9a. 9b.	Results show FBB roosting is likely
7b. 7b. 8a. 8b. 9a. 9b.	Results show FBB roosting is likely
7b. 7b. 8a. 8b. 9a. 9b. 10a. 10b.	Results show FBB roosting is likely
7a. 7b. 8a. 8b. 9a. 9b. 10a. 10b.	Results show FBB roosting is likely
 7a. 7b. 8a. 8b. 9a. 9b. 10a. 10b. 11a. 	Results show FBB roosting is likely
 76. 7b. 8a. 8b. 9a. 9b. 10a. 10b. 11a. 11b. 	Results show FBB roosting is likely
7a. 7b. 8a. 8b. 9a. 9b. 10a. 10b. 11a.	Results show FBB roosting is likely
 7a. 7b. 8a. 8b. 9a. 9b. 10a. 10b. 11a. 11b. 12a. 	Results show FBB roosting is likely
 7a. 7b. 8a. 8b. 9a. 9b. 10a. 10b. 11a. 11b. 12a. 	Results show FBB roosting is likely

if BMPs (Appendix D) used and survey reports are submitted. Programmatic concurrence.

13a.	FBB foraging habitat exists within the project area <u>and</u> foraging habitat will be affected
13b.	FBB foraging habitat exists within the project area <u>and</u> foraging habitat will not be affected OR no FBB foraging habitat exists within the project area No Effect
14a. 14b.	Project size* > 50 acres (20 hectares) (wetlands and uplands)
15a. 15b.	Project is within 8 miles (12.9 kilometers) of high quality potential roosting areas [^] Conduct Full Acoustic Survey (Appendix B) and Go to 16 Project is not within 8 miles (12.9 kilometers) of high quality potential roosting area [^] MANLAA-P if BMPs (Appendix D) used. Programmatic concurrence.
16a. 16b.	Results show some FBB activity
17a. 17b.	Results show high FBB activity/useLAA ⁺ Further consultation with the Service required. Results do not show high FBB activity/use

If you are within the urban environment and you are renovating an existing artificial structure (with or without additional ground disturbing activities), these Guidelines do not apply. The Service is developing separate guidelines for consultation in these situations. Until the urban guidelines are complete, please contact the Service for additional guidance
*Includes wetlands and uplands that are going to be altered along with a 250- foot (76.2- meter) buffer around these areas if the parcel is larger than the altered area.

⁺Project modifications could change the LAA determinations in numbers 5, 8, 9, 11, 12, and 17 to MANLAA determinations. [^]Determining if high quality potential roosting areas are within 8 mi (12.9 km) of a project is intended to be a desk-top exercise looking at most recent aerial imagery, not a field exercise.



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

Appendix H: Effect Determination Key for the Manatee

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

Purpose and background of the key

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

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

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

Scope of the key

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

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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.

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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*

- 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 structure³ 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 Maps⁴); [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*.]

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	9. installation of temporary structures (docks, buoys, etc.) utilized for special events such as boat race 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.].				
	Proj	ect is other than the activities listed aboveC			
C.	Proj	ect is located in an Important Manatee Area (IMA) (see Glossary and accompanying Maps ⁴)D			
	Proj	ect is not located in an Important Manatee Area (IMA) (see Glossary and accompanying Maps ⁴)G			
D.	Proj	ect includes dredging of less than 50,000 cubic yardsE			
	Proj	ect does not include dredgingG			
E.	Proj	ect is for dredging a residential dock facility or is a land-based dredging operationN			
	Proj	ect not as aboveF			
F.	Proj IMA	ect proponent does not elect to follow all dredging protocols described on the maps for the respective A in which the project is proposed			
	Proj whie	ect proponent elects to follow all dredging protocols described on the maps for the respective IMA in ch the project is proposed			
G.	Proj park dry floa allo	ect provides new ⁵ access for watercraft, <i>e.g.</i> , docks or piers, marinas, boat ramps and associated trailer ing spaces, new dredging, boat lifts, pilings, floats, floating docks, floating vessel platforms, boat slips, storage, mooring buoys, or other watercraft access (residential boat lifts, pilings, floating docks, and ting vessel platforms installed in existing slips are not considered new access) or improvements wing increased watercraft usage			
	Proj dređ acce num usag	ect does not provide new ⁵ access for watercraft, <i>e.g.</i> , bulkheads, seawalls, riprap, maintenance ging, boardwalks and/or the maintenance (repair or rehabilitation) of currently serviceable watercraft iss structures provided all of the following are met: (1) the number of slips is not increased; (2) the ber of existing slips is not in question; and (3) the improvements do not allow increased watercraft geN			
H.	Proj acco	ect is located in the Braden River Area of Inadequate Protection (Manatee County) (see Glossary and ompanying AIP Map ⁴)			
	Proj and	ect is not located in the Braden River Area of Inadequate Protection (Manatee County) (see Glossary accompanying AIP Map ⁴)			
I.	Proj	ect is for a multi-slip facility (see Glossary)J			
	Proj	ect is for a residential dock facility or is for dredging (see Glossary)N			
J.	Proj Cite Sar (Lai	ect is located in a county that currently has a State-approved MPP in place (BREVARD, BROWARD, RUS, CLAY, COLLIER, DUVAL, INDIAN RIVER, LEE, MARTIN, MIAMI-DADE, PALM BEACH, ST. LUCIE, ASOTA, VOLUSIA) or shares contiguous waters with a county having a State-approved MPP in place KE, MARION, SEMINOLE) ⁶			
	Proj	ect is located in a county not required to have a State-approved MPPL			

K.	Project has been developed or modified to be consistent with the county's State-approved MPP <u>and</u> has been verified by a FWC review (or FWS review if project is exempt from State permitting) <u>or</u> the number of slips is below the MPP thresholdN					
	Project has not been reviewed by the FWC or FWS <u>or</u> has been reviewed by the FWC or FWS <u>and</u> determined that the project is not consistent with the county's State-approved MPP <i>May affect</i>					
L.	Project is located in one of the following counties: CHARLOTTE, DESOTO ⁷ , FLAGLER, GLADES, HENDRY, HILLSBOROUGH, LEVY, MANATEE, MONROE ⁷ , PASCO ⁷ , PINELLAS					
	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					
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)					
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					
	Project impacts to submerged aquatic vegetation ⁸ , emergent vegetation or mangrove may adversely affect the manatee ¹⁰ <i>May affect</i>					
О.	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					
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 <u>or</u> 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 " <i>May affect, not likely to adversely affect</i> " 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 " <i>May affect, not likely to adversely affect</i> " 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 " <i>May affect, not likely to adversely affect</i> " determinations. If project is for repair or rehabilitation of a multi-slip facility and: (1) is <u>not</u> located in an Important Manatee Area; (2) the number of slips is not increased; (3) the number of existing slips is not in					

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 appropriate¹² 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 appropriate¹² and no further consultation with the Service is necessary. <u>Note</u>: 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 new⁵ multi-slip facility, residential dock facility, shoreline stabilization, or dredging, and does not provide new⁵ access for watercraft or

improve an existing access to allow increased watercraft usage, the determination of "May affect, not likely to adversely affect" is appropriate¹² 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 appropriate¹¹ 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 <u>Corps' web page</u>. 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 <u>FWC's web page</u>).

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 <u>Corps' web page</u>], 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 <u>Corps' web page</u>],

Manatee Key April 2013 version Page 6 of 12 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 <u>Corps' web page</u> 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) watercraftaccess 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 (*Juncus 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

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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.

Manatee Key April 2013 version Page 9 of 12 **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.

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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 projectspecific 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 I: Standard Manatee Conditions for In-Water Work

STANDARD MANATEE CONDITIONS FOR IN-WATER ACTIVITIES

During in-water work in areas that potentially support manatees all personnel associated with the project should be instructed about the potential presence of manatees, manatee speed zones, and the need to avoid collisions with and injury to manatees. All personnel should be advised that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act of 1972 and the Endangered Species Act of 1973. Additionally, personnel should be instructed not to attempt to feed or otherwise interact with the animal, although passively taking pictures or video would be acceptable.

All on-site personnel are responsible for observing water-related activities for the presence of manatee(s). We recommend the following to minimize potential impacts to manatees in areas of their potential presence:

- All work, equipment, and vessel operation should cease if a manatee is spotted within a 50-foot radius (buffer zone) of the active work area. Once the manatee has left the buffer zone on its own accord (manatees must not be herded or harassed into leaving), or after 30 minutes have passed without additional sightings of manatee(s) in the buffer zone, inwater work can resume under careful observation for manatee(s).
- If a manatee(s) is sighted in or near the project area, all vessels associated with the project should operate at "no wake/idle" speeds within the construction area and at all times while in waters where the draft of the vessel provides less than a four-foot clearance from the bottom. Vessels should follow routes of deep water whenever possible.
- If used, siltation or turbidity barriers should be properly secured, made of material in which manatees cannot become entangled, and be monitored to avoid manatee entrapment or impeding their movement.
- Temporary signs concerning manatees should be posted prior to and during all in-water project activities and removed upon completion. Each vessel involved in construction activities should display at the vessel control station or in a prominent location, visible to all employees operating the vessel, a temporary sign at least 8½ " X 11" reading language similar to the following: "CAUTION BOATERS: MANATEE AREA/ IDLE SPEED IS REQUIRED IN CONSTRUCTION AREA AND WHERE THERE IS LESS THAN FOUR FOOT BOTTOM CLEARANCE WHEN MANATEE IS PRESENT". A second temporary sign measuring 8½ " X 11" should be posted at a location prominently visible to all personnel engaged in water-related activities and should read language similar to the following: "CAUTION: MANATEE AREA/ EQUIPMENT MUST BE SHUTDOWN IMMEDIATELY IF A MANATEE COMES WITHIN 50 FEET OF OPERATION".
- Collisions with, injury to, or sightings of manatees should be immediately reported to the Service's Louisiana Ecological Services Office (337/291-3100) and the Louisiana Department of Wildlife and Fisheries, Natural Heritage Program (225/765-2821). Please provide the nature of the call (i.e., report of an incident, manatee sighting, etc.); time of incident/sighting; and the approximate location, including the latitude and longitude coordinates, if possible.

Appendix J: Southeastern American Kestrel Survey Results Report (April 2023)



MEMORANDUM

DRMP Job #: 18-0080.000

May 4, 2023

Subject: Species-specific Survey for Southeastern American Kestrel (*Falco sparverius paulus*) Spring 2023 State Road (SR) 31 from SR 80 to SR 78 Lee County, FL FPID No. 441942-1-22-01

PROJECT INTRODUCTION

The Florida Department of Transportation (Department) is conducting a Project Development and Environment (PD&E) Study to evaluate roadway improvement alternatives for State Road (SR) 31 from Palm Beach Boulevard (SR 80) to Bayshore Road (SR 78) in Lee County, Florida. The improvements consist of widening the existing two-lane roadway to a six-lane urban facility, the replacement of the Wilson Pigott Bridge, and intersection improvements to SR 80, for a project length of approximately 1.4 miles. Additionally, the improvements include raising the profile above the current 100-year floodplain and shifting the northern segment of the roadway 300 feet east prior to the Wilson Pigott Bridge to minimize impacts to the existing Florida Gas Transmission (FGT) line. The project is located within Sections 12, 13, 24, and 25 of Township 43S, Range 25E, and Sections 7, 18, 19, and 30 of Township 43S, Range 26E. The study area includes areas within 200 feet of the preferred alternative (Figure 1: Project Location Map).

Suitable foraging habitat includes land cover with open, low herbaceous vegetation or low scrub oaks with patchy open sandy areas such as sandhill and open pine savannah maintained by fire, open pine habitats, woodland edges, prairies, pastures, and other agricultural lands. During preliminary field surveys, kestrel habitat was observed throughout the study area in open lands and woodland edges. Due to the presence of suitable habitat, DRMP conducted a species-specific survey in March and April 2023 in accordance with the *Species Conservation Measures and Permitting Guidelines for the Southeastern American Kestrel* (FWC, 2020) to determine if the study area provides foraging habitat or supports nesting kestrel pairs.

Florida Fish and Wildlife Conservation Commission (FWC) survey and permitting guidelines (Stys 1993 and FWC 2020) were utilized as guidance in developing survey methods and analyzing survey results.

SURVEY METHODOLOGY

Surveys were conducted for a total of three (3) survey events once each week from March 29–April 12, 2023. Surveys were conducted on calm days with high visibility between the hours of 7:00AM to 11:00AM, please refer to Attachment C for the field data sheets that contain the survey dates, start and end times, and weather conditions. A combination of vehicular and pedestrian transects were utilized to survey the project area (Figure 2: Kestrel Survey Map), covering all potentially suitable habitat. Proposed transect length and distance between transects varied based on vegetative conditions. For vehicular transects, a driving speed of 10–25 mph was maintained, varying in response to terrain, road condition, and visibility. Pedestrian transects were walked at a steady pace. Each vehicular and pedestrian transects was traversed over three separate survey days. Please refer to Attachment B for photos of the transects.

No kestrel individuals, or suitable nesting cavities were observed during the species-specific survey.



Table 1: Field Data

Survey		Time		Weather			Kestrels
Date	Observer(s)	Start	End	Temperature (Fahrenheit)	Cloud Cover (%)	Wind Speed	Observations
3/29/23	RS & DS	7:14am	9:45am	67	30	5mph W	0
4/5/23	ML & BH	7:23am	10:26am	67	0-5	1mph NNW	0
4/12/23	RS & DS	7:19am	9:44am	68	50-60	10mph ENE	0

RS: Rachel Schmidt; DS: David Simpson; ML: Matty Lane; BH: Brady Hart

CONCLUSION

Based on the results of the 2023 species-specific survey, kestrels do not appear to be actively using the habitat within the study area for nesting or foraging and no active or inactive nest cavities were observed during the survey. Therefore, the proposed project would not result in the incidental take of the southeastern American kestrel and would have no adverse effect anticipated for the Southeastern American kestrel.

REFERENCES

Florida Fish and Wildlife Conservation Commission (FWC) 2020. Species Conservation Measures and Permitting Guidelines: Southeastern American Kestrel (*Falco sparverius paulus*) Tallahassee, FL. 26 pp.

Stys, B. 1993. Ecology and habitat protection needs of the southeastern American kestrel (*Falco sparverius paulus*) on large-scale development sites in Florida. Florida Game and Fresh Water Fish Comm., Nongame Wildlife Program Tech. Rep. No. 13. Tallahassee, FL. 35pp.

Enclosure(s): Attachment A: Figures Attachment B: Kestrel Survey Areas Photos



Attachment A: Figures











Attachment B: Kestrel Survey Area Photos





Picture 1: Suitable habitat north of the Caloosahatchee River



Picture 2: Suitable habitat north of the Caloosahatchee River




Picture 3: Woodland edge within the existing SR 31 right-of-way



Picture 4: Open area along the existing SR 31 right-of-way

Appendix K: Uniform Mitigation Assessment Methodology (UMAM) Forms

Site/Project Name		Application Number	r		Assessment Area Name	or Number			
SR 31 from SR 80 to SR 78	PD&E Study				Wetla	and A			
FLUCCs code	Further classifica	tion (optional)		Impac	t or Mitigation Site?	Assessme	nt Area Size		
6120		Mangrove Swam	o		Impact	1.35	Acres		
Basin/Watershed Name/Number / Tidal Caloosahatchee	Affected Waterbody (Clas	SS)	Special Classificati	ON (i.e.C	DFW, AP, other local/state/federal	designation of	importance)		
Geographic relationship to and hydr	ologic connection with	wetlands, other su	ands, other surface water, uplands						
Wetland A is located along the no Pigott Bridge. Wetland A is hydro	Wetland A is located along the northern shoreline of the Caloosahatchee River and on the northeast quadrant of the existing Wilson Pigott Bridge. Wetland A is hydrologically connected to a ditch to the north, that is located on the east side of the SR 31 roadway.								
Assessment area description									
This wetland consists predominately of re rush, wax myrtle, primrose willow, Carolin is tidally influenced and located to its sou	ed and black mangroves a a willow, cabbage palm, g th and an upland pasture	long the shoreline of jiant leather fern, and is located to the nor	the Caloosahatchee Brazilian pepper. In th of the assessment	River. relation area.	Other vegetative species ir n to the assessment area, t	clude pond he Caloosal	apple, spike hatchee River		
Significant nearby features			Uniqueness (co landscape.)	nsideri	ing the relative rarity in	relation to	the regional		
Caloosahatchee River		This is a common wetland for this region							
Functions			Mitigation for prev	vious p	permit/other historic use)			
Shoreline stabilization and protect fish nursery, water quality, nutries	tion, storm buffer, w nt uptake	ildlife habitat,	None						
Anticipated Wildlife Utilization Based that are representative of the assess be found)	d on Literature Review sment area and reasor	(List of species nably expected to	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)						
It is anticipated that this system n areas for fishes, crustaceans and for a multitude of marine species. shorebirds, wading birds, snakes	nay be used as a prot shellfish, as well as Can also be utilized , turtles, frogs, snails	tected nursery foraging habitat by various s, invertebrates.	Smalltooth sawf stork (FT) foragi Blue Heron (ST) Spoonbill (ST) fo (ST) foraging	iish (F ing, Fl forag oragin	E) juvenile habitat and orida Bonneted Bat (F ing, Reddish Egret (S ig, Tricolored Heron (S	d nursery, E) foragir T) foragin ST) foragir	Wood ng, Little g, Roseate ng, Alligator		
Observed Evidence of Wildlife Utiliz	ation (List species dire	ctly observed, or o	other signs such a	s track	ks, droppings, casings,	nests, etc.)):		
Wading bird tracks along shorelir	IE.								
Additional relevant factors:									
Assessment conducted by:			Assessment date	e(s):					
Rachel Schmidt			03/16/23						

te/Project N	ame:	SR 80 to SP 7	78 PD&F Study	Application Number:		A	ssessment Area	a Name or Number: Wetland A				
oact or Mitig	gation:	SK 60 10 SK 7	or Dae Study	Assessment Conducted by:		A	ssessment Date	e:				
		Direct Impac	ct	Rachel Sch	midt		03/16/23					
	Scoring Guida	nce	Optimal (10)	Moderate(7)		Minim	nal (4)	Not Present (0)				
The scoring at would be or s	g of each indica e suitable for th urface water as	ator is based on ne type of wetland ssessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but maintain most wetland/surface wat	sufficient to erfunctions	Minimal level of support of wetland/surface water functions Condition is insufficient to pr wetland/surface water func						
00(6)(a) Lo	ocation and La	ndscape Support	Optimal to moderate River and mangroves that may utilize the AA	e quality and quantity of ad throughout the region prov ; minimal invasive species	jacent hat vides habi	bitat and active the end of the e	cess for will ntire life cyc lian pepper	dlife; the Caloosahatchee cle of many marine specie observed along the outsi				
Current]	With Impact	provide minimal bar	riers or flow restrictions for	fish and	wildlife; the	adjacent br	idge/roadway contributes				
	1		excess noise and acti impacts to wildlife;	livity that may deter some s downstream habitats (the o	pecies fro	om utilizing river) derive	the AA and significant	provide moderate advers benefits from AA quality				
7		0	,									
Current 8		With Impact	observed along the sh	y; vegetation was appropria oreline; wildlife usage was bridge; current was gener	ate for the less than ally suffici	ecommunity expected d ent for the c	v type, red a lue to the p community	and black mangroves wer roximity of the roadway a type.				
.500(6	i)(c) Communit	y Structure										
	Ve	egetation	Desirable species are	present within the manarov	<i>v</i> e svstem	(red and bl	ack manar	oves): observed but minin				
	Be	enthic	invasice/exotic spec observed; generally go silt, sand and clay wit	ies are present (Brazilian p bod plants' condition; Benth h small rocks and concrete	pepper); n nic commu e. No subr	ormal new (unity of the nerged aqua	growth or re river substra atic vegetat	egeneration of mangroves ate consisted of soft botto ion is present. Seagrass				
Current		With Impact	west of	f the existing bridge and flo	ow of fresh	nwater from	Caloosaha	tchee River.				
8		0										
Raw Scor (if u	e = Sum of ab uplands, divide	ove scores/30 by 20)		Impact Acres =	1.35							
Current		With Impact		Functional Loss (FL)								
0.77		0.00	FL	= ID x Impact Acres =	1.04							
	Impact Delta	(ID)	NOTE: If impact is	proposed to be mitigated at a mitigat	ion bank that							
	-		is equal to Function	nal Loss (FL). If impact mitigation is p	roposed at a							

Site/Project Name		Application Numbe	ber Assessment Area Name or Number							
SR 31 from SR 80 to SR 78	PD&E Study				Wetla	and A				
FLUCCs code	Further classifica	tion (optional)		Impac	t or Mitigation Site?	Assessmer	nt Area Size			
6120	I	Mangrove Swam	p		Impact	0.28	Acres			
Basin/Watershed Name/Number Af	fected Waterbody (Clas	ss)	Special Classificati	ON (i.e.C	DFW, AP, other local/state/federal	designation of	importance)			
Tidal Caloosahatchee										
Geographic relationship to and hydrol	logic connection with	wetlands, other su	urface water, uplar	nds						
Wetland A is located along the northern shoreline of the Caloosahatchee River and on the northeast quadrant of the existing Wilson Pigott Bridge. Wetland A is hydrologically connected to a ditch to the north, that is located on the east side of the SR 31 roadway.										
Assessment area description										
This wetland consists predominately of red rush, wax myrtle, primrose willow, Carolina is tidally influenced and located to its south	l and black mangroves a willow, cabbage palm, g n and an upland pasture	long the shoreline of jiant leather fern, and is located to the nor	i the Caloosahatchee d Brazilian pepper. In th of the assessment	e River. relatio tarea.	Other vegetative species in n to the assessment area, t	iclude pond he Caloosah	apple, spike natchee River			
Significant nearby features			Uniqueness (co landscape.)	nsider	ing the relative rarity in	relation to	the regional			
Caloosahatchee River			This is a commo	on wet	land for this region					
Functions			Mitigation for pre-	vious p	permit/other historic use)				
Shoreline stabilization and protect fish nursery, water quality, nutrient	ion, storm buffer, w t uptake	ildlife habitat,	None							
Anticipated Wildlife Utilization Based that are representative of the assessr be found)	on Literature Review nent area and reasor	(List of species hably expected to	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)							
It is anticipated that this system ma areas for fishes, crustaceans and s for a multitude of marine species. (shorebirds, wading birds, snakes,	ay be used as a prot shellfish, as well as Can also be utilized turtles, frogs, snails	tected nursery foraging habitat by various s, invertebrates.	Smalltooth sawf stork (FT) foragi Blue Heron (ST) Spoonbill (ST) fo (ST) foraging	fish (F ing, Fl forag oragin	E) juvenile habitat and orida Bonneted Bat (F ing, Reddish Egret (S ig, Tricolored Heron (S	d nursery, FE) foragin T) foraging ST) foragin	Wood ng, Little g, Roseate ng, Alligator			
Observed Evidence of Wildlife Utilization	tion (List species dire	ctly observed, or o	other signs such a	s track	ks, droppings, casings,	nests, etc.)	:			
Wading bird tracks along shoreline).									
Additional relevant factors:										
Assessment conducted by:			Assessment date	e(s):						
Rachel Schmidt			03/16/23							

ite/Project Na	ame: SR 31 from	SR 80 to SR 7	78 PD&E Study	Application Number:			Assessment Area	a Name or Number: Wetland A
pact or Mitig	gation:	Indirect Impa	ict	Assessment Conducted by: Rachel Schm	nidt		Assessment Date	e: 03/16/23
,	Scoring Guida	ince	Optimal (10)	Moderate(7)		Mini	mal (4)	Not Present (0)
The scoring hat would be or su	g of each indica e suitable for th urface water a	ator is based on ne type of wetland ssessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but su maintain most wetland/surface wate	ufficient to rfunctions	Minimal leve wetland/s fun	el of support of urface water ctions	Condition is insufficient to provide wetland/surface water functions
500(6)(a) Lo Current 7	ocation and La	ndscape Support With Impact 5	Optimal to moderate River and mangroves that may utilize the AA perimeter; wildlife acc provide minimal bar excess noise and act impacts to wildlife; Indirect impacts to connectivity or dow bar	e quality and quantity of adja throughout the region provi x; minimal invasive species cess is somewhat limited fro riers or flow restrictions for f ivity that may deter some sp downstream habitats (the di o location and landscape su nstream benefits are anticip riers/access and reduce the	acent hat des habi present, om the ac fish and becies fro tch and r pport are bated, ho quality c	bitat and ad tat for the of some Braz djacent pas wildlife; the orn utilizing river) derivu e minimal b wever, the of habitat a	ccess for wild entire life cyo zilian pepper sture and fen e adjacent br the AA and e significant because no c larger footp djacent to th	dlife; the Caloosahatchee cle of many marine specie observed along the outsic icing; downstream benefits idge/roadway contributes provide moderate adverss benefits from AA quality. changes to hydrological rint may increase wildlife e bridge.
.500(6)(b) Water Environment (n/a for uplands) Water level and flow is appropriate for the community type, the Caloosatchee River is tidally influence epps and flows; water level indicators were observed via drift lines and rafted debris; soil is appropriate mangrove community; vegetation was appropriate for the community type, red and black mangroves observed along the shoreline; wildlife usage was less than expected due to the proximity of the roadwa bridge; current was generally sufficient for the community type. No impacts to the water environment anticipated because construction methods will implement all BMPs and follow water quality standar								ver is tidally influenced an oris; soil is appropriate for and black mangroves were roximity of the roadway ar he water environment are water quality standards.
8 8 .500(6)(c) Community Structure Desirable species are invasice/exotic species				present within the mangrove ies are present (Brazilian pe bod plants' condition; Benthi h small rocks and concrete. Iv within the AA due to high idge and flow of freshwater ge effects such as the pote unities. Plant health conditio	e system epper); n c commu No subr wave er from Cal ntial for i ns may b ew bridg	(red and b ormal new unity of the nergy near oosahatch nvasive sp pe tempora e.	plack mangro growth or re river substra- uatic vegetat the bridge fr ee River. Th pecies to be i arily affected	oves); observed but minim generation of mangroves ate consisted of soft botto ion is present. Seagrasse om vessel traffic east and e community structure ma introduced and changes ir during construction of the
			т г					
Raw Score (if u	e = Sum of at uplands, divide	oove scores/30 e by 20)		Impact Acres =	0.28			
Current		With Impact		Functional Loss (FL)				
0.77		0.60	FL	= ID x Impact Acres =	0.05			
	Impact Delta	(ID)	NOTE: If impact is	proposed to be mitigated at a mitigatio	n bank that			
Current - w/Impact 0.17 was assessed usin Current - w/Impact 0.17 cannot be used to the assessed usin was assessed usin is equal to Function mitigation bank th cannot be used to the assessed usin mitigation bank th the assessed usin the assesse			at was not assessed using UMAM, ti assess impacts; use the assessment	posed at a hen UMAM t method of				

Site/Project Name	Application I	Number	Assessment Area Name	or Number			
SR 31 from SR 80 to SR 78 PD	&E Study		Wetl	and B			
FLUCCs code	Further classification (option	al)	Impact or Mitigation Site?	Assessment Area Size			
6120	Mangrove S	Swamp	Impact	0.19 Acres			
Basin/Watershed Name/Number Affect	ed Waterbody (Class)	Special Classificati	On (i.e.OFW, AP, other local/state/federa	I designation of importance)			
Tidal Caloosahatchee							
Geographic relationship to and hydrologi	c connection with wetlands, o	ther surface water, upla	nds				
Wetland B is located along the southe Pigott Bridge. Wetland B is bordered to wetlands to the east.	ern shoreline of the Caloosa by the existing roadway on	hatchee River and on the west, upland open	the southeast quadrant of t land to the south, and hydi	he existing Wilson rologically connected			
Assessment area description							
This wetland consists predominately of red and black mangroves along the shoreline of the Caloosahatchee River. Other vegetative species include Carolina willow, giant reed, primrose willow, mimosa tree, elderberry, cabbage palm, wax myrtle, and Brazilian pepper. In relation to the assessment area, the Caloosahatchee River is tidally influenced and located to its north and open upland area with dense herbaceous groundcover is located to the south of the assessment area.							
Significant nearby features Uniqueness (considering the relative rarity in relation to th landscape.)							
Caloosahatchee River		This is a commo	on wetland for this region				
Functions		Mitigation for pre	vious permit/other historic use	Э			
Shoreline stabilization and protection fish nursery, water quality, nutrient up	, storm buffer, wildlife habit otake	^{at,} None					
Anticipated Wildlife Utilization Based on that are representative of the assessmen be found)	Literature Review (List of spent tarea and reasonably expect	cies Anticipated Utiliza ted to classification (E, assessment area	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)				
It is anticipated that this system may areas for fishes, crustaceans and she for a multitude of marine species. Car shorebirds, wading birds, snakes, tur	be used as a protected nurs Ilfish, as well as foraging ha a also be utilized by various tles, frogs, snails, invertebra	abitat ates. Smalltooth sawi stork (FT) foragi Blue Heron (ST) Spoonbill (ST) for (ST) foraging	iish (FE) juvenile habitat an ing, Florida Bonneted Bat (I foraging, Reddish Egret (S oraging, Tricolored Heron (S	d nursery, Wood FE) foraging, Little T) foraging, Roseate ST) foraging, Alligator			
Observed Evidence of Wildlife Utilization	(List species directly observe	ed, or other signs such a	s tracks, droppings, casings,	nests, etc.):			
Wading bird tracks along shoreline.							
Additional relevant factors:							
The area is highly utilized by the publi the assessment area.	ic for fishing from the shore	eline. Fishing equipme	nt and other various debris	were observed within			
Assessment conducted by:		Assessment date	e(s):				
Rachel Schmidt		03/16/23					

Site/Project N	ame: SR 31 from	SR 80 to SR 7	8 PD&E Study	Applic	ation Number:	-		Assessment Area	a Name or Number: Wetland B		
pact or Mitig	gation:	Direct Impac	st	Asses	sment Conducted by: Rache	I Schmidt		Assessment Date	e: 03/16/23		
	Scoring Guida	200	Ontimal (10)		Modorato/	7)	Minit	mal (4)	Not Present (0)		
The scoring that would be or s	g of each indica e suitable for th urface water as	ator is based on ne type of wetland ssessed	Condition is optimal a supports wetland/surfa functions	and fully ace water mair	dition is less than optim ntain most wetland/surfa	al, but sufficient to ace waterfunctions	Minimal leve wetland/su fund	el of support of urface water ctions	Condition is insufficient to provide wetland/surface water functions		
500(6)(a) Lo	ocation and La	ndscape Support	Less than optin and mangrove may utilize th outside perim	nal quality a s throughou he AA; invas neter; wildlife	and quantity of ac it the region prov sive species pres access is some	ljacent habitat ides habitat for ent, becoming what limited fro	and access r the entire more dom om the sur	s for wildlife life cycle of inant movin rounding lan	; the Caloosahatchee River many marine species that g landwardand along the id uses (ie residential and		
Current]	With Impact	commercial d wildlife: the adia	developmen cent bridge/	t); downstream b /roadway and hu	enefits provide nan activitiv in	minimal b the area c	arriers or flo ontributes e	w restrictions for fish and xcess noise and activity that		
6		0	may deter some	e species from utilizing the AA and provide moderate adverse impacts to wildlife; downst habitats (the river) derive significant benefits from AA quality							
Current 7		With Impact	epps and nows; mangrove con invasives; wildli	, water leve mmunity; so ife usage wa bridę	me vegetation w me vegetation w as less than expe ge; current was g	as inappropriat acted due to the enerally suffici	e for the c e human a ent for the	community ty ctivity and p community	pe due to the presence of roximity of the roadway and type.		
.500(6	6)(c) Communit	y Structure									
	Ve Be Be	egetation enthic oth	Desirable sp mangroves wer landward; mir adjacent habitat bottom silt, s	pecies are p re observed nimal new g is fire supp sand and cla	resent within the along the shorel rowth or regener ressed and over ay with small rock	mangrove sys ine, however, i ation of mangre grown. Benthic s and concrete	atem (red a nvasive ex oves obser c communi e. No subm	nd black ma otics specie ved; genera ty of the rive nerged aqua	ingroves), red and black s dominated as you moved illy good plants' condition; r substrate consisted of sof tic vegetation is present.		
Current		With Impact	east	and west of	the existing brid	ge and flow of	freshwater	from Caloo	sahatchee River.		
7		0									
Raw Scor (if u	re = Sum of ab uplands, divide	ove scores/30 by 20)		Impa	ct Acres =	0.19					
Current]	With Impact		Fu	Inctional Loss (FL)						
0.67		0.00		[For Im] FL = ID x	bact Assessment Areas	.]: 0.13					
		Ι		import is see	od to be mainted at	mitigation basil di si	l				
	Impact Delta	(ID)	NOTE: If i was asses is equal to	Impact is propos ssed using UMA o Functional Los	ed to be mitigated at a AM, then the credits red s (FL). If impact mitigat	mitigation bank that quired for mitigation ion is proposed at a					
Current -	w/Impact	0.67	mitigation cannot be the mitigai	i parik that was e used to asses iton bank.	s impacts; use the ass	essment method of					

Site/Project Name	Application Num	ber		Assessment Area Name o	or Number		
SR 31 from SR 80 to SR 78 PD	&E Study			Wetla	and B		
FLUCCs code	Further classification (optional)		Impact	t or Mitigation Site?	Assessmer	nt Area Size	
6120	Mangrove Swa	np		Impact	0.06	Acres	
Basin/Watershed Name/Number Affect	ed Waterbody (Class)	Special Classificati	on (i.e.C	FW, AP, other local/state/federal	designation of	importance)	
Tidal Caloosahatchee							
Geographic relationship to and hydrolog	c connection with wetlands, other	surface water, upla	nds				
Wetland B is located along the southe Pigott Bridge. Wetland B is bordered to wetlands to the east.	ern shoreline of the Caloosahate by the existing roadway on the v	hee River and on vest, upland open	the so land t	utheast quadrant of the south, and hydroid the south, and hydroid the south of the	he existing ologically	g Wilson connected	
Assessment area description							
This wetland consists predominately of red an giant reed, primrose willow, mimosa tree, elder tidally influenced and located to its north and o	d black mangroves along the shoreline berry, cabbage palm, wax myrtle, and E open upland area with dense herbaceou	of the Caloosahatchee razilian pepper. In rela is groundcover is loca	e River. Ition to t ted to th	Other vegetative species in the assessment area, the C ne south of the assessment	clude Caroli aloosahatch t area.	na willow, ee River is	
Significant nearby features	Uniqueness (co landscape.)	nsideri	ng the relative rarity in	relation to t	the regional		
Caloosahatchee River	This is a commo	This is a common wetland for this region					
Functions		Mitigation for pre-	vious p	permit/other historic use			
Shoreline stabilization and protection fish nursery, water quality, nutrient up	, storm buffer, wildlife habitat, otake	None					
Anticipated Wildlife Utilization Based on that are representative of the assessmen be found)	Literature Review (List of species and reasonably expected t	Anticipated Utilization by Listed Species (List species, their legal o classification (E, T, SSC), type of use, and intensity of use of the assessment area)					
It is anticipated that this system may areas for fishes, crustaceans and she for a multitude of marine species. Car shorebirds, wading birds, snakes, tur	be used as a protected nursery Ilfish, as well as foraging habita n also be utilized by various tles, frogs, snails, invertebrates	t stork (FT) foragi Blue Heron (ST) Spoonbill (ST) for (ST) foraging	fish (F ing, Fl foragi oragin	E) juvenile habitat and orida Bonneted Bat (F ing, Reddish Egret (S g, Tricolored Heron (S	d nursery, E) foragin T) foraging ST) foragin	Wood Ig, Little g, Roseate Ig, Alligator	
Observed Evidence of Wildlife Utilization	(List species directly observed, o	r other signs such a	s track	s, droppings, casings, r	nests, etc.)	:	
Wading bird tracks along shoreline.							
Additional relevant factors:							
The area is highly utilized by the publ the assessment area.	ic for fishing from the shoreline	Fishing equipme	nt and	other various debris	were obse	rved within	
Assessment conducted by:		Assessment date	e(s):				
Rachel Schmidt		03/16/23					

			UNIFORM WETLAND MI Form 62-345.900(2	TIGATION ASSESSMENT WOR 2), F.A.C. (See Sections 62-345	KSHEET	- PART II - II .600, F.A.C.)	MPACT)					
Site/Project N	lame:			Application Number:			Assessment Area	a Name or Number:				
	SR 31 from	SR 80 to SR 7	78 PD&E Study	-				Wetland B				
Impact or Miti	igation:	Indirect Impa	act	Assessment Conducted by: Rachel Schn	nidt		Assessment Date	e: 03/16/23				
	Scoring Guida	nce	Optimal (10)	Moderate(7)		Mini	imal (4)	Not Present (0)				
The scoring what would b or s	g of each indica e suitable for th surface water as	ator is based on ne type of wetland ssessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but s maintain most wetland/surface wate	ufficient to erfunctions	Minimal level of support of wetland/surface water functions Condition is insufficient to wetland/surface water fu						
.500(6)(a) Lo	ocation and Lar	ndscape Support	Less than optimal qua and mangroves throu may utilize the AA; outside perimeter; w commercial develop wildlife; the adjacent b	ality and quantity of adjacen ughout the region provides h invasive species present, b vildlife access is somewhat pment); downstream benefit ridge/roadway and human a	t habitat habitat fo becoming limited fr s provide activitiy in	and acces r the entire more dom om the sur minimal b the area o	s for wildlife life cycle of ninant movin rrounding lan parriers or flo contributes e	the Caloosahatchee River many marine species that g landwardand along the d uses (ie residential and w restrictions for fish and xcess noise and activity that				
Current		With Impact	may deter some speci habitats (the river) c	es from utilizing the AA and lerive significant benefits fro	l provide om AA qu	moderate Iality. Indir	adverse imp ect impacts	acts to wildlife; downstream to location and landscape				
6 4 support are minimal because no changes to hydrological connectivity or downstream benefits are anticipated however, the larger footprint may increase wildlife barriers/access and reduce the quality of habitat adjacen to the bridge.												
.500(r Current 7	6)(b) Water En (n/a for uplan	vironment ds) With Impact 7	Water level and flow i epps and flows; water mangrove communi invasives; wildlife usa bridge; current was anticipated becaus	Water level and flow is appropriate for the community type, the Caloosatchee River is tidally influenced and epps and flows; water level indicators were observed via drift lines and rafted debris; soil is appropriate for a mangrove community; some vegetation was inappropriate for the community type due to the presence of nvasives; wildlife usage was less than expected due to the human activity and proximity of the roadway and bridge; current was generally sufficient for the community type. No impacts to the water environment are anticipated because construction methods will implement all BMPs and follow water quality standards.								
.500(6 Current 7	6)(c) Communit Ve Be Bc	y Structure egetation enthic bth With Impact 5	Desirable species mangroves were obse landward; minimal r adjacent habitat is fire bottom silt, sand ar Seagrasses colonizati east and west of the structure may be affec changes in reger	are present within the many erved along the shoreline, h new growth or regeneration of suppressed and overgrown nd clay with small rocks and on is unlikely within the AA e existing bridge and flow of the due to edge effects suc- neration opportunities. Plant construction	grove sys owever, i of mangr . Benthic I concrete due to hi f freshwa th as the t health con on of the	stem (red a invasive ex oves obse c communi e. No subn gh wave e ter from C potential fo conditions n new bridge	and black ma kotics specie rved; genera ity of the rive nerged aqua nergy near th aloosahatch or invasive s may be temp e.	ingroves), red and black s dominated as you moved Illy good plants' condition; er substrate consisted of soft tic vegetation is present. he bridge from vessel traffic ee River. The community pecies to be introduced and borarily affected during				
Raw Scor (if	re = Sum of ab uplands, divide	ove scores/30 by 20)		Impact Acres =	0.06							
Current]	With Impact	 	Eurotional Land (51)		l						
0.67	1	0.53		Functional Loss (FL) [For Impact Assessment Areas]:	0.01							
Impact Delta (ID) NOTE: If impact is proposed to be mitigated at a mitigation bank that was assessed using UMAM, then the credits required for mitigation is proposed at a mitigation bank that was not assessed using UMAM, then UMAM												
Guireilt	Wimpact	0.14	the mitigaiton bank									

Site/Project Name		Application Number	er		Assessment Area Name	or Number	
SR 31 from SR 80 to SR 78	PD&E Study				Wetla	und C	
FLUCCs code	Further classification	tion (optional)		Impac	t or Mitigation Site?	Assessment Area S	lize
6170	Mixed	d Wetland Hardw	voods		Impact	5.12 Acres	
Basin/Watershed Name/Number At	ffected Waterbody (Clas	ss)	Special Classificati	ON (i.e.C	DFW, AP, other local/state/federal	designation of importance	e)
Tidal Caloosahatchee							
Geographic relationship to and hydro	logic connection with	wetlands, other s	urface water, upla	nds			
Wetland C is located east of the ex development to the north, east, an	kisting SR 31 corrido d south.	or and part of a la	iger wetland syst	em th	at is surrounded by re	sidential	
Assessment area description							
Mixed wetland hardwoods canopy consisti Carolina willow, buttonwood , pond apple, cattail, Peruvian primrose willow, swamp li	ing of cabbage palm, live marlberry , wax myrtle, ar ly , para grass, torpedo g	oak, laurel oak, Aus nd saltbush . Herbac rass, Baker's cordgi	tralian pine, and mela ceous vegetation and rass, flat sedge , Virg	aleuca. I groune inia cha	Subcanopy vegetation con d cover consists of giant re ain fern, pickerel weed, and	sists of Brazilian pep ed, giant leather fern, climbing hempweed.	oper,
Significant nearby features			Uniqueness (co landscape.)	nsider	ing the relative rarity in	relation to the region	onal
Caloosahatchee River		This is a common wetland for this region					
Functions			Mitigation for pre-	vious p	permit/other historic use		
Water retention/nutrient uptake, flo foraging habitat	ood control, water qu	uality, wildlife	None				
Anticipated Wildlife Utilization Based that are representative of the assess be found)	on Literature Review ment area and reason	(List of species hably expected to	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)				
Various wading birds, snakes, frog invertebrates.	gs, turtles, alligators	, snails,	Wood stork (FT) Florida Bonnete (ST), Roseate Sj (ST) , Eastern In), Bald d Bat boonb digo \$	l Eagle (Bald Eagle (68 (FE), Little Blue Heror ill (ST), Tricolored Hei Snake (FT)	A-16.002, F.A.C), ı (ST), Reddish Eç on (ST), Alligator	gret
Observed Evidence of Wildlife Utiliza	tion (List species dire	ctly observed, or o	other signs such a	s tracł	ks, droppings, casings,	nests, etc.):	
Additional relevant factors:							
Assessment conducted by:			Assessment date	e(s):			
Rachel Schmidt			03/16/23				

te/Project Na	ame: SR 31 from	SR 80 to SR 7	78 PD&E Study	Application Number:		Assessment Are	a Name or Number: Wetland C				
pact or Mitig	gation:	Direct Impa		Assessment Conducted by:	nidt	Assessment Da	02/16/22				
		Direct impac		Racher Schi	inat		03/10/23				
The scoring nat would be or si	Scoring Guida g of each indica e suitable for th urface water a	nce ator is based on ne type of wetland ssessed	Optimal (10) Condition is optimal and fully supports wetland/surface water functions	Moderate(7) Condition is less than optimal, but s maintain most wetland/surface wate	ufficient to erfunctions	Minimal (4) Minimal level of support of wetland/surface water functions	Not Present (0) Condition is insufficient to provid wetland/surface water functions				
500(6)(a) Lo	ocation and La	ndscape Support	Adjacent habitat provid of habitats (the AA is River, and residential of	des moderate to minimal su is surrounding by existing n levelopment); access for w	ipport for oadway, ildlife is s	many wildlife species continuous wetlands s comewhat limited due t	and lacks variety and rang ystem, the Caloosahatche to development; surroundi				
Current		With Impact	habitat is degraded of downstream benefits a	due to presence of invasive are somewhat limited by dis	exotics (tance an	more dominant around d barriers from the adj	d the perimeter of the AA); acent roadway; downstrea				
	1		habitats	(adjacent wetlands and rive	er) derive	significant benefits fro	om AA quality.				
6		0									
Current 6		With Impact	water was observed in adventitious roots an appropriate for the cor some areas of the	rater was observed in some areas of the AA; water level and hydrologic indicators were observed via hydrid adventitious roots and vegetated tussocks; soil moisture is appropriate for the community; vegetation was ippropriate for the community type, hydric tolerant species were observed throughout the system, however some areas of the AA exhibited water impoundment resulting in a lack of an herbaceous layer; wildlife utilization less than expected for a wetland hardwood system.							
.500(6	5)(c) Communit 	ty Structure egetation enthic oth	Less than optima desirable/typical specie and herbacous species growth or regeneratior	l vegetation species and va s (i.e. cabbage palm) and cies include invasive/exotic o of canopy trees observed;	riation ob invasive/e s (i.e Bra minimal	oserved; canopy speci exotics (i.e. Australian zilian pepper and Caro snags, dens, or caviti	es present include both pine); majority of subcanc plina willow); minimal new es present that are typical				
Current]	With Impact		this c	ommunit	y type.					
5		0									
Raw Score (if u	re = Sum of at uplands, divide	pove scores/30 by 20)		Impact Acres =	5.12						
Current		With Impact		Functional Loss (FL)							
0.57		0.00	FL	For Impact Assessment Areas]: = ID x Impact Acres =	2.92						
	Impact Dalta	(ID)	NOTE: If impact is	proposed to be mitigated at a mitigation	on bank that	I					
Impact Delta (ID) was assessed usi is equal to Functio mitigation bank th Current - w/Impact 0.57 cannot be used to				g UNIAM, then the credits required to hal Loss (FL). If impact mitigation is pr at was not assessed using UMAM, t assess impacts: use the assessment	or mitigation oposed at a then UMAM						

Site/Project Name		Application Numbe	er		Assessment Area Name	or Number			
SR 31 from SR 80 to SR 78 PD	&E Study				Wetla	and C			
FLUCCs code	Further classifica	tion (optional)		Impac	t or Mitigation Site?	Assessmer	nt Area Size		
6170	Mixe	d Wetland Hardw	/oods		Impact	0.68	Acres		
Basin/Watershed Name/Number Affec Tidal Caloosahatchee	ted Waterbody (Clas	ss)	Special Classificati	ON (i.e.C	DFW, AP, other local/state/federal	l designation of	importance)		
Geographic relationship to and hydrolog	ic connection with	wetlands other si	nde, other surface water, uplande						
Wetland C is located east of the exist development to the north, east, and s	ing SR 31 corrido outh.	or and part of a la	nger wetland syst	em th	at is surrounded by re	esidential			
Assessment area description Mixed wetland hardwoods canopy consisting Carolina willow, buttonwood , pond apple, mai cattail, Peruvian primrose willow, swamp lily ,	of cabbage palm, live Iberry , wax myrtle, a para grass, torpedo g	oak, laurel oak, Aus Ind saltbush . Herbac grass, Baker's cordgi	tralian pine, and mela ceous vegetation and rass, flat sedge , Virg	aleuca. ground inia cha	Subcanopy vegetation cor d cover consists of giant re ain fern, pickerel weed, and	nsists of Bra ed, giant lea I climbing he	zilian pepper, ther fern, empweed.		
Significant nearby features		Uniqueness (co landscape.)	nsider	Ing the relative rarity in	relation to	the regional			
					liand for this region				
Functions			Mitigation for pre-	vious	permit/other historic use	9			
Water retention/nutrient uptake, flood foraging habitat	l control, water q	uality, wildlife	None						
Anticipated Wildlife Utilization Based on that are representative of the assessment be found)	Literature Review nt area and reasor	(List of species nably expected to	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)						
Various wading birds, snakes, frogs, invertebrates.	turtles, alligators	, snails,	Wood stork (FT) Florida Bonnete (ST), Roseate Sj (ST) , Eastern In	, Bald d Bat boonb digo \$	l Eagle (Bald Eagle (68 (FE), Little Blue Heror ill (ST), Tricolored Her Snake (FT)	3A-16.002, n (ST), Rec ron (ST), A	F.A.C), Idish Egret Illigator		
Observed Evidence of Wildlife Utilization	n (List species dire	ctly observed, or o	other signs such a	s tracl	ks, droppings, casings,	nests, etc.)	:		
Additional relevant factors:									
Assessment conducted by:			Assessment date	e(s):					
Rachel Schmidt			03/16/23						

UNIFORM WETLAND MITIGATION ASSESSMENT WORKSHEET - PART II - IMPACT Form 62-345.900(2), F.A.C. (See Sections 62-345.500 and .600, F.A.C.) Site/Project Name Application Number: Assessment Area Name or Number SR 31 from SR 80 to SR 78 PD&E Study Wetland C mpact or Mitigation: Assessment Conducted by: Assessment Date: 03/16/23 Indirect Impact Rachel Schmidt Scoring Guidance Optimal (10) Moderate(7) Minimal (4) Not Present (0) The scoring of each indicator is based on Condition is optimal and fully Minimal level of support of Condition is less than optimal, but sufficient to Condition is insufficient to provide hat would be suitable for the type of wetland supports wetland/surface wate wetland/surface water maintain most wetland/surface waterfunctions wetland/surface water functions or surface water assessed functions functions Adjacent habitat provides moderate to minimal support for many wildlife species and lacks variety and range .500(6)(a) Location and Landscape Support of habitats (the AA is is surrounding by existing roadway, continuous wetlands system, the Caloosahatchee River, and residential development); access for wildlife is somewhat limited due to development; surrounding habitat is degraded due to presence of invasive exotics (more dominant around the perimeter of the AA); downstream benefits are somewhat limited by distance and barriers from the adjacent roadway; downstream habitats (adjacent wetlands and river) derive significant benefits from AA quality. Indirect impacts to location Current With Impact and landscape support are moderate because there will be changes to hydrologic connectivity to adjacent wetlands and the roadway footprint will increase wildlife barriers/access. 6 4 .500(6)(b) Water Environment Water level is moderately appropriate for the community type and varies throughout the system, standing (n/a for uplands) water was observed in some areas of the AA; water level and hydrologic indicators were observed via hydric adventitious roots and vegetated tussocks; soil moisture is appropriate for the community; vegetation was appropriate for the community type, hydric tolerant species were observed throughout the system, however, some areas of the AA exhibited water impoundment resulting in a lack of an herbaceous layer; wildlife utilization less than expected for a wetland hardwood system. Minor adverse impacts to water quality are Current With Impact anticipated, however, construction methods will implement all BMPs and follow water quality standards. 6 5 .500(6)(c) Community Structure Less than optimal vegetation species and variation observed; canopy species present include both Vegetation desirable/typical species (i.e. cabbage palm) and invasive/exotics (i.e. Australian pine); majority of subcanopy and herbacous species include invasive/exotics (i.e Brazilian pepper and Carolina willow); minimal new Benthic growth or regeneration of canopy trees observed; minimal snags, dens, or cavities present that are typical in Both this community type. The community structure may be affected due to edge effects (i.e. increased light, noise. and debris) with the potential for invasive species to proliferate and changes in regeneration opportunities for existing native species. Current With Impact 5 3 0.68 Impact Acres = Raw Score = Sum of above scores/30 (if uplands, divide by 20) Current With Impact Functional Loss (FL) [For Impact Assessment Areas] 0.57 0 40 FL = ID x Impact Acres = 0.12 NOTE: If impact is proposed to be mitigated at a mitigation bank that Impact Delta (ID) was assessed using UMAM, then the credits required for mitigation is equal to Functional Loss (FL). If impact mitigation is proposed at a mitigation bank that was not assessed using UMAM, then UMAM Current - w/Impact 0.17 cannot be used to assess impacts; use the assessment method of the mitigaiton bank

Site/Project Name		Application Number	er		Assessment Area Name	or Number			
SR 31 from SR 80 to SR 78 PD	&E Study				Wetla	and D			
FLUCCs code	Further classification	ation (optional)		Impac	t or Mitigation Site?	Assessme	nt Area Size		
6170	Mixe	d Wetland Hardw	voods		Impact	1	Acres		
Basin/Watershed Name/Number Affect	cted Waterbody (Clas	ss)	Special Classificati	ON (i.e.C	DFW, AP, other local/state/federal	designation of	f importance)		
Tidal Caloosahatchee									
Geographic relationship to and hydrolog	ic connection with	wetlands, other se	urface water, upla	nds					
Wetland D is located east of the exist to the exist to the east and commercial developm	ting SR 31 corridonent to the south.	or and part of a la	irger wetland sys	stem. I	t is surrounded by res	idential d	evelopment		
Assessment area description									
Mixed wetland hardwoods canopy consisting Herbaceous vegetation and ground cover con weed.	Mixed wetland hardwoods canopy consisting of cabbage palm and Australian pine. Subcanopy vegetation consists of Brazilian pepper, Carolina willow, and saltbush . Herbaceous vegetation and ground cover consists of giant reed, cattail, Peruvian primrose willow, para grass, torpedo grass, flat sedge, Virginia chain fern, and pickerel weed.								
Significant nearby features		Uniqueness (co landscape.)	nsider	ing the relative rarity in	relation to	the regional			
Caloosahatchee River			This is a commo	on wet	tland for this region				
Functions			Mitigation for pre-	vious	permit/other historic use	9			
Water retention/nutrient uptake, flood foraging habitat	d control, water q	uality, wildlife	None						
Anticipated Wildlife Utilization Based on that are representative of the assessme be found)	Literature Review nt area and reasor	(List of species hably expected to	Anticipated Utilization by Listed Species (List species, their legal o classification (E, T, SSC), type of use, and intensity of use of the assessment area)						
Various wading birds, snakes, frogs, invertebrates.	turtles, alligators	s, snails,	Wood stork (FT) Florida Bonnete (ST), Roseate Sj (ST) , Eastern In), Bald ed Bat poonb digo \$	I Eagle (Bald Eagle (68 (FE), Little Blue Heror ill (ST), Tricolored Her Snake (FT)	8A-16.002, n (ST), Ree ron (ST), <i>A</i>	F.A.C), ddish Egret Alligator		
Observed Evidence of Wildlife Utilizatio	n (List species dire	ectly observed, or o	other signs such a	s tracl	ks, droppings, casings,	nests, etc.):		
Additional relevant factors:									
Assessment conducted by:			Assessment date	e(s):					
Rachel Schmidt			03/16/23						

UNIFORM WETLAND MITIGATION ASSESSMENT WORKSHEET - PART II - IMPACT Form 62-345.900(2), F.A.C. (See Sections 62-345.500 and .600, F.A.C.) Site/Proiect Name Application Number: Assessment Area Name or Number SR 31 from SR 80 to SR 78 PD&E Study Wetland D Impact or Mitigation: Assessment Conducted by: Assessment Date: 03/16/23 Direct Impact Rachel Schmidt Scoring Guidance Optimal (10) Moderate(7) Minimal (4) Not Present (0) Minimal level of support of The scoring of each indicator is based on Condition is optimal and fully Condition is less than optimal, but sufficient to Condition is insufficient to provide hat would be suitable for the type of wetland supports wetland/surface wate wetland/surface water maintain most wetland/surface waterfunctions wetland/surface water functions or surface water assessed functions functions Adjacent habitat provides minimal support for many wildlife species and lacks variety and range of habitat .500(6)(a) Location and Landscape Support type (the AA is is surrounding by existing roadway, continuous wetlands system, commercial, and residential development); access for wildlife and hydrological connectivity is somewhat limited due to development; surrounding habitat is degraded due to presence of invasive exotics (more dominant around the perimeter of the AA); downstream benefits are somewhat limited by distance and barriers from the adjacent roadway and Current With Impact commercial development; downstream habitats (adjacent wetlands) derive significant to moderate benefits from AA quality. 0 5 .500(6)(b) Water Environment (n/a for uplands) Water level is moderately appropriate for the community type and varies throughout the system, standing water was observed in some areas of the AA, water level and hydrologic indicators were observed via hydric adventitious roots and vegetated tussocks; soil moisture is appropriate for the community; vegetation was appropriate for the community type, hydric tolerant species were observed throughout the system, however, some areas of the AA exhibited water impoundment resulting in a lack of an herbaceous layer; wildlife utilization less than expected for a wetland hardwood system. Current With Impact 5 0 .500(6)(c) Community Structure x Vegetation Less than optimal vegetation species and variation observed; atypical age, size, and distribution of Benthic vegetation; majority of subcanopy and herbacous species include invasive/exotics (i.e Brazilian pepper and Carolina willow); minimal new growth or regeneration of canopy trees observed; snags, dens, or cavities not Both present that are typical in this community type. Current With Impact 4 0 1 Impact Acres = Raw Score = Sum of above scores/30 (if uplands, divide by 20) Current With Impact Functional Loss (FL) [For Impact Assessment Areas] 0.47 0.00 FL = ID x Impact Acres = 0.47 NOTE: If impact is proposed to be mitigated at a mitigation bank that Impact Delta (ID) was assessed using UMAM, then the credits required for mitigation is equal to Functional Loss (FL). If impact mitigation is proposed at a mitigation bank that was not assessed using UMAM, then UMAM 0.47 Current - w/Impact cannot be used to assess impacts; use the assessment method of the mitigaiton bank

Site/Project Name		Application Numbe	er		Assessment Area Name	or Number				
SR 31 from SR 80 to SR 78	PD&E Study				Wetla	and D				
FLUCCs code	Further classifica	tion (optional)		Impac	t or Mitigation Site?	Assessmer	nt Area Size			
6170	Mixe	d Wetland Hardv	voods	oods Impact 0.25 Acres						
Basin/Watershed Name/Number Af Tidal Caloosahatchee	fected Waterbody (Clas	ss)	Special Classificati	on (i.e.C	PFW, AP, other local/state/federal	designation of	importance)			
Geographic relationship to and hydrol	logic connection with	wetlands, other s	urface water, upla	nds						
Wetland D is located east of the existing SR 31 corridor and part of a larger wetland system. It is surrounded by residential develo to the east and commercial development to the south.										
Assessment area description										
Mixed wetland hardwoods canopy consistin Herbaceous vegetation and ground cover c weed.	ng of cabbage palm and consists of giant reed, ca	Australian pine. Su ttail, Peruvian primr	bcanopy vegetation c ose willow, para gras	consists s, torpe	s of Brazilian pepper, Carol do grass, flat sedge, Virgir	ina willow, a nia chain ferr	וnd saltbush . ו, and pickerel			
Significant nearby features			Uniqueness (co landscape.)	nsideri	ng the relative rarity in	relation to	the regional			
Caloosahatchee River			This is a common wetland for this region							
Functions			Mitigation for pre-	vious p	permit/other historic use)				
Water retention/nutrient uptake, flo foraging habitat	od control, water qu	uality, wildlife	None							
Anticipated Wildlife Utilization Based that are representative of the assessr be found)	on Literature Review nent area and reasor	(List of species hably expected to	Anticipated Utilization by Listed Species (List species, their legal o classification (E, T, SSC), type of use, and intensity of use of the assessment area)							
Various wading birds, snakes, frog invertebrates.	s, turtles, alligators	, snails,	Wood stork (FT) Florida Bonnete (ST), Roseate Sj (ST) , Eastern In), Bald ed Bat poonb digo S	Eagle (Bald Eagle (68 (FE), Little Blue Heror ill (ST), Tricolored Her Snake (FT)	8A-16.002, n (ST), Rec ron (ST), A	F.A.C), Idish Egret Iligator			
Observed Evidence of Wildlife Utilizat	tion (List species dire	ctly observed, or	other signs such a	s track	s, droppings, casings, i	nests, etc.)	:			
Additional relevant factors:										
Assessment conducted by:			Assessment date	e(s):						
Rachel Schmidt			03/16/23							

ite/Project Na	ame: SR 31 from	SR 80 to SR 7	8 PD&E Study	Application Number:		A	Assessment Area	a Name or Number: Wetland D		
pact or Mitig	jation:	Indirect Impa	ct	Assessment Conducted by: Rachel Schn	nidt	Å	Assessment Date	e: 03/16/23		
	Scoring Guida	nce	Optimal (10)	Moderate(7)		Minin	nal (4)	Not Present (0)		
The scoring hat would be or su	of each indica suitable for th urface water as	ator is based on ie type of wetland ssessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but s maintain most wetland/surface wate	ufficient to rfunctions	Minimal level of support of wetland/surface water functions				
500(6)(a) Lo Current	cation and Lar	Ndscape Support	Adjacent habitat prov type (the AA is is surro development); acce surrounding habitat is the AA); downstream commercial developm from AA quality. Ind changes to hydrolo	vides minimal support for m bunding by existing roadway ss for wildlife and hydrologi degraded due to presence benefits are somewhat limit nent; downstream habitats lirect impacts to location an gic connectivity to adjacent	any wildl y, continu- cal conne- of invasiv- ted by dis (adjacent d landsc: wetlands	ife species ious wetlan ectivity is so ve exotics (stance and t wetlands) ape suppor s and the ro	and lacks v ds system, omewhat lim more domin barriers fror derive signil t are moder badway foot	ariety and range of habitat commercial, and residenti ited due to development; ant around the perimeter in the adjacent roadway ar ficant to moderate benefits ate because there will be print will increase wildlife		
.500(6)(b) Water Environment (n/a for uplands) Water level is moderately appropriate for the community type and varies throughout the system water was observed in some areas of the AA; water level and hydrologic indicators were observed adventitious roots and vegetated tussocks; soil moisture is appropriate for the community; vappropriate for the community type, hydric tolerant species were observed throughout the system areas of the AA exhibited water impoundment resulting in a lack of an herbaceous is utilization less than expected for a wetland hardwood system. Minor adverse impacts to wa anticipated, however, construction methods will implement all BMPs and follow water quality.								hout the system, standing rs were observed via hydr ommunity; vegetation was ghout the system, howeve erbaceous layer; wildlife opacts to water quality are water quality standards.		
.500(6) Current)(c) Communit <u>x</u> Ve Be	y Structure egetation enthic oth With Impact 3	Less than optimal vegetation; majority o Carolina willow); minir present that are typica (i.e. increased light, r	l vegetation species and va f subcanopy and herbacous nal new growth or regenera l in this community type.Th noise, and debris) with the p regeneration opportur	riation ob s species tion of ca e commu potential iities for e	oserved; aty i include inv anopy trees unity structu for invasive existing nat	vpical age, s vasive/exotio observed; s ure may be a species to ive species.	ize, and distribtution of cs (i.e Brazilian pepper an snags, dens, or cavities n affected due to edge effec proliferate and changes ir		
Raw Score (if u	e = Sum of ab plands, divide	ove scores/30 by 20)		Impact Acres =	0.25					
Current		With Impact		Functional Loss (FL)						
0.47		0.37	FL	For Impact Assessment Areas]: = ID x Impact Acres =	0.03					
Impact Delta (ID) NOTE: If impact is was assessed usin is avoid to Europia				proposed to be mitigated at a mitigation of UMAM, then the credits required for	on bank that or mitigation					
Current -	w/Impact	0.10	is equal to Function mitigation bank that cannot be used to the mitigation bank	at was not assessed using UMAM, t assess impacts; use the assessmen	t method of					

Site/Project Name		Application Number	er		Assessment Area Name	or Number			
SR 31 from SR 80 to SR 78	3 PD&E Study				Wetla	and E			
FLUCCs code	Further classifica	tion (optional)		Impac	t or Mitigation Site?	Assessmer	nt Area Size		
6170	Mixe	d Wetland Hardw	dwoods Impact 0.28 Acres						
Basin/Watershed Name/Number	Affected Waterbody (Clas	ss)	Special Classification	on (i.e.C	DFW, AP, other local/state/federal	designation of	importance)		
Tidal Caloosahatchee									
Geographic relationship to and hydr	ologic connection with	wetlands, other s	urface water, uplar	nds					
Wetland E is located east of the e and low density residential/uplan construction of roadways and de	xisting SR 31 corrido d forests to the south velopment have caus	or. It is surrounden. Historically the ed isolation and	ed by a commeric wetland was con separation of ad	al lot nnecte jacent	to north, a surface wa ed to a larger system i wetland systems.	ter pond t n the area	o the east, , however,		
Assessment area description									
Mixed wetland hardwoods consisting of o swamp tupelo, bishopwood, laurel oak, liv smartweed.	abbage palm in the interic ve oak, chinaberry, pond a	or and Carolina willo apple, Brazilian pepp	w along the periphery er, saw palmetto, cog	/. Other Jon gra	[.] vegetation observerd with ss , star-rush, wedelia, swa	in Wetland E mp lily, ducl	include k potato, and		
Significant nearby features Uniqueness (considering the relative rarity in relation to the landscape.)									
			This is a common wetland for this region						
Functions			Mitigation for prev	vious p	permit/other historic use)			
Water retention/nutrient uptake, f foraging habitat	lood control, water qu	uality, wildlife	None						
Anticipated Wildlife Utilization Based that are representative of the assess be found)	d on Literature Review sment area and reasor	(List of species nably expected to	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)						
Various wading birds, snakes, fro invertebrates.	ogs, turtles, alligators	, snails,	Wood stork (FT) Florida Bonnete (ST), Roseate Sp (ST) , Eastern In	, Bald d Bat boonb digo S	Eagle (Bald Eagle (68 (FE), Little Blue Heror ill (ST), Tricolored Her Snake (FT)	8A-16.002, n (ST), Rec ron (ST), A	F.A.C), Idish Egret Illigator		
Observed Evidence of Wildlife Utiliz	ation (List species dire	ctly observed, or	other signs such a	s track	ks, droppings, casings, i	nests, etc.)	1:		
Additional relevant factors:									
Assessment conducted by:			Assessment date	(s):					
Rachel Schmidt			03/16/23						

ite/Project Na	ame: SR 31 from	SR 80 to SR 7	78 PD&E Study	Application Number: -		Assessmer	Area Name or Number: Wetland E			
pact or Mitig	gation:	Direct Impac	ct	Assessment Conducted by: Rachel Schm	idt	Assessmer	Date: 03/16/23			
	Scoring Guida	ance	Optimal (10)	Moderate(7)		Minimal (4)	Not Present (0)			
The scoring hat would be or su	g of each indic e suitable for t urface water a	ator is based on he type of wetland ssessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but su maintain most wetland/surface water	fficient to functions	Minimal level of support of wetland/surface water functions Condition is insufficient to pr wetland/surface water funct				
500(6)(a) Lo	ocation and La	ndscape Support	Wetland E is frag development; nearby t somewhat limited by t	mented/disturbed due to its nabitat provides fair support the roadway and nearby fer	position for man ces, how	adjacent to the exi y wetland depende vever, the pond and	sting roadway and adjacent nt species; access for wildlife I uplands to the east and sout			
Current		With Impact	habitat is degraded of hydrologic connectiv	due to presence of invasive ity and downstream benefits	exotics (are red	more dominant arc uced due to fragme	und the perimeter of the AA); entation; downstream habitats			
5	0									
.500(6)(b) Water Environment (n/a for uplands) Water level and flow has been altered and varies marks on cabbage palms; soil moisture is appropriate for from heavy rain and runoff); community zonation is sor herbaceous layer was observed and little to no regent expected for a wetland Current With Impact						re than normal for t tent; water level inc he community; soil what appropriate fo ation of tree specie ardwood system.	his community type due to icators were observed via war deposition was observed (like or this community type; limited s; wildlife utilization less than			
.500(6	6)(c) Communi	ty Structure								
	× V	egetation								
	B	enthic	Less than optimal vegetation; majority c Brazilian pepper); m	I vegetation species and var of subcanopy and herbacous ninimal new growth or regen	iation ob species eration o	oserved; atypical ag s include invasive/e of canopy trees obs	e, size, and distribtution of xotics (i.e. Carolina willow and erved; some snags, dens, or			
Current		With Impact		cavilies	were or	Joerveu.				
5		0								
Raw Score (if u	r e = Sum of al uplands, divide	oove scores/30 ∋ by 20)		Impact Acres =	0.28					
Current		With Impact		Functional Loss (FL)						
0.50		0.00	[⊢or impact Assessment Areas]: = ID x Impact Acres =	0.14					
	Impact Delta	(ID)	NOTE: If impact is was assessed usir	proposed to be mitigated at a mitigation g UMAM, then the credits required fo	n bank that r mitigation	-				
Current -	Current - w/Impact 0.50 was assessed us is equal to Functi mitigation bank t the mitigation be used to the mitigation be used to the mitigation be used to the mitigation bar			nal Loss (FL). If impact mitigation is pro at was not assessed using UMAM, th assess impacts; use the assessment	posed at a nen UMAM method of					

Site/Project Name		Application Number	er	/	Assessment Area Name o	or Number		
SR 31 from SR 80 to SR 78	PD&E Study				Wetla	and E		
FLUCCs code	Further classifica	tion (optional)		Impact	or Mitigation Site?	Assessmer	nt Area Size	
6170	Mixe	d Wetland Hardw	voods		Impact	0.12	Acres	
Basin/Watershed Name/Number / Tidal Caloosahatchee	Affected Waterbody (Clas	SS)	Special Classificati	ON (i.e.OI	FW, AP, other local/state/federal	designation of	importance)	
Geographic relationship to and hydr	ologic connection with	wetlands, other s	urface water, uplar	nds				
Wetland E is located east of the e and low density residential/upland construction of roadways and dev	xisting SR 31 corrido d forests to the south velopment have caus	or. It is surrounden. Historically the ed isolation and	ed by a commeric e wetland was con separation of ad	al lot t nnecte jacent	o north, a surface wa d to a larger system i wetland systems.	ter pond t n the area	o the east, , however,	
Assessment area description Mixed wetland hardwoods consisting of c swamp tupelo, bishopwood, laurel oak, liv smartweed.	abbage palm in the interic ve oak, chinaberry, pond a	or and Carolina willo apple, Brazilian pepp	w along the periphery er, saw palmetto, cog	y. Other gon gras	vegetation observerd with ss , star-rush, wedelia, swa	in Wetland E Imp lily, duck	include opotato, and	
Significant nearby features			Uniqueness (co landscape.) This is a commo	nsiderii on wetl	ng the relative rarity in and for this region	relation to	the regional	
Functions			Mitigation for previous permit/other historic use					
Water retention/nutrient uptake, f foraging habitat	lood control, water q	uality, wildlife	None					
Anticipated Wildlife Utilization Based that are representative of the assess be found)	d on Literature Review sment area and reasor	(List of species hably expected to	Anticipated Utiliza classification (E, assessment area	ation by T, SSC ı)	/ Listed Species (List s), type of use, and inte	pecies, the nsity of use	ir legal e of the	
Various wading birds, snakes, fro invertebrates.	gs, turtles, alligators	, snails,	Wood stork (FT) Florida Bonnete (ST), Roseate Sp (ST) , Eastern In), Bald ed Bat (poonbi digo S	Eagle (Bald Eagle (68 (FE), Little Blue Heror III (ST), Tricolored Her make (FT)	8A-16.002, n (ST), Rec ron (ST), A	F.A.C), Idish Egret Iligator	
Observed Evidence of Wildlife Utiliz	ation (List species dire	ctly observed, or	other signs such a	s track	s, droppings, casings, i	nests, etc.)	:	
Additional relevant factors:								
Assessment conducted by:			Assessment date	e(s):				
Rachel Schmidt			03/16/23					

			UNIFORM WETLAND MIT Form 62-345.900(2	PIGATION ASSESSMENT WOI 2), F.A.C. (See Sections 62-34	5.500 and .	- PART II - IN .600, F.A.C.)	ACT					
Site/Project N	ame: SR 31 from	SR 80 to SR 7	78 PD&E Study	Application Number:		, ,	Assessment Area	a Name or Number: Wetland E				
mpact or Mitio	gation:	Indirect Impa	ict	Assessment Conducted by: Rachel Sch	midt	,	Assessment Date: 03/16/23					
	Scoring Guida	nce	Ontimal (10)	Moderate(7)		Minir	nal (4)	Not Present (0)				
The scoring what would be or se	g of each indica e suitable for th urface water as	tor is based on le type of wetland ssessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions Minimal level of support of wetland/surface water functions Condition is insufficient to provide wetland/surface water functions								
.500(6)(a) Lc	ocation and Lar	ndscape Support	Wetland E is frag development; nearby l somewhat limited by may provide fair supp	mented/disturbed due to its nabitat provides fair suppor the roadway and nearby fe ort for some species that re	s position t for many nces, how equire a v	adjacent to y wetland c vever, the p ariety of ha	o the existing lependent spond and up bond and up	g roadway and adjacent pecies; access for wildlife is lands to the east and south their life cycle; surrounding				
Current		With Impact	habitat is degraded (hydrologic connectiv	due to presence of invasive ity and downstream benefit derive minimal banefits fro	e exotics (ts are red	more domi uced due to	nant around o fragmenta	I the perimeter of the AA); tion; downstream habitats				
5		4	support are moderate because the increased roadway footprint will increase wildlife barriers/access.									
.500(¢ Current	6)(b) Water En (n/a for upland	vironment ds) With Impact 4	Water level and f fragmentation and reci marks on cabbage pal from heavy rain and herbaceous layer w expected f anticipated, howeve	Water level and flow has been altered and varies more than normal for this community type due to agmentation and recieving runoff from adjacent development; water level indicators were observed via wa tarks on cabbage palms; soil moisture is appropriate for the community; soil deposition was observed (like from heavy rain and runoff); community zonation is somewhat appropriate for this community type; limited herbaceous layer was observed and little to no regeneration of tree species; wildlife utilization less than expected for a wetland hardwood system. Minor adverse impacts to water quality are anticipated, however, construction methods will implement all BMPs and follow water quality standards.								
.500(6 Current	i)(c) Communit <u>x</u> Ve Be Bc	y Structure egetation enthic oth With Impact 4	Less than optima vegetation; majority c Brazilian pepper); n cavities were observ noise, and debris	l vegetation species and va of subcanopy and herbacou ninimal new growth or rege ed.The community structur) with the potential for inva opportunities fo	ariation ob us species neration o re may be sive spec or existing	oserved; aty s include in of canopy tr affected dr ies to prolif g native spe	vpical age, s vasive/exoti rees observe ue to edge e erate and ch ecies.	size, and distribtution of cs (i.e. Carolina willow and ed; some snags, dens, or effects (i.e. increased light, hanges in regeneration				
Raw Scor (if u	e = Sum of ab uplands, divide	ove scores/30 by 20)		Impact Acres =	0.12							
Current]	With Impact		Functional Loss (FL)								
0.50		0.40	FL	For Impact Assessment Areas]: = ID x Impact Acres =	0.01							
	Impact Delta	(ID)	NOTE: If impact is was assessed usir	proposed to be mitigated at a mitigat g UMAM, then the credits required	ion bank that for mitigation	I						
Current -	w/Impact	0.10	is equal to Function mitigation bank the cannot be used to the mitigaiton bank	ctional Loss (FL). If impact mitigation is proposed at a k that was not assessed using UMAM, then UMAM d to assess impacts; use the assessment method of pank.								

Site/Project Name		Application Numbe	er		Assessment Area Name of	or Number			
SR 31 from SR 80 to SR 78 PI	D&E Study				Wetla	and F			
FLUCCs code	Further classifica	tion (optional)		Impac	t or Mitigation Site?	Assessmer	nt Area Size		
6170	Mixe	d Wetland Hardw	voods		Impact	0.11	Acres		
Basin/Watershed Name/Number Affe	cted Waterbody (Clas	ss)	Special Classificati	ON (i.e.C	DFW, AP, other local/state/federal	designation of	importance)		
Tidal Caloosahatchee									
Geographic relationship to and hydrolog	gic connection with	wetlands, other s	urface water, uplar	nds					
Wetland F is located on the east side system to the south due to roadways residential on its north, east, and so	e of SR 31. It is an and residential d uth and the existir	isolated wetland levelopment. The ng SR 31 roadwa	system that has system is borde y on the west.	been red by	fragmented from a his y upland hardwood for	storically I rests and	arger Iow density		
Assessment area description									
The canopy of Wetland F consisted predominately of cabbage palm. Subcanopy and groundcover observed included Peruvian primrose, Brazilian pepper, torpedo grass, and smartweed.									
Significant nearby features Uniqueness (considering the relative rarity in relation to the regi- landscape.)							the regional		
			This is a commo	is is a common wetland for this region					
Functions			Mitigation for prev	vious p	permit/other historic use)			
Water retention/nutrient uptake, floo foraging habitat	d control, water q	uality, wildlife	None						
Anticipated Wildlife Utilization Based or that are representative of the assessme be found)	h Literature Review ant area and reasor	(List of species nably expected to	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)						
Various wading birds, snakes, frogs, invertebrates.	turtles, alligators	, snails,	Wood stork (FT) Florida Bonnete (ST), Roseate Sp (ST) , Eastern In), Bald d Bat boonb digo \$	l Eagle (Bald Eagle (68 (FE), Little Blue Heror ill (ST), Tricolored Her Snake (FT)	8A-16.002, n (ST), Rec ron (ST), A	F.A.C), Idish Egret Illigator		
Observed Evidence of Wildlife Utilization	n (List species dire	ctly observed, or	other signs such a	s track	ks, droppings, casings, i	nests, etc.)	:		
Additional relevant factors:									
Assessment conducted by:			Assessment date	e(s):					
Rachel Schmidt 03/16/2									

le/Project Na	ame:	CD 00 4- 00 -	70 DD 9 E 64	Application Number:		Assessment Are	a Name or Number:	
pact or Mitig	ation:	SR 80 to SR /	8 PD&E Study	Assessment Conducted by:		Assessment Dat	e:	
		Direct Impac	ct	Rachel	Schmidt		03/16/23	
	Scoring Guida	nce	Optimal (10)	Moderate(7)		Minimal (4)	Not Present (0)	
The scoring nat would be or su	of each indica suitable for th urface water as	tor is based on le type of wetland ssessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, maintain most wetland/surface	but sufficient to waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provic wetland/surface water functions	
00(6)(a) Loo	cation and Lar	ndscape Support	Wetland F is fragm development; nearby f somewhat limited by t	nented and isolated due habitat provides fair sup he roadway and fecing,	to its position port for many however, the	n adjacent to the existi y wetland dependent s pond and uplands ne	ng roadway and adjacent pecies; access for wildlife arby provide fair support f	
Current		With Impact	presence of invasive e	quire a variety of habita exotics; hydrologic conr	ectivity and	downstream benefits a	nabitat is degraded due to	
		enefits from discharge	S.					
4 0								
Current 5		With Impact O	somewhat appropriate	for this community type than expected	rifficiency, sol	regeneration of tree sp hardwood system.	ecies; wildlife utilization le	
.500(6))(c) Communit	y Structure						
	x Ve	agetation						
	IC	othio	Less than optimal	I vegetation species and	l variation ob	served; atypical age, s	size, and distribtution of	
	Bc	oth	vegetation with lack of in the subcanopy (i.e. I	subcanopy and approp Brazilian pepper); minin snags, den	iate herbaec al new grow s, or cavities	ous ground cover; son th or regeneration of ca were observed.	ne invasive/exotics observ anopy trees observed; so	
Current		With Impact						
5		0						
Raw Score (if u	e = Sum of ab plands, divide	ove scores/30 by 20)		Impact Acres =	0.11			
Current		With Impact		Functional Loss (FL)				
		0.00	FL	For Impact Assessment Areas]: = ID x Impact Acres =	0.05			
0.47								
0.47			I L					
0.47	Impact Delta	(ID)	NOTE: If impact is was assessed usir is equal to Function	proposed to be mitigated at a mi ng UMAM, then the credits requi nal Loss (FL). If impact miticatior	igation bank that red for mitigation is proposed at a			

Site/Project Name		Application Number	r		Assessment Area Name of	or Number		
SR 31 from SR 80 to SR 78 P	D&E Study				Wetla	and F		
FLUCCs code	Further classifica	tion (optional)		Impac	t or Mitigation Site?	Assessmer	nt Area Size	
6170	Mixe	d Wetland Hardw	voods		Impact	0.04	Acres	
Basin/Watershed Name/Number Affe	ected Waterbody (Clas	ss)	Special Classificati	ON (i.e.C	DFW, AP, other local/state/federal	designation of	importance)	
Tidal Caloosahatchee								
Geographic relationship to and hydrolo	ogic connection with	wetlands, other su	urface water, uplar	nds				
Wetland F is located on the east sid system to the south due to roadway residential on its north, east, and so	le of SR 31. It is an vs and residential d outh and the existir	isolated wetland levelopment. The ng SR 31 roadwa	system that has system is borde y on the west.	been ered b	fragmented from a his y upland hardwood for	storically I rests and	arger Iow density	
Assessment area description								
The canopy of Wetland F consisted predominately of cabbage palm. Subcanopy and groundcover observed included Peruvian primrose, Brazilian pepper, torpedo grass, and smartweed.								
Significant nearby features			Uniqueness (con landscape.)	nsider	ing the relative rarity in	relation to	the regional	
			This is a common wetland for this region					
Functions			Mitigation for prev	vious	permit/other historic use	9		
Water retention/nutrient uptake, floo foraging habitat	od control, water qu	uality, wildlife	None					
Anticipated Wildlife Utilization Based of that are representative of the assessme be found)	on Literature Review ent area and reasor	(List of species hably expected to	Anticipated Utilization by Listed Species (List species, their legal o classification (E, T, SSC), type of use, and intensity of use of the assessment area)					
Various wading birds, snakes, frogs invertebrates.	s, turtles, alligators	, snails,	Wood stork (FT) Florida Bonnete (ST), Roseate Sp (ST) , Eastern In	, Bald d Bat boonb digo \$	l Eagle (Bald Eagle (68 (FE), Little Blue Heror ill (ST), Tricolored Her Snake (FT)	3A-16.002, n (ST), Rec ron (ST), A	F.A.C), Idish Egret Illigator	
Observed Evidence of Wildlife Utilizati	on (List species dire	ctly observed, or o	other signs such a	s tracl	ks, droppings, casings, i	nests, etc.)		
Additional relevant factors:								
Assessment conducted by:			Assessment date	e(s):				
Rachel Schmidt			03/16/23					

UNIFORM WETLAND MITIGATION ASSESSMENT WORKSHEET - PART II - IMPACT Form 62-345.900(2), F.A.C. (See Sections 62-345.500 and .600, F.A.C.) Assessment Area Name or Number Site/Proiect Name Application Number: SR 31 from SR 80 to SR 78 PD&E Study Wetland F Impact or Mitigation: Assessment Conducted by: Assessment Date: 03/16/23 Indirect Impact Rachel Schmidt Scoring Guidance Optimal (10) Moderate(7) Minimal (4) Not Present (0) Minimal level of support of The scoring of each indicator is based on Condition is optimal and fully Condition is less than optimal, but sufficient to Condition is insufficient to provide hat would be suitable for the type of wetland supports wetland/surface wate wetland/surface wa maintain most wetland/surface waterfunctions wetland/surface water functions or surface water assessed functions functions Wetland F is fragmented and isolated due to its position adjacent to the existing roadway and adjacent .500(6)(a) Location and Landscape Support development; nearby habitat provides fair support for many wetland dependent species; access for wildlife is somewhat limited by the roadway and fecing, however, the pond and uplands nearby provide fair support for some species that require a variety of habitat during their life cycle; surrounding habitat is degraded due to presence of invasive exotics; hydrologic connectivity and downstream benefits are reduced due to isolation; Current With Impact downstream habitats derive no benefits from discharges. Indirect impacts to location and landscape support are moderate to minimal because the increased roadway footprint will increase wildlife barriers/access. 3 4 .500(6)(b) Water Environment (n/a for uplands) Water level and flow has been altered and varies more than normal for this community type due to isolation and recieving runoff from adjacent roadway; water level indicators were not observed or reliable in the system; soil moisture is appropriate for the community; soil deposition was observed; community zonation is somewhat appropriate for this community type; little to no regeneration of tree species; wildlife utilization less than expected for a wetland hardwood system. Minor adverse impacts to water quality are anticipated, however, construction methods will implement all BMPs and follow water quality standards. Current With Impact 5 4 .500(6)(c) Community Structure x Vegetation Less than optimal vegetation species and variation observed; atypical age, size, and distribution of vegetation with lack of subcanopy and appropriate herbaecous ground cover; some invasive/exotics observed Benthic in the subcanopy (i.e. Brazilian pepper); minimal new growth or regeneration of canopy trees observed; some snags, dens, or cavities were observed. The community structure may be affected due to edge effects (i.e. Both increased light, noise, and debris) with the potential for invasive species to proliferate and changes in regeneration opportunities for existing native species. Current With Impact 5 4 0.04 Impact Acres = Raw Score = Sum of above scores/30 (if uplands, divide by 20) Current With Impact Functional Loss (FL) [For Impact Assessment Areas] 0 47 0.37 FL = ID x Impact Acres = 0.00 NOTE: If impact is proposed to be mitigated at a mitigation bank that Impact Delta (ID) was assessed using UMAM, then the credits required for mitigation is equal to Functional Loss (FL). If impact mitigation is proposed at a mitigation bank that was not assessed using UMAM, then UMAM Current - w/Impact 0.10 cannot be used to assess impacts; use the assessment method of the mitigaiton bank

Site/Project Name	Site/Project Name Ap				Assessment Area Name of	or Number	er		
SR 31 from SR 80 to SR 78	PD&E Study				Wetla	and G			
FLUCCs code	Further classification	tion (optional)		Impact	or Mitigation Site?	Assessmer	nt Area Size		
6170	Mixed	d Wetland Hardw	voods	Impact 0.32 Acres					
Basin/Watershed Name/Number A Tidal Caloosahatchee	ffected Waterbody (Clas	s)	Special Classificati	ion (i.e.Of	FW, AP, other local/state/federal	designation of	importance)		
Geographic relationship to and hydro	ologic connection with	wetlands, other si	urface water, uplar	nds					
Wetland G is a mixed hardwoods fore commercial lots to the south, rural res Wetland H to the south.	sted system located on sidential to the north, a	n the southeast en nd improved past	d of SR 31. Wetlan ure to the east. We	d G is b tland G	ound by roadway to the is hydrologically conne	e west, un- ected via cu	developed ulvert to		
Assessment area description Canopy species consists predominately of laurel oak, bald cypress, cabbage palm, bishopwood, and ear pod tree. Subcanopy and groundcover species observed includes Brazilian pepper, Carolina willow, wax myrtle, buttonbush, giant leather fern, royal fern, Peruvian primrose willow, pone apple, cattail, swamp fern, smartweed, torpedo grass, and alligator flag. In relation to the assessment area, the SR 80 roadway is located to the so of the assessment area.									
Significant nearby features			Uniqueness (co landscape.)	nsiderir	ng the relative rarity in	relation to	the regional		
			This is a commo	mon wetland for this region					
Functions			Mitigation for pre-	vious p	ermit/other historic use)			
Water retention/nutrient uptake, fle foraging habitat	ood control, water qu	uality, wildlife	None						
Anticipated Wildlife Utilization Based that are representative of the assess be found)	on Literature Review ment area and reason	(List of species ably expected to	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)						
Various wading birds, snakes, frog invertebrates.	gs, turtles, alligators,	, snails,	Wood stork (FT) Florida Bonnete (ST), Roseate Sp (ST), Eastern Ind), Bald ed Bat (poonbi digo Sr	Eagle (Bald Eagle (68 FE), Little Blue Heror II (ST), Tricolored Her nake (FT)	8A-16.002, n (ST), Rec ron (ST), A	F.A.C), Idish Egret Illigator		
Observed Evidence of Wildlife Utiliza	ation (List species dire	ctly observed, or o	other signs such a	is tracks	s, droppings, casings, ı	nests, etc.)	:		
Additional relevant factors:									
Assessment conducted by:			Assessment date(s):						
Rachel Schmidt			03/16/23						

te/Project N	ame: SR 31 from	n SR 80 to SR 7	78 PD&E Study	Application Number:		Assessn	nent Area	Name or Number: Wetland G			
pact or Mitig	gation:	Direct Impac	ct	Assessment Conducted by: Rachel S	chmidt	Assessn	nent Date:	03/16/23			
	Scoring Guida	ance	Optimal (10)	Moderate(7)		Minimal (4)		Not Present (0)			
The scoring nat would be or si	g of each indica e suitable for tl urface water a	ator is based on he type of wetland ssessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, t maintain most wetland/surface	out sufficient to waterfunctions	Minimal level of supp wetland/surface w functions	Minimal level of support of wetland/surface water functions Condition is insufficient to wetland/surface water fu				
00(6)(a) Lc	ocation and La	ndscape Support	Moderate but less t invasive species pres the adiacent roadwa	than optimal quality and ent, some Brazilian pep ivs. residential areas. an	quantity of a per observed d commercia	djacent habitat a d within the syste al development:	and acc em; wild hvdrolo	cess for wildlife; minimal dlife access is limited fror paic connectivity between			
Current]	With Impact	adjacent systems	to the south is sufficient	to maintain	wetland function	s; dowr	nstream habitats derive			
	1		-	significan	Denents fro	m discharges					
6 0											
Current 7		With Impact	residential areas; spe	cies are somewhat toler	ant of altere observed	d water quality; r	ninimal	I water quality degradatio			
.500(6	6)(c) Communi	ty Structure									
	x V	egetation									
	B	enthic oth	Less than optimal veg species are presen generally good plants dens c	getative species were ob t (Brazilian pepper); min s' condition; age and dist observed: slightly less th	served withi imal new gro ribution is ty an optimal to	n the system; pro owth or regenera pical; normal qua opographic featu	esent b ition of ality of res for	but minimal invasive/exoti canopy trees observed; woody debris, snags, and the system			
Current		With Impact			·						
6		0									
Raw Scor (if u	e = Sum of ab uplands, divide	pove scores/30 e by 20)		Impact Acres =	0.32						
Current		With Impact		Functional Loss (FL)							
0.63		0.00	FL	⊢or impact Assessment Areas]: = ID x Impact Acres =	0.20						
	Impact Delta	(ID)	NOTE: If impact is	proposed to be mitigated at a miti	gation bank that						
	Impact Delta (ID) was assessed us is equal to Functit mitigation bank ti Current - w/Impact 0.63 cannot be used t			nal Loss (FL). If impact mitigation	is proposed at a						

Site/Project Name	Application Numbe	er		Assessment Area Name	or Number	r			
SR 31 from SR 80 to SR 78 PD8	&E Study				Wetla	and G			
FLUCCs code	Further classification	tion (optional)		Impact	t or Mitigation Site?	Assessmer	nt Area Size		
6170	Mixed	d Wetland Hardw	voods	Impact 0.17 Acres					
Basin/Watershed Name/Number Affect Tidal Caloosahatchee	ed Waterbody (Clas	s)	Special Classificati	ON (i.e.O	FW, AP, other local/state/federal	designation of	importance)		
Geographic relationship to and hydrologi	c connection with	wetlands, other s	urface water, uplar	nds					
Wetland G is a mixed hardwoods forested commercial lots to the south, rural resider Wetland H to the south.	system located on ntial to the north, a	n the southeast en nd improved past	d of SR 31. Wetland ure to the east. We	d G is I tland G	bound by roadway to the is hydrologically conne	e west, un- ected via cu	developed Ilvert to		
Assessment area description Canopy species consists predominately o species observed includes Brazilian pepp apple, cattail, swamp fern, smartweed, tor of the assessment area.	f laurel oak, bald c er, Carolina willow pedo grass, and al	ypress, cabbage p , wax myrtle, butto ligator flag. In rela	palm, bishopwood, onbush, giant leath ation to the assess	and ea er fern ment a	rr pod tree. Subcanopy a , royal fern, Peruvian pri rea, the SR 80 roadway	and ground imrose will is located t	cover ow, pond to the south		
Significant nearby features		Uniqueness (co landscape.)	nsideri	ng the relative rarity in	relation to	the regional			
			This is a common wetland for this region						
Functions			Mitigation for pre-	vious p	permit/other historic use)			
Water retention/nutrient uptake, flood foraging habitat	control, water qu	uality, wildlife	None						
Anticipated Wildlife Utilization Based on I that are representative of the assessmen be found)	Literature Review at area and reason	(List of species ably expected to	Anticipated Utiliza classification (E, assessment area	ation by T, SSC	y Listed Species (List s C), type of use, and inte	pecies, the nsity of use	ir legal e of the		
Various wading birds, snakes, frogs, t invertebrates.	urtles, alligators,	, snails,	Wood stork (FT) Florida Bonnete (ST), Roseate Sp (ST), Eastern Ind), Bald ed Bat poonbi digo Si	Eagle (Bald Eagle (68 (FE), Little Blue Heror ill (ST), Tricolored Her nake (FT)	8A-16.002, n (ST), Rec ron (ST), A	F.A.C), Idish Egret Illigator		
Observed Evidence of Wildlife Utilization	(List species dire	ctly observed, or	other signs such a	s track	s, droppings, casings,	nests, etc.)	:		
Additional relevant factors:									
Assessment conducted by:			Assessment date	e(s):					
Rachel Schmidt			03/16/23						

te/Project Na	ame: SR 31 from	n SR 80 to SR 7	78 PD&E Study	Application Number:		Assessmen	Area Name or Number: Wetland G			
pact or Mitig	gation:	Indirect Impa	ct	Assessment Conducted by: Rachel Schm	nidt	Assessmen	Date: 03/16/23			
	Scoring Guida	ance	Optimal (10)	Moderate(7)		Minimal (4)	Not Present (0)			
The scoring nat would be or si	g of each indic e suitable for t urface water a	ator is based on he type of wetland ssessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but su maintain most wetland/surface wate	ufficient to rfunctions	Minimal level of support wetland/surface water functions	of Condition is insufficient to provid wetland/surface water functions			
00(6)(a) Lo Current	ocation and La	ndscape Support	Moderate but less t invasive species pres the adjacent roadwa adjacent systems t	han optimal quality and qua ent, some Brazilian pepper ys, residential areas, and co to the south is sufficient to r significant be	ntity of a observe ommerci naintain nefits fro	ndjacent habitat and d within the system al development; hy wetland functions; m discharges.	l access for wildlife; minimal wildlife access is limited fror drologic connectivity between downstream habitats derive			
6		5								
.500(6 Current	6)(b) Water Er (n/a for uplar	wironment ids) With Impact	Water level and flow water marks are prese for the community f residential areas; spe observed. Minor ad	is appropriate for the comment; soil moisture is appropri type; wildlife usage was less cies are somewhat tolerant dverse impacts to water qua implement all BMPs an	aunity typ ate for th s than ex of altere lity are a d follow	be; water level indic the community; som pected due to the p d water quality; mir anticipated, howeve water quality stand	ators are distinct and reliable e vegetation was inappropria roximity of the roadway and imal water quality degradatio r, construction methods will ards.			
7		6								
.500(6	6)(c) Communi	ty Structure								
	<u>x</u> V	egetation enthic oth	Less than optimal veg species are presen generally good plants dens observed; slightly be affected due to edd	getative species were obser t (Brazilian pepper); minima ' condition; age and distribu y less than optimal topograp the effects (i.e. increased link	ved withi I new gro Ition is ty phic featu	n the system; prese owth or regeneratio pical; normal qualit ures for the system and debris) with th	ent but minimal invasive/exot n of canopy trees observed; y of woody debris, snags, an The community structure ma e potential for invasive speci			
Current		With Impact	to prolifer	ate and changes in regener	ation op	portunities for existi	ng native species.			
6		5								
Raw Scor (if u	r e = Sum of al uplands, divide	pove scores/30 e by 20)		Impact Acres =	0.17					
Current		With Impact		Functional Loss (FL)						
0.63		0.53	FL	For Impact Assessment Areas]: = ID x Impact Acres =	0.02					
	Impact Delta	(ID)	NOTE: If impact is was assessed usin	proposed to be mitigated at a mitigatio g UMAM, then the credits required fo	n bank that r mitigation					
Current -	w/Impact	0.10	is equal to Functior mitigation bank tha cannot be used to the mitigation bank	hal Loss (FL). If impact mitigation is pro at was not assessed using UMAM, ti assess impacts; use the assessment	posed at a hen UMAM method of					

Site/Project Name	Application Number	ber Assessment Area Name or Numb			or Number	er		
SR 31 from SR 80 to SR 78	PD&E Study				Wetla	and H		
FLUCCs code	Further classifica	tion (optional)		Impac	t or Mitigation Site?	Assessmer	nt Area Size	
6170	Mixed	Mixed Wetland Hardw			Impact	0.002	Acres	
Basin/Watershed Name/Number // Tidal Caloosahatchee	Affected Waterbody (Clas	ss)	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)					
Geographic relationship to and hydro	ologic connection with	wetlands, other s	urface water, uplar	nds				
Wetland H is a mixed hardwoods fore un-developed commercial lots to the to Wetland I to the south and via culv	ested system located or east and west, and a st ert to Wetland G to the	n the east end of S ormwater detentio north.	R 80 (Palm Beach I on pond to the nort	Blvd). \ h. Wetl	Wetland H is bound by re land H is hydrologically	oadway to connected	the south, via culvert	
Assessment area description Canopy species consists predominat species observed includes Brazilian apple, cattail, swamp fern, smartweed of the assessment area.	ely of laurel oak, bald c pepper, Carolina willow d, torpedo grass, and al	ypress, cabbage p , wax myrtle, butto ligator flag. In rela	aalm, bishopwood, onbush, giant leath ation to the assess	and ea er fern ment a	ar pod tree. Subcanopy a n, royal fern, Peruvian pri area, the SR 80 roadway	and ground imrose will is located t	lcover ow, pond to the south	
Significant nearby features			Uniqueness (con landscape.)	nsideri	ing the relative rarity in	relation to	the regional	
			This is a commo	on wet	land for this region			
Functions			Mitigation for previous permit/other historic use					
Water retention/nutrient uptake, fl foraging habitat	lood control, water qı	uality, wildlife	None					
Anticipated Wildlife Utilization Based that are representative of the assess be found)	d on Literature Review sment area and reason	(List of species hably expected to	Anticipated Utiliza classification (E, assessment area	ation b T, SSC)	y Listed Species (List s C), type of use, and inte	pecies, the nsity of use	ir legal e of the	
Various wading birds, snakes, fro invertebrates.	gs, turtles, alligators	, snails,	Wood stork (FT) Florida Bonnete (ST), Roseate Sp (ST), Eastern Inc	, Bald d Bat boonb ligo S	Eagle (Bald Eagle (68 (FE), Little Blue Heror ill (ST), Tricolored Her nake (FT)	8A-16.002, n (ST), Rec ron (ST), A	F.A.C), Idish Egret Illigator	
Observed Evidence of Wildlife Utilization	ation (List species dire	ctly observed, or	other signs such a	s track	ks, droppings, casings, r	nests, etc.)	1	
Red shoulder hawk perched on cy	vpress tree.							
Additional relevant factors:								
Assessment conducted by:			Assessment date	(s):				
Rachel Schmidt			03/16/23					

Site/Project Na	ame: SR 31 from	SR 80 to SR 7	/8 PD&E Study	Application Number:		A	Assessment Area	a Name or Number: Wetland H		
mpact or Mitig	ation:			Assessment Conducted by:		ŀ	Assessment Date:			
		Direct Impac	t .	Rachel Schmidt			03/16/23			
	Scoring Guida	nce	Optimal (10)	Moderate(7) Mir			nimal (4) Not Present (0)			
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed functions				Condition is less than optimal, but s maintain most wetland/surface wate	ufficient to rfunctions	to Minimal level of support of wetland/surface water functions Condition is insufficient to provie wetland/surface water function				
.500(6)(a) Lo	cation and Lar	ndscape Support	Minimal quality and o Brazilian pepper obser	quantity of adjacent habitat ved within the system; wildl	and acce	ess for wildl s is limited	ife; minimal from the ad	invasive species present, ljacent roadways; hydrologi		
Current With Impact			connectivity betwee	connectivity between adjacent systems is optimal; downstream habitats derive significant benefits from						
					loonargo	0.				
5		0								
Current	(n/a for upland	ds) With Impact	Water level and flow lichen lines and wate was inappropriate for roadway; species ar	is appropriate for the comn r marks are present; soil m the community type; wildlife e somewhat tolerant of alte	nunity typ pisture is e usage v red wate	be; water le appropriat vas less tha r quality; no	vel indicator e for the cor an expected o water qual	rs are distinct and reliable, mmunity; some vegetation due to the proximity of the ity degradation observed.		
7		0								
.500(6))(c) Communit	y Structure								
	x Ve	getation								
	Be	enthic th	A majority of approp species are preser generally good plants' topog	priate species were observe tt (Brazilian pepper); near-n condition; age and distribu praphic features for the syst	ed within ormal ne tion is typ	the system w growth o bical; appro	; present bu r regenerati priate quant am channel	It minimal invasive/exotic on of species observed; tity of woody debris; norma observed		
Current		With Impact		, ,	,					
8		0								
Raw Score (if u	e = Sum of ab plands, divide	ove scores/30 by 20)		Impact Acres =	0.002					
Current		With Impact		Functional Loss (FL)						
0.67		0.00	[For Impact Assessment Areas]: FL = ID x Impact Acres = 0.00							
	Impact Delta	(ID)	NOTE: If impact is was assessed usin	proposed to be mitigated at a mitigation g UMAM, then the credits required for	on bank that	I				
		1	was assessed using UMAM, then the credits required for mitigation is equal to Functional Loss (FL). If impact mitigation is proposed at a mitigation bank that was not assessed using UMAM, then UMAM cannot be used to assess impacts; use the assessment method of							

Site/Project Name		Application Numbe	er	Þ	Assessment Area Name of	or Number		
SR 31 from SR 80 to SR 78	3 PD&E Study				Wetla	and H		
FLUCCs code	Further classifica	tion (optional)		Impact	or Mitigation Site?	Assessmer	nt Area Size	
6170	Mixed	d Wetland Hardv	voods		Impact	0.03	Acres	
Basin/Watershed Name/Number	Affected Waterbody (Clas	ss)	Special Classificati	ion (i.e.OF	FW, AP, other local/state/federal	designation of	importance)	
Tidal Caloosahatchee								
Geographic relationship to and hydr	ologic connection with	wetlands, other s	urface water, upla	nds				
Wetland H is a mixed hardwoods fore un-developed commercial lots to the to Wetland I to the south and via culv	ested system located on east and west, and a st rert to Wetland G to the	the east end of S ormwater detentic north.	R 80 (Palm Beach on pond to the nort	Blvd). W h. Wetla	Vetland H is bound by re and H is hydrologically	oadway to t connected	the south, via culvert	
Assessment area description								
Canopy species consists predominat species observed includes Brazilian apple, cattail, swamp fern, smartweed of the assessment area.	ely of laurel oak, bald c pepper, Carolina willow d, torpedo grass, and al	ypress, cabbage p , wax myrtle, butto ligator flag. In rel	oalm, bishopwood, onbush, giant leath ation to the assess	and ear er fern, ment ar	r pod tree. Subcanopy a royal fern, Peruvian pri rea, the SR 80 roadway	and ground imrose will is located t	cover ow, pond o the south	
Significant nearby features			Uniqueness (co landscape.)	nsiderir	ng the relative rarity in	relation to	the regional	
			This is a commo	on wetl	and for this region			
Functions			Mitigation for previous permit/other historic use					
Water retention/nutrient uptake, f foraging habitat	lood control, water qu	uality, wildlife	None					
Anticipated Wildlife Utilization Based that are representative of the assess be found)	d on Literature Review sment area and reason	(List of species ably expected to	Anticipated Utiliza classification (E, assessment area	ation by T, SSC ı)	/ Listed Species (List s), type of use, and inte	pecies, the nsity of use	ir legal e of the	
Various wading birds, snakes, fro invertebrates.	gs, turtles, alligators	, snails,	Wood stork (FT) Florida Bonnete (ST), Roseate Sj (ST), Eastern Ind), Bald ed Bat (poonbi digo Sr	Eagle (Bald Eagle (68 FE), Little Blue Heror II (ST), Tricolored Her nake (FT)	8A-16.002, n (ST), Rec ron (ST), A	F.A.C), Idish Egret Iligator	
Observed Evidence of Wildlife Utiliz	ation (List species dire	ctly observed, or	other signs such a	is tracks	s, droppings, casings, ı	nests, etc.)	:	
Additional relevant factors:								
Assessment conducted by:			Assessment date	e(s):				
Rachel Schmidt			03/16/23					

SR 31 from SR 80 to SR 78 PD&E Study				Application Number:		Assessment Are	a Name or Number: Wetland H				
pact or Miti	igation:		o i baz olday	Assessment Conducted by:		Assessment Dat	e:				
		Indirect Impa	ict	Rachel Sci	midt		03/16/23				
	Scoring Guida	nce	Optimal (10)	Moderate(7)		Minimal (4)	Not Present (0)				
The scoring nat would b or s	g of each indica be suitable for th surface water a	ator is based on ne type of wetland ssessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but maintain most wetland/surface wa	sufficient to terfunctions	Sient to netions Minimal level of support of wetland/surface water functions functions Condition is insufficient to prov. wetland/surface water function					
00(6)(a) Lo	ocation and La	ndscape Support	Minimal quality and o Brazilian pepper obser connectivity betwee	quantity of adjacent habita ved within the system; wilk n adjacent systems is opt	t and acces dlife access	ss for wildlife; minima s is limited from the ac stream habitats derive	invasive species present, ljacent roadways; hydrolog s significant benefits from				
Current With Impact disc			discharges. Indirect in	scharges. Indirect impacts to location and landscape support are moderate because the roadway footprint and capacity will increase wildlife barriers/access.							
5	1	4									
Current 7		With Impact	was inappropriate for roadway; species ar Minor adverse impac	e somewhat tolerant of all ts to water quality are and BMPs and follo	ie usage w ered water icipated, ho ow water qu	as less than expected quality; no water qua owever, construction r juality standards.	i que to trie proximity of the lity degradation observed. nethods will implement al				
.500(6	6)(c) Communi	y Structure									
	Bo	enthic	A majority of approp species are preser generally good plar topographic features f affected due to edge e	priate species were observent t (Brazilian pepper); near- nts' condition; age and dis- or the system, secondary effects (i.e. increased light	ved within the normal new tribution is the stream chat, noise, and	he system; present bu w growth or regenerat typical; normal quality annel observed. The c d debris) with the pote	It minimal invasive/exotic ion of species observed; of woody debris; normal ommunity structure may b ential for invasive species				
Current		With Impact	prolifera	te and changes in regene	ration oppo	rtunities for existing n	ative species.				
		7									
8			т г	Impact Acres =	0.03						
8 Raw Scor (if	re = Sum of at uplands, divide	ove scores/30 by 20)									
8 Raw Scoo (if Current	re = Sum of ab uplands, divide	ove scores/30 by 20) With Impact		Functional Loss (FL)]						
8 Raw Scoo (if Current 0.67	re = Sum of at uplands, divide	ove scores/30 by 20) With Impact 0.57	(Functional Loss (FL) For Impact Assessment Areas]: = ID x Impact Acres =	0.00						
8 Raw Scoi (if Current 0.67	re = Sum of at uplands, divide	With Impact	FL NOTE: If impact is	Functional Loss (FL) For Impact Assessment Areas]: = ID x Impact Acres = proposed to be mitigated at a mitiga	0.00						

Site/Project Name		Application Number			Assessment Area Name or Number			
SR 31 from SR 80 to SR 78	PD&E Study				Wetl	and I		
FLUCCs code	Further classification	tion (optional)		Impact	t or Mitigation Site?	Assessmer	nt Area Size	
6210		Cypress			Impact	0.67	Acres	
Basin/Watershed Name/Number Af	fected Waterbody (Clas	s)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)					
Tidal Caloosahatchee								
Geographic relationship to and hydrol	logic connection with	wetlands, other si	urface water, uplar	nds			lan di la	
bound by roadway to the north, a mixture is hydrologically connected via culvert pond to the east	brested system domin ure of utility line and g to an upland cut stor	ated by baid cypro jolf course to the s mwater ditch to th	ess located on the south and west, an e west and via an o	east er d a sto outlet c	rmwater detention ponc control structure to a sto	I to the eas	t. Wetland I tetention	
Assessment area description								
Canopy species consists dominately o willow around the edge of the system.	f bald cypress. Other In relation to the asse	vegetation observ essment area, the	ed includes Brazili SR 80 roadway is I	an pep ocated	per, cabbage palm, and to the north of the asse	Peruvian p ssment are	rimrose ea.	
Significant nearby features			Uniqueness (co landscape.)	nsideri	ng the relative rarity in	relation to t	the regional	
			This is a commo	on wet	land for this region			
Functions			Mitigation for previous permit/other historic use					
Water retention/nutrient uptake, flo foraging habitat	od control, water qu	uality, wildlife	None					
Anticipated Wildlife Utilization Based that are representative of the assessr be found)	on Literature Review nent area and reason	(List of species ably expected to	Anticipated Utiliza classification (E, assessment area	ation b T, SSC)	y Listed Species (List s C), type of use, and inte	pecies, the nsity of use	ir legal e of the	
Various wading birds, snakes, frog invertebrates.	s, turtles, alligators,	, snails,	Wood stork (FT) Florida Bonnete (ST), Roseate Sp (ST), Eastern Ind	, Bald d Bat boonb digo S	Eagle (Bald Eagle (68 (FE), Little Blue Heror ill (ST), Tricolored Her nake (FT)	8A-16.002, n (ST), Red ron (ST), A	F.A.C), Idish Egret Illigator	
Observed Evidence of Wildlife Utilizat	tion (List species dire	ctly observed, or o	other signs such a	s track	s, droppings, casings, ı	nests, etc.)	:	
Additional relevant factors:								
Assessment conducted by:			Assessment date	e(s):				
Rachel Schmidt			03/16/23					

te/Project Na	lame:			Application Number:		Assessment Ar	ea Name or Number:			
	SR 31 from	n SR 80 to SR 7	8 PD&E Study	-			Wetland I			
pact or Mitig	gation:	Direct Impac	t	Assessment Conducted by: Rachel S	chmidt	Assessment Da	03/16/23			
	Scoring Guida	ance	Optimal (10)	Moderate(7)		Minimal (4)	nimal (4) Not Present (0)			
The scoring nat would be or si	g of each indica e suitable for th urface water a	ator is based on he type of wetland ssessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, maintain most wetland/surface	out sufficient to waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provid wetland/surface water function:			
00(6)(a) Lo	ocation and La	ndscape Support	Minimal quality and o Brazilian pepper obs	quantity of adjacent habi erved within the system	tat and acce wildlife acc	ess for wildlife; minima ess is limited from the	I invasive species present adjacent roadway and go			
Current	urrent With Impact		course; hydrologic connectivity between adjacent systems is through culverts and connects to northern wetland systems and pond to the south; downstream habitats derive significant benefits from discharges.							
5		0								
Current With Impact 6 0				r marks are present; soi the community type; wil e somewhat tolerant of	I moisture is dlife usage v altered wate	appropriate for the co vas less than expecte r quality; no water qua	d due to the proximity of the light of the proximity of the light of the proximity of the light of the degradation observed.			
.500(6	5)(c) Communi V B B	ty Structure egetation enthic oth	A majority of approp species are preser generally good plar topog	priate species were obse nt (Brazilian pepper); nea nts' condition; age and d graphic features for the s	erved within ar-normal ne istribution is system, seco	the system; present b w growth or regenera typical; normal quality ondary stream channe	ut minimal invasive/exotic tion of species observed; y of woody debris; normal I observed.			
Current	1	with impact								
7		0								
Raw Scor (if u	'e = Sum of ab uplands, divide	oove scores/30 e by 20)		Impact Acres =	0.67					
Current]	With Impact		Functional Loss (FL)						
0.60		0.00	FL	For Impact Assessment Areas]: = ID x Impact Acres =	0.40					
	Impact Delta	(ID)	NOTE: If impact is was assessed usin	proposed to be mitigated at a mit g UMAM, then the credits requir	gation bank that ed for mitigation					
Impact Delta (ID)										
Site/Project Name		Application Numbe	r		Assessment Area Name of	or Number				
---	---	--	---	-------------------------------------	---	--	------------------------------------			
SR 31 from SR 80 to SR 78 F	PD&E Study				Wetl	and I				
FLUCCs code	Further classifica	tion (optional)		Impac	t or Mitigation Site?	Assessmer	nt Area Size			
6210		Cypress			Impact	0.2	Acres			
Basin/Watershed Name/Number Aff	fected Waterbody (Clas	ss)	Special Classificati	ON (i.e.C	DFW, AP, other local/state/federal	designation of	importance)			
Tidal Caloosahatchee										
Geographic relationship to and hydrol	ogic connection with	wetlands, other se	urface water, upla	nds						
Wetland I is an isolated depressional for a mixture of utility line and golf course culvert to an upland cut stormwater dit	prested system locate to the south and wes ch to the west and via	ed on the east end at, and a stormwate a an outlet control	of SR 80 (Palm Bea er detention pond t structure to a stor	ach Blv o the e mwate	rd). Wetland I is bound b east. Wetland I is hydrolo r detention pond to the e	y roadway ogically cor east	to the north, nected via			
Assessment area description										
Canopy species consists dominately of willow around the edge of the system.	f bald cypress. Other In relation to the asso	vegetation observ essment area, the	ed includes Brazili SR 80 roadway is I	an pep ocated	per, cabbage palm, and to the north of the asse	Peruvian p ssment are	rimrose ⊧a.			
Significant nearby features			Uniqueness (co landscape.)	nsideri	ing the relative rarity in	relation to	the regional			
			This is a commo	on wet	land for this region					
Functions			Mitigation for pre	vious p	permit/other historic use	•				
Water retention/nutrient uptake, flo foraging habitat	od control, water qu	uality, wildlife	None							
Anticipated Wildlife Utilization Based of that are representative of the assessm be found)	on Literature Review nent area and reasor	(List of species hably expected to	Anticipated Utiliza classification (E, assessment area	ation b T, SS()	y Listed Species (List s C), type of use, and inte	pecies, the nsity of use	ir legal e of the			
Various wading birds, snakes, frog invertebrates.	s, turtles, alligators	, snails,	Wood stork (FT) Florida Bonnete (ST), Roseate Sj (ST), Eastern Ind), Bald d Bat boonb digo S	Eagle (Bald Eagle (68 (FE), Little Blue Heror ill (ST), Tricolored Her nake (FT)	8A-16.002, n (ST), Rec ron (ST), A	F.A.C), Idish Egret Iligator			
Observed Evidence of Wildlife Utilizat	ion (List species dire	ctly observed, or	other signs such a	s track	ks, droppings, casings, r	nests, etc.)	1			
Additional relevant factors:										
Assessment conducted by:			Assessment date	e(s):						
Rachel Schmidt			03/16/23							

te/Project Na	ame: SR 31 from	SR 80 to SR 7	'8 PD&E Study	Application Number:			Assessment Area	a Name or Number: Wetland I
pact or Mitig	gation:	Indirect Impa	ct	Assessment Conducted by: Rachel Schr	nidt		Assessment Date	e: 03/16/23
	Scoring Guida	nce	Optimal (10)	Moderate(7)		Mini	mal (4)	Not Present (0)
The scoring nat would be or so	of each indica suitable for th urface water as	ator is based on he type of wetland ssessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but s maintain most wetland/surface wate	ufficient to erfunctions	Minimal leve wetland/s fun	el of support of urface water ctions	Condition is insufficient to provid wetland/surface water functions
00(6)(a) Lo Current	cation and Lar	ndscape Support	Minimal quality and o Brazilian pepper obs course; hydrologic o wetland systems and Indirect impacts to loca connectivity to a	quantity of adjacent habitat erved within the system; wi connectivity between adjace d pond to the south; downst ation and landscape suppor diacent wetlands and the r	and acce Idlife acc ent syste ream hal t are mo	ess for wild ess is limit ms is throu bitats deriv derate bec potorint wil	life; minimal ed from the a igh culverts a e significant ause there w Lincrease wi	invasive species present adjacent roadway and gol and connects to northern benefits from discharges. <i>i</i> III be changes to hydrolog Idlife barriers/access.
5		4		-,				
.500(6 Current	6)(b) Water Env	wironment ds) With Impact 5	Water level and flow lichen lines and wate was inappropriate for roadway; species ar Minor adverse impac	is appropriate for the comr r marks are present; soil m the community type; wildlif e somewhat tolerant of alte cts to water quality are antio BMPs and follow	nunity typ oisture is e usage v red wate cipated, f w water c	be; water le appropria was less th r quality; n nowever, co quality stan	evel indicator te for the cor an expected o water qual onstruction n dards.	rs are distinct and reliable mmunity; some vegetation due to the proximity of th ity degradation observed. nethods will implement all
.500(6)(c) Communit	y Structure						
	<u> </u>	egetation enthic oth	A majority of approp species are preser generally good plar topographic features f affected due to edge	priate species were observent (Brazilian pepper); near-r nts' condition; age and distr or the system, secondary s effects (i.e. increased light.	ed within formal ne ibution is tream ch noise, ar	the system w growth o typical; no annel obse d debris)	n; present bu or regeneration ormal quality orved. The co with the pote	It minimal invasive/exotic on of species observed; of woody debris; normal ommunity structure may b ntial for invasive species
Current		With Impact	prolifera	te and changes in regenera	ation opp	ortunities fo	or existing na	ative species.
7		6						
Raw Scor (if u	e = Sum of ab uplands, divide	ove scores/30 by 20)		Impact Acres =	0.2]		
Current		With Impact		Functional Loss (FL)				
0.60		0.50	FL	= ID x Impact Acres =	0.02			
	Impact Delta	(ID)	NOTE: If impact is was assessed usin	proposed to be mitigated at a mitigation g UMAM, then the credits required for	on bank that or mitigation	-		
Current -	w/Impact	0.10	is equal to Function mitigation bank tha cannot be used to the mitigaiton bank	hal Loss (FL). If impact mitigation is pr at was not assessed using UMAM, assess impacts; use the assessmer	oposed at a then UMAM t method of			

Site/Project Name		Application Numbe	r		Assessment Area Name	or Number	
SR 31 from SR 80 to SR 78	PD&E Study				Wetla	and J	
FLUCCs code	Further classifica	tion (optional)		Impac	t or Mitigation Site?	Assessmer	nt Area Size
6170	Mixed	d Wetland Hardw	voods		Impact	0.27	Acres
Basin/Watershed Name/Number A	Affected Waterbody (Clas	s)	Special Classificati	on (i.e.C	DFW, AP, other local/state/federal	designation of	importance)
Tidal Caloosahatchee							
Geographic relationship to and hydro	ologic connection with	wetlands, other s	urface water, upla	nds			
Wetland J is located on the northe of uplands to the north and west a stormwater ditch to the south.	east quadrant of the s and roadways to the s	SR 31 and SR 80 south and east.	(Palm Beach Blv Wetland J is hydi	/d) inte rologie	ersection. Wetland J is cally connected to an	s bound by upland cu	y a mixture t
Assessment area description							
Canopy species consists predominately o Brazilian pepper, and broomsedge. In rela	of cabbage palm, laurel oal ation to the assessment ar	k, and melaleuca. Of ea, the SR 31 roadw	her vegetation obser ay is located to the e	ved inc east of t	ludes swamp tupelo, bisho he assessment area.	pwood, wax	myrtle,
Significant nearby features			Uniqueness (co landscape.)	nsideri	ing the relative rarity in	relation to	the regional
			This is a commo	on wet	land for this region		
Functions			Mitigation for pre-	vious p	permit/other historic use	•	
Water retention/nutrient uptake, fl foraging habitat	ood control, water qu	uality, wildlife	None				
Anticipated Wildlife Utilization Based that are representative of the assess be found)	I on Literature Review sment area and reason	(List of species ably expected to	Anticipated Utiliza classification (E, assessment area	ation b T, SS(ı)	y Listed Species (List s C), type of use, and inte	pecies, the nsity of use	ir legal e of the
Various wading birds, snakes, fro invertebrates.	gs, turtles, alligators	, snails,	Wood stork (FT) Florida Bonnete (ST), Roseate Sj (ST), Eastern Ind), Bald ed Bat poonb digo S	Eagle (Bald Eagle (68 (FE), Little Blue Heror ill (ST), Tricolored Her nake (FT)	8A-16.002, n (ST), Rec ron (ST), A	F.A.C), Idish Egret Illigator
Observed Evidence of Wildlife Utiliza	ation (List species dire	ctly observed, or	other signs such a	s track	ks, droppings, casings, i	nests, etc.)	:
Additional relevant factors:							
Assessment conducted by:			Assessment date	e(s):			
Rachel Schmidt			03/16/23				

				Application Number.		7336	555111011171100	a Name of Number.
;	SR 31 from	SR 80 to SR 7	78 PD&E Study	-				Wetland J
oact or Mitig	ation:	Direct Impac	ct	Assessment Conducted by: Rachel So	hmidt	Asse	essment Date	e: 03/16/23
	Scoring Guida	-	Optimal (10)	Moderate(7)		Minimal	(4)	Not Present (0)
The scoring lat would be or su	of each indica suitable for th urface water a	ator is based on he type of wetland ssessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, b maintain most wetland/surface v	ut sufficient to vaterfunctions	Minimal level of wetland/surfac functior	support of ce water is	Condition is insufficient to provio wetland/surface water function
00(6)(a) Lo	cation and La	ndscape Support	Moderate quality and o Brazilian pepper an	quantity of adjacent habit d Melaleuca observed w	at and acce	ess for wildlife stem; wildlife a	; moderat	te invasive species prese partially limited from the
Current		With Impact	adjacent roadways;	hydrologic connectivity b habitats derive m	etween adja inimal bene	acent systems	s is less t nabitat.	han optimal; downstream
6		0						
Current		With Impact	community type; wil somewhat	dlife usage was less thar tolerant of altered water	n expected quality; slig	due to the pro ht water quali	ximity of ty degrad	the roadway; species are lation observed.
6		0						
.500(6))(c) Communi	ty Structure						
	x V	egetation						
	B	enthic oth	A majority of approp present (Brazilian pe generally good plants'	riate species were observ apper and Melaleuca); ne condition; age and distrik	ved within the ar-normal repution is app	ne system; mo new growth or proximately ty	oderate ir regenera pical; nor	nvasive/exotic species are ation of species observed mal quality of woody deb
Current		With Impact		reduction in the extent of	of topograph	nic features fo	or the syst	tem.
5		0						
Raw Score (if u	e = Sum of ab plands, divide	pove scores/30 e by 20)		Impact Acres =	0.27			
Current		With Impact		Functional Loss (FL)				
0.57		0.00		For Impact Assessment Areas]:	0.15			
		l		5 x impaot A0165 -	0.15			
,	Impact Delta	(ID)	NOTE: If impact is was assessed usin	proposed to be mitigated at a mitig a UMAM, then the credits require	ation bank that d for mitigation			
	-	1	is equal to Function	as assessed using UMAM, then the credits required for mitigation equal to Functional Loss (FL). If impact mitigation is proposed at a itigation bank that was not assessed using UMAM, then UMAM annot be used to assess impacts; use the assessment method of e mitigation bank				

Site/Project Name		Application Numbe	er		Assessment Area Name	or Number	
SR 31 from SR 80 to SR 78 F	PD&E Study				Wetla	and J	
FLUCCs code	Further classifica	tion (optional)		Impac	t or Mitigation Site?	Assessme	nt Area Size
6170	Mixed	d Wetland Hardw	voods		Impact	0.2	Acres
Basin/Watershed Name/Number Aff	ected Waterbody (Clas	ss)	Special Classificati	ON (i.e.C	DFW, AP, other local/state/federal	designation of	importance)
Tidal Caloosahatchee							
Geographic relationship to and hydrolo	ogic connection with	wetlands, other s	urface water, uplar	nds			
Wetland J is located on the northea of uplands to the north and west an stormwater ditch to the south.	ist quadrant of the s id roadways to the s	SR 31 and SR 80 south and east.	(Palm Beach Blv Wetland J is hydr	d) int ologi	ersection. Wetland J is cally connected to an	s bound b upland cu	y a mixture It
Assessment area description							
Canopy species consists predominately of o Brazilian pepper, and broomsedge. In relati	cabbage palm, laurel oa on to the assessment a	k, and melaleuca. Of rea, the SR 31 roadw	her vegetation obser ay is located to the e	ved inc ast of t	ludes swamp tupelo, bisho he assessment area.	pwood, wax	: myrtle,
Significant nearby features			Uniqueness (co landscape.)	nsider	ing the relative rarity in	relation to	the regional
			This is a commo	on wet	land for this region		
Functions			Mitigation for pre-	vious	permit/other historic use	•	
Water retention/nutrient uptake, floo foraging habitat	od control, water qu	uality, wildlife	None				
Anticipated Wildlife Utilization Based of that are representative of the assessme be found)	on Literature Review nent area and reason	(List of species ably expected to	Anticipated Utiliza classification (E, assessment area	ation b T, SS()	y Listed Species (List s C), type of use, and inte	pecies, the nsity of us	ir legal e of the
Various wading birds, snakes, frogs invertebrates.	s, turtles, alligators	, snails,	Wood stork (FT) Florida Bonnete (ST), Roseate Sp (ST), Eastern Ind), Bald d Bat boonb digo S	l Eagle (Bald Eagle (68 (FE), Little Blue Heror ill (ST), Tricolored Her nake (FT)	8A-16.002, n (ST), Rec ron (ST), A	F.A.C), ddish Egret \lligator
Observed Evidence of Wildlife Utilizati	ion (List species dire	ctly observed, or	other signs such a	s tracl	ks, droppings, casings, i	nests, etc.)):
Additional relevant factors:							
Assessment conducted by:			Assessment date	e(s):			
Rachel Schmidt			03/16/23				

te/Project N	ame:	CD 00 4- CD 7		Application Number:		Assessment /	Area Name or Number:
pact or Mitig	gation:	1 SK 80 to SK /	8 PD&E Study	- Assessment Conducted by:		Assessment I	Date:
	5	Indirect Impa	ict	Rachel Schm	idt		03/16/23
	Scoring Guida	ance	Optimal (10)	Moderate(7)		Minimal (4)	Not Present (0)
The scoring nat would be or si	g of each indica e suitable for tl urface water a	ator is based on he type of wetland ssessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but su maintain most wetland/surface water	fficient to functions	Minimal level of support c wetland/surface water functions	f Condition is insufficient to provid wetland/surface water functions
00(6)(a) Lo Current	ocation and La	ndscape Support	Moderate quality and o Brazilian pepper an adjacent roadways; habitats derive minin moderate because th	quantity of adjacent habitat a Id Melaleuca observed within hydrologic connectivity betw mal benefits from AA habita here will be changes to hydr footprint will increa	and acce n the sys /een adj t. Indirec ologic co ise wildli	ess for wildlife; mode stem; wildlife access acent systems is les t impacts to locatior pnnectivity to adjace fe barriers/access.	rate invasive species prese is partially limited from the s than optimal; downstream and landscape support are nt wetlands and the roadway
6		5					
.500(6 Current	6)(b) Water En (n/a for uplan	With Impact	Water level and flow is as distinct; soil moistu community type; wil somewhat tolerant of a to water quality are a	s slightly lower than appropri re is drier than expected for dlife usage was less than ex altered water quality; slight v anticipated, however, constri quali	ate for the the com pected vater qua uction m ty stand	he community type; imunity; some veget: due to the proximity ality degradation obs ethods will impleme ards.	water level indicators were r ation was inappropriate for t of the roadway; species are erved. Minor adverse impac nt all BMPs and follow wate
.500(6	6)(c) Communi	ty Structure					
	<u>x</u> V	egetation enthic oth	A majority of approp present (Brazilian generally good plants' reduction in the extent to edge effects	riate species were observed pepper, Melaleuca); near-no condition; age and distributi of topographic features for (i.e. increased light, noise, a	within th ormal ne on is app the syste and debr	he system; moderate w growth or regener: proximately typical; r em. The community ris) with the potential	invasive/exotic species are ation of species observed; formal quality of woody deb structure may be affected d for invasive species to
Current		With Impact	prolifera	te and changes in regenera	ion opp	ortunities for existing	native species.
5		4					
Raw Scor (if u	'e = Sum of ab uplands, divide	pove scores/30 e by 20)		Impact Acres =	0.2		
Current		With Impact		Functional Loss (FL)			
0.57		0.47	FL	= ID x Impact Acres =	0.02		
	Impact Delta	(ID)	NOTE: If impact is was assessed usin	proposed to be mitigated at a mitigation g UMAM, then the credits required fo	h bank that mitigation		
Current -	Impact Delta (ID) No TE: I impact is proposed to be mitigated at a mitigation of mitigation is required for mitigation w/Impact 0.10 cannot be used to assessed using UMAM, then UMAM cannot be used to assess impacts; use the assessment method of the mitigation bank. cannot be used to assess impacts; use the assessment method of the mitigation bank.						

Site/Project Name		Application Numbe	er		Assessment Area Name	or Number	
SR 31 from SR 80 to SR 78	PD&E Study				Wetla	and K	
FLUCCs code	Further classifica	ition (optional)		Impact	t or Mitigation Site?	Assessmer	nt Area Size
6310		Wetland Scrub			Impact	3.58	Acres
Basin/Watershed Name/Number Af	fected Waterbody (Clas	ss)	Special Classificati	ON (i.e.O	FW, AP, other local/state/federal	designation of	importance)
Tidal Caloosahatchee							
Geographic relationship to and hydrol	ogic connection with	wetlands, other s	urface water, uplar	nds			
Wetland K is located northwest of t Wetland K is hydrologically connec been altered by surrounding agricu	the intersection of S cted and tidally influ Iltural practices.	SR 31 and SR 80 Jenced by the Ca	(Palm Beach Blve loosahatchee Riv	d) and ver. W	southeast of the Calc etland K is a disturbe	oosahatch d system t	ee River. that has
Assessment area description							
Vegetation observed includes Carolina willo assessment area, it is surrounded by tree n	ow, Brazilian pepper, sal urseries and herbaceou	ltbush, cogongrass, Is uplands being utili	Peruvian primrose w ized for agriculture.	illow, ar	nd various wetland rushes.	In relation to	o the
Significant nearby features			Uniqueness (co landscape.)	nsideri	ng the relative rarity in	relation to	the regional
Caloosahatchee River			This is a commo	on wet	land for this region		
Functions			Mitigation for pre-	vious p	permit/other historic use)	
Water retention/nutrient uptake, flo foraging habitat	od control, water q	uality, wildlife	None				
Anticipated Wildlife Utilization Based of that are representative of the assessme be found)	on Literature Review nent area and reasor	(List of species nably expected to	Anticipated Utiliza classification (E, assessment area	ation by T, SSC)	y Listed Species (List s C), type of use, and inte	pecies, the nsity of use	ir legal e of the
Various wading birds, snakes, frog invertebrates.	s, turtles, alligators	, snails,	Wood stork (FT) Roseate Spoont Eastern Indigo S	, Little bill (ST Snake	Blue Heron (ST), Rec), Tricolored Heron (S (FT)	ldish Egre 5T), Alligat	et (ST), or (ST),
Observed Evidence of Wildlife Utilizat	tion (List species dire	ctly observed, or	other signs such a	s track	s, droppings, casings,	nests, etc.)	:
Great blue heron observed foraging	g in a nearby canal.						
Additional relevant factors:							
Assessment conducted by:			Assessment date	(s):			
Rachel Schmidt			03/16/23				

te/Project N	ame:			Application Number:		Assessment Are	a Name or Number:
act or Miti	SR 31 from	SR 80 to SR 7	78 PD&E Study	-		Assessment Da	Wetland K
Dact of Willig	galion.	Direct Impac	ct	Rachel S	Schmidt	Assessment Da	03/16/23
	Scoring Guida	nce	Optimal (10)	Moderate(7)		Minimal (4)	Not Present (0)
The scoring at would be or s	g of each indica e suitable for th urface water a	ator is based on ne type of wetland ssessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, maintain most wetland/surface	but sufficient to waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provid wetland/surface water function:
00(6)(a) Lo	ocation and La	ndscape Support	Moderate quality and a mile from AA); ma system; ongoing ag	quantity of adjacent hab ority invasive species p ricultural practices and a	itat and acce resent, cogo adjacent tree	ess for wildlife (Caloos ngrass and Brazilian p nurseries provide mo	ahatchee River is within h bepper observed within the derate adverse impacts to
Current		With Impact	roads and excava	ted ditches nearby; dow	nstream hab	itats derive minimal b	enefits from discharges.
5		0					-
Current 4]	With Impact 0	Water level and flow is not distinct; soil mois community type; wildli moderate	lower than expected or ture is appropriate for th fe usage was less than water quality degradati	appropriate ne communit expected; sp on observed	for the community type y; vegetation was more becies have a high tole due to ongoing agricu	e; water level indicators w derately appropriate for th erance of poor water quali lture practices.
.500(6	6)(c) Communit	y Structure egetation					
	Bo	enthic	A majority of inapprop present (Brazilian p observed; generally g	riate species were obse epper, cogongrass, Car bod plants' condition; litt mags, dens, cavities; re	erved within t olina willow); le no variatic duction in ex	he system; majority of minimal new growth o on in range of age and ctent of topographic fea	invasive/exotic species a pr regeneration of species distribution; no presence atures.
Current		With Impact					
4	1	0					
Raw Scor (if u	e = Sum of ab uplands, divide	ove scores/30 by 20)		Impact Acres =	3.58		
Current]	With Impact	l	Functional Loss (FL)			
]	0.00	FL [For Impact Assessment Areas]: = ID x Impact Acres =	1.54		
0.43							
0.43			NOTE: If impact in	proposed to be mitigated at a mit	idation bank that		
0.43	Impact Delta	(ID)	NOTE: If impact is was assessed usin is equal to Function	proposed to be mitigated at a mit g UMAM, then the credits requin al Loss (FL). If impact mitigation	igation bank that ed for mitigation is proposed at a		

Site/Project Name		Application Numbe	er		Assessment Area Name	or Number	
SR 31 from SR 80 to SR 7	8 PD&E Study				Wetla	and K	
FLUCCs code	Further classifica	tion (optional)		Impac	t or Mitigation Site?	Assessme	nt Area Size
6310		Wetland Scrub			Impact	0.59	Acres
Basin/Watershed Name/Number	Affected Waterbody (Clas	ss)	Special Classificati	ON (i.e.C	DFW, AP, other local/state/federal	designation of	importance)
Tidal Caloosahatchee							
Geographic relationship to and hyd	rologic connection with	wetlands, other se	urface water, upla	nds			
Wetland K is located northwest of Wetland K is hydrologically conn been altered by surrounding agri	of the intersection of S ected and tidally influ cultural practices.	SR 31 and SR 80 lenced by the Ca	(Palm Beach Blv loosahatchee Riv	d) and ver. W	l southeast of the Calc etland K is a disturbe	oosahatch d system t	ee River. that has
Assessment area description							
Vegetation observed includes Carolina w assessment area, it is surrounded by tree	rillow, Brazilian pepper, sal e nurseries and herbaceou	ltbush, cogongrass, s uplands being utili	Peruvian primrose w zed for agriculture.	illow, a	nd various wetland rushes.	In relation t	o the
Significant nearby features			Uniqueness (co landscape.)	nsider	ing the relative rarity in	relation to	the regional
Caloosahatchee River This is a common wetland for this region							
Functions			Mitigation for pre-	vious p	permit/other historic use)	
Water retention/nutrient uptake, foraging habitat	flood control, water q	uality, wildlife	None				
Anticipated Wildlife Utilization Base that are representative of the asses be found)	d on Literature Review sment area and reasor	(List of species hably expected to	Anticipated Utiliza classification (E, assessment area	ation b T, SS()	y Listed Species (List s C), type of use, and inte	pecies, the nsity of use	ir legal e of the
Various wading birds, snakes, fro invertebrates.	ogs, turtles, alligators	, snails,	Wood stork (FT) Roseate Spoonl Eastern Indigo S), Little bill (ST Snake	e Blue Heron (ST), Rec I), Tricolored Heron (S (FT)	ldish Egre 5T), Alligat	⊭t (ST), :or (ST),
Observed Evidence of Wildlife Utiliz	ation (List species dire	ctly observed, or	other signs such a	s track	ks, droppings, casings, i	nests, etc.)):
Great blue heron observed forag	ing in a nearby canal.						
Additional relevant factors:							
Assessment conducted by:			Assessment date	e(s):			
Rachel Schmidt			03/16/23	<u>`</u> -/-			

ite/Project Na	ame: SR 31 from	SR 80 to SR 7	78 PD&E Study	Application Number:		As	sessment Area	a Name or Number: Wetland K
npact or Mitig	gation:	Indirect Impa	ict	Assessment Conducted by: Rachel Schr	nidt	As	sessment Date	o3/16/23
1	Scoring Guida	nce	Optimal (10)	Moderate(7)		Minima	al (4)	Not Present (0)
The scoring hat would be or su	of each indica suitable for th urface water as	ator is based on he type of wetland ssessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but s maintain most wetland/surface wate	ufficient to erfunctions	Minimal level o wetland/surfa functio	of support of ace water ons	Condition is insufficient to provide wetland/surface water functions
500(6)(a) Lo Current 5	cation and La	With Impact	Moderate quality and a mile from AA); ma system; ongoing ag wildlife and access; roads and excavated impacts to locatior connectivity to adja accessibility; however;	quantity of adjacent habitat jority invasive species pres- ricultural practices and adja hydrologic connectivity betv ditches nearby; downstrean n and landscape support are acent wetlands, additional fe the new pond site may incl small amphib	and acce ent, cogo cent tree veen adja n habitats modera modera recing as rease the eans and	ess for wildlif ongrass and E onurseries pr acent system s derive minin the because t sociated with potential for l invertebrate	e (Caloosa Brazilian perovide mod s is somev mal benefii here will be the new p wildlife for ss.	hatchee River is within ha epper observed within the lerate adverse impacts to what limited by agriculture ts from discharges. Indirec e changes to hydrologic bond site that will reduce raging for wading bird, othe
.500(6 Current 4	i)(b) Water En (n/a for uplan	vironment ds) With Impact 3	Water level and flow is not distinct; soil mois community type; wildl moderate water quality water quality are antici	lower than expected or app sture is appropriate for the c ife usage was less than exp y degradation observed due pated, however, constructio	oropriate communi pected; sj to ongo on metho standard	for the comm ty; vegetatior becies have a ing agricultur ds will impler s.	nunity type n was mod a high tole re practices ment all BN	; water level indicators we erately appropriate for the rance of poor water quality s. Minor adverse impacts t MPs and follow water quali
.500(6) Current 4)(c) Communit Ve Be Bc	y Structure egetation enthic oth With Impact 3	A majority of inapprop present (Brazilian p observed; generally g snags, dens, cavities; due to land use o	priate species were observe epper, cogongrass, Carolin ood plants' condition; little r reduction in extent of topog changes in the area that ma regeneration opportur	d within t a willow) oo variatio graphic fe y allow in ities for e	the system; n ; minimal new on in range o eatures. The nvasive spec existing nativ	najority of w growth o f age and community ries to proli re species.	invasive/exotic species ar r regeneration of species distribution; no presence of y structure may be affecte ferate and changes in
			Τ Γ			1		
Raw Score (if u	e = Sum of ab Iplands, divide	oove scores/30 by 20)		Impact Acres =	0.59			
Current		With Impact]	Functional Loss (FL)				
0.43		0.33	FL	[For Impact Assessment Areas]: . = ID x Impact Acres =	0.06			
	Impact Delta	(ID)	NOTE: If impact is was assessed using	proposed to be mitigated at a mitigation	on bank that	•		
Impact Delta (ID) was assessed using UMAM, then the credit or mitigation is proposed at a mitigation is equal to Functional Loss (FL). If impact mitigation is proposed at a mitigation bank that was not assessed using UMAM, then UMAM cannot be used to assess impacts; use the assessment method of the mitigation bank.								

Site/Project Name		Application Number	er	1	Assessment Area Name o	or Number	
SR 31 from SR 80 to SR 78	PD&E Study				Wetla	and L	
FLUCCs code	Further classifica	tion (optional)		Impact	or Mitigation Site?	Assessment	t Area Size
6170	Mixed	d Wetland Hardw	voods		Impact	2.35	Acres
Basin/Watershed Name/Number Af Tidal Caloosahatchee	fected Waterbody (Clas	ss)	Special Classificati	ON (i.e.O	FW, AP, other local/state/federal	designation of in	mportance)
Geographic relationship to and hydrol	logic connection with	wetlands, other s	urface water, uplar	nds			
Wetland L is located along the wes tidally influenced by the Caloosaha	stern side of SR 31, s atchee River. Wetlan	south of the Calc Id L is separated	oosahatchee Rive from adjacent w	er. Wet etland	land L is hydrologica systems by a narrow	lly connect upland be	ted and rm.
Assessment area description							
Canopy species consists of Austrailian pine myrtle, buttonbush, and saltbush. Clusters giant leather fern, cinnamon fern, cattail, fla to the northwest and SR 31 roadway is loca	e, cabbage palm, laurel c of red mangroves were d atsedge, Peruvian primro ated to the east of the ass	bak, ear pod tree, and observed within the se willow, and maid sessment area.	d live oak. Subcanop SR 31 right-of-way. O encane. In relation to	y specie other veg the ass	es include Brazilian pepper getation observed includes sessment area, the Caloosa	r, Carolina wil s giant reed, re ahatchee Rive	llow, wax oyal fern, er is located
Significant nearby features			Uniqueness (co landscape.)	nsideri	ng the relative rarity in	relation to tl	he regional
Caloosahatchee River			This is a commo	on wetl	land for this region		
Functions			Mitigation for pre-	vious p	ermit/other historic use)	
Water retention/nutrient uptake, flo foraging habitat	ood control, water qu	uality, wildlife	None				
Anticipated Wildlife Utilization Based that are representative of the assessr be found)	on Literature Review ment area and reason	(List of species hably expected to	Anticipated Utiliza classification (E, assessment area	ation by T, SSC)	y Listed Species (List s), type of use, and inte	pecies, thei nsity of use	r legal of the
Various wading birds, snakes, frog invertebrates.	ıs, turtles, alligators	, snails,	Wood stork (FT) Florida Bonnete (ST), Roseate Sp (ST), Eastern Ind), Bald d Bat (boonbi digo Si	Eagle (Bald Eagle (68 (FE), Little Blue Heror ill (ST), Tricolored Her nake (FT)	8A-16.002, I n (ST), Red ron (ST), Al	F.A.C), dish Egret ligator
Observed Evidence of Wildlife Utilizat	tion (List species dire	ctly observed, or	other signs such a	s track	s, droppings, casings, i	nests, etc.):	
Additional relevant factors:							
Assessment conducted by:			Assessment date	e(s):			
Rachel Schmidt			03/16/23				

te/Project Na	ame: SR 31 from	sR 80 to SR 7	'8 PD&E Study	Application Number:		A	ssessment Area	a Name or Number: Wetland L
pact or Mitig	gation:	Direct Impac	t	Assessment Conducted by: Rachel Sc	nmidt	A	ssessment Date	e: 03/16/23
	Scoring Guida	ance	Optimal (10)	Moderate(7)		Minim	al (4)	Not Present (0)
The scoring nat would be or se	g of each indica e suitable for th urface water a	ator is based on he type of wetland ssessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, bu maintain most wetland/surface wa	t sufficient to aterfunctions	Minimal level wetland/sur funct	of support of face water ions	Condition is insufficient to provid wetland/surface water functions
000(6)(a) Lo Current 6	ocation and La	Ndscape Support	Optimal to moderate q the Caloosahatchee system; wildlife a (Sweetwater Marin somewhat limited b	uality and quantity of adja River; minimal invasive s ccess is partially limited fi a and Boathouse Restaur y a narrow upland berm, h downstream habitats deri	icent habita pecies pre om the adj ant); hydro iowever, is ve significa	at and acces sent, some jacent roadv logic conne tidally influd ant benefits	ss for wildlii Brazilian p way and co ctivity betw enced by th from AA qu	fe with nearby wetlands an epper observed within the mmercial development een adjacent systems is ne Caloosahatchee River; nality.
.500(6 Current	6)(b) Water En (n/a for uplan	wironment Ids) With Impact 0	Water level and flow is or reliable due to hy appropriate for the roadway; species are	s somewhat appropriate for ydrologic alterations; soil i community type; wildlife somewhat tolerant of alte	or the comr noisture is usage was red water	nunity type; appropriate less than e quality; sligf	water leve of the con xpected du nt water qua	l indicators were not distir nmunity; vegetation was e to the proximity of the ality degradation observed
.500(6	i)(c) Communi 	ty Structure egetation enthic oth With Impact 0	A majority of appro species are present species observed; g quality	priate species were obser (Brazilian pepper, Austrail jenerally good plants' con of woody debris; topogra	ved within ian pine); r dition; age ohic feature	the system; normal new and distribu es were sub	present bu growth or r ution is app poptimal for	It minimal invasive/exotic egeneration of subcanopy roximately typical; normal the system.
			r – – – – – – – – – – – – – – – – – – –			1		
Raw Scor (if u	e = Sum of al uplands, divide	oove scores/30 by 20)		Impact Acres =	2.35			
Current		With Impact		Functional Loss (FL)				
0.60		0.00	FL	For Impact Assessment Areas]: = ID x Impact Acres =	1.41			
	Impact Delta	(ID)	NOTE: If impact is was assessed usin	proposed to be mitigated at a mitiga or UMAM, then the credits required	ation bank that	•		
Current -	w/Impact	0.60	is equal to Function mitigation bank that cannot be used to	nal Loss (FL). If impact mitigation is at was not assessed using UMAM assess impacts; use the assessm	proposed at a , then UMAM ent method of			

Site/Project Name		Application Number			Assessment Area Name or Number			
SR 31 from SR 80 to SR 78 PD&E Study					Wetland L			
FLUCCs code Further classificat		tion (optional)		Impac	t or Mitigation Site?	Assessment Area Size		
6170 Mixed Wetland Hard			voods	Impact 0.9 A			Acres	
Basin/Watershed Name/Number Affected Waterbody (Class)			Special Classificati	on (i.e.C	DFW, AP, other local/state/federal	designation of in	nportance)	
Tidal Caloosahatchee								
Geographic relationship to and hydro	urface water, uplar	nds						
Wetland L is located along the wes tidally influenced by the Caloosaha	stern side of SR 31, s atchee River. Wetlan	south of the Calc Id L is separated	oosahatchee Rive from adjacent w	er. We etland	tland L is hydrologica I systems by a narrow	lly connecte upland ber	ed and rm.	
Assessment area description								
Canopy species consists of Austrailian pin myrtle, buttonbush, and saltbush. Clusters giant leather fern, cinnamon fern, cattail, fla to the northwest and SR 31 roadway is loca	ne, cabbage palm, laurel c s of red mangroves were o atsedge, Peruvian primro ated to the east of the ass	bak, ear pod tree, and observed within the se willow, and maid sessment area.	d live oak. Subcanop SR 31 right-of-way. O encane. In relation to	y speci other ve the ass	es include Brazilian pepper getation observed includes sessment area, the Caloosa	; Carolina will giant reed, ro hatchee Rive	ow, wax ›yal fern, r is located	
Significant nearby features			Uniqueness (considering the relative rarity in relation to the regional landscape.)					
Caloosahatchee River			This is a commo	on wet	land for this region			
Functions			Mitigation for previous permit/other historic use					
Water retention/nutrient uptake, flo foraging habitat	uality, wildlife	None						
Anticipated Wildlife Utilization Based that are representative of the assess be found)	on Literature Review ment area and reason	(List of species hably expected to	Anticipated Utiliza classification (E, assessment area	ation b T, SS()	y Listed Species (List s C), type of use, and inte	pecies, their nsity of use	legal of the	
Various wading birds, snakes, frogs, turtles, alligators, snails, invertebrates.			Wood stork (FT), Bald Eagle (Bald Eagle (68A-16.002, F.A.C), Florida Bonneted Bat (FE), Little Blue Heron (ST), Reddish Egret (ST), Roseate Spoonbill (ST), Tricolored Heron (ST), Alligator (ST), Eastern Indigo Snake (FT)					
Observed Evidence of Wildlife Utiliza	ation (List species dire	ctly observed, or	other signs such a	s track	ks, droppings, casings, i	nests, etc.):		
Additional relevant factors:								
Assessment conducted by:			Assessment date	e(s):				
Rachel Schmidt			03/16/23					

UNIFORM WETLAND MITIGATION ASSESSMENT WORKSHEET - PART II - IMPACT Form 62-345.900(2), F.A.C. (See Sections 62-345.500 and .600, F.A.C.) Assessment Area Name or Number Site/Project Name Application Number: SR 31 from SR 80 to SR 78 PD&E Study Wetland L Impact or Mitigation: Assessment Conducted by: Assessment Date: 03/16/23 Indirect Impact Rachel Schmidt Scoring Guidance Optimal (10) Moderate(7) Minimal (4) Not Present (0) Minimal level of support of The scoring of each indicator is based on Condition is optimal and fully Condition is less than optimal, but sufficient to Condition is insufficient to provide hat would be suitable for the type of wetland supports wetland/surface wate wetland/surface w maintain most wetland/surface waterfunctions wetland/surface water functions or surface water assessed functions functions Optimal to moderate quality and quantity of adjacent habitat and access for wildlife with nearby wetlands and .500(6)(a) Location and Landscape Support the Caloosahatchee River; minimal invasive species present, some Brazilian pepper observed within the system; wildlife access is partially limited from the adjacent roadway and commercial development (Sweetwater Marina and Boathouse Restaurant); hydrologic connectivity between adjacent systems is somewhat limited by a narrow upland berm, however, is tidally influenced by the Caloosahatchee River; downstream habitats derive significant benefits from AA quality. Indirect impacts to location and landscape Current With Impact support are moderate because there will be changes to hydrologic connectivity to adjacent wetlands and the roadway footprint will increase wildlife barriers/access. 5 6 .500(6)(b) Water Environment (n/a for uplands) Water level and flow is appropriate for the community type; water level indicators were not as distinct; soil moisture is appropriate for the community; vegetation was appropriate for the community type; wildlife usage was less than expected due to the proximity of the roadway; species are somewhat tolerant of altered water quality; slight water quality degradation observed. Minor adverse impacts to water quality are anticipated, however, construction methods will implement all BMPs and follow water quality standards. Current With Impact 6 5 .500(6)(c) Community Structure x Vegetation A majority of appropriate species were observed within the system; present but minimal invasive/exotic species are present (Brazilian pepper, Austrailian pine); normal new growth or regeneration of subcanopy Benthic species observed; generally good plants' condition; age and distribution is approximately typical; normal quality of woody debris; topographic features were suboptimal for the system. The community structure may Both be affected due to edge effects (i.e. increased light, noise, and debris) with the potential for invasive species to proliferate and changes in regeneration opportunities for existing native species. Current With Impact 5 6 0.9 Impact Acres = Raw Score = Sum of above scores/30 (if uplands, divide by 20) Current With Impact Functional Loss (FL) [For Impact Assessment Areas] 0.60 0.50 FL = ID x Impact Acres = 0.09 NOTE: If impact is proposed to be mitigated at a mitigation bank that Impact Delta (ID) was assessed using UMAM, then the credits required for mitigation is equal to Functional Loss (FL). If impact mitigation is proposed at a mitigation bank that was not assessed using UMAM, then UMAM Current - w/Impact 0.10 cannot be used to assess impacts; use the assessment method of the mitigaiton bank

Site/Project Name		Application Number	r		Assessment Area Name o	or Number	
SR 31 from SR 80 to SR 78 PD&E Study					Wetland N		
FLUCCs code Further classi		cation (optional)		Impac	t or Mitigation Site?	Assessment Area Size	
6170 Mixed Wetlar		d Wetland Hardw	ardwoods		Impact	0.07	Acres
Basin/Watershed Name/Number	Special Classificati	on (i.e.C	DFW, AP, other local/state/federal	designation of	importance)		
Geographic relationship to and hydro	ologic connection with	wetlands, other su	urface water, uplar	nds			
Wetland N is located adjacent to a north and west, disturbed herbace to Wetland J but it now separated	a pond site outfall for eous site to the south by an upland berm.	Pond Site 1-E. T h, and upland sh	his wetland syst rub to the east. H	em is listori	bound by low density cally this wetland syst	residentia tem was c	al to the onnected
Assessment area description							
Observed canopy species include laurel o fern.	oak, cabbage palm, and sw	veet bay. Subcanopy	and groundcover sp	ecies i	nclude Brazilian pepper, wa	ax myrtle and	d cinnamon
Significant nearby features			Uniqueness (co landscape.)	nsider	ing the relative rarity in	relation to	the regional
Caloosahatchee River			This is a commo	on wet	land for this region		
Functions			Mitigation for previous permit/other historic use				
Water retention/nutrient uptake, fl foraging habitat	ood control, water qu	uality, wildlife	None				
Anticipated Wildlife Utilization Basec that are representative of the assess be found)	d on Literature Review sment area and reason	(List of species hably expected to	Anticipated Utiliza classification (E, assessment area	ation b T, SS()	y Listed Species (List s C), type of use, and inte	pecies, the nsity of use	ir legal e of the
Various wading birds, snakes, frogs, turtles, alligators, snails, invertebrates.			Wood stork (FT), Bald Eagle (Bald Eagle (68A-16.002, F.A.C), Florida Bonneted Bat (FE), Little Blue Heron (ST), Reddish Egret (ST), Roseate Spoonbill (ST), Tricolored Heron (ST), Alligator (ST), Eastern Indigo Snake (FT)				
Observed Evidence of Wildlife Utiliza	ation (List species dire	ctly observed, or o	other signs such a	s tracl	κs, droppings, casings, ι	nests, etc.)	:
Additional relevant factors:							
Assessment conducted by:			Assessment date	e(s):			
Rachel Schmidt			03/16/23				

	te/Project Name:		Application Number:		Assessment Are	a Name or Number:				
SR 31 from SR 80 to SR 78 PD&E Study		Assessment Conducted by:		Assessment Dat	Wetland N					
Direct Impact			Rachel S	Schmidt	A Social Ment	03/16/23				
	Scoring Guida	ince	Optimal (10)	Moderate(7)		Minimal (4)	nimal (4) Not Present (0)			
The scoring at would b or s	g of each indica e suitable for th surface water a	ator is based on ne type of wetland ssessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, maintain most wetland/surface	but sufficient to waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provid wetland/surface water functions			
00(6)(a) Lo	ocation and La	ndscape Support	Optimal to moderate q the Caloosahatchee	uality and quantity of ac River; minimal invasive ss is partially limited fro	ljacent habita species pre m the adjace	at and access for wildli sent, some Brazilian p	fe with nearby wetlands a epper observed within the s and roadway: hydrologi			
Current	rrent With Impact connectivity between			adjacent systems is somewhat limited by a narrow upland berm; downstream habitats						
	1			derive signin	cant benefits	a nom AA quality.				
6		0								
Current		With Impact	appropriate for the roadway; species are	community type; wildlif somewhat tolerant of a	e usage was Itered water o	less than expected du quality; slight water qu	le to the proximity of the ality degradation observed			
.500(6	6)(c) Communi 	ly Structure egetation enthic oth	A majority of appro species are present species observed; g quality	priate species were obs Brazilian pepper, Austr enerally good plants' co of woody debris; topog	erved within ailian pine); r ondition; age raphic feature	the system; present bu normal new growth or r and distribution is app es were suboptimal for	It minimal invasive/exotic egeneration of subcanop roximately typical; normal the system.			
Current		With Impact								
6		0								
	re = Sum of ab uplands, divide	pove scores/30 e by 20)		Impact Acres =	0.07					
Raw Scor (if]	Functional Loss (FL)						
Raw Scor (if Current		With Impact	.							
Raw Scor (if) Current		0.00	FL	For Impact Assessment Areas]: = ID x Impact Acres =	0.04					
Raw Scor (if Current 0.60		0.00	FL NOTE: If impact is	For Impact Assessment Areas]: = ID x Impact Acres = proposed to be mitigated at a mi	0.04					

Site/Project Name		Application Number	er		Assessment Area Name	or Number		
SR 31 from SR 80 to SR 78 PD&E Study					Wetland N			
FLUCCs code Further classification (optional)		tion (optional)		Impac	t or Mitigation Site?	Assessmei	nt Area Size	
6170	Mixed Wetland Hardw		/oods		Impact	0.21	Acres	
Basin/Watershed Name/Number Affe	Affected Waterbody (Class)			on (i.e.C	DFW, AP, other local/state/federal	designation of	importance)	
Tidal Caloosahatchee								
Geographic relationship to and hydrolog	gic connection with	urface water, upla	nds					
Wetland N is located adjacent to a po north and west, disturbed herbaceou to Wetland J but it now separated by	ond site outfall for us site to the soutl an upland berm.	Pond Site 1-E. 1 h, and upland sh	his wetland syst rub to the east. H	em is listori	bound by low density cally this wetland syst	residentia tem was c	al to the onnected	
Assessment area description								
Observed canopy species include laurel oak, cabbage palm, and sweet bay. Subcanopy and groundcover species include Brazilian pepper, wax myrtle and cinnamon fern.								
Significant nearby features			Uniqueness (co landscape.)	nsider	ing the relative rarity in	relation to	the regional	
Caloosahatchee River			This is a commo	on wet	tland for this region			
Functions			Mitigation for pre-	vious	permit/other historic use	•		
Water retention/nutrient uptake, floo foraging habitat	d control, water qu	uality, wildlife	None					
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)			Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)					
Various wading birds, snakes, frogs, turtles, alligators, snails, invertebrates.			Wood stork (FT), Bald Eagle (Bald Eagle (68A-16.002, F.A.C), Florida Bonneted Bat (FE), Little Blue Heron (ST), Reddish Egret (ST), Roseate Spoonbill (ST), Tricolored Heron (ST), Alligator (ST), Eastern Indigo Snake (FT)					
Observed Evidence of Wildlife Utilization	on (List species dire	ctly observed, or	other signs such a	s tracl	ks, droppings, casings, i	nests, etc.)):	
Additional relevant factors:								
Assessment conducted by:			Assessment date	e(s):				
Rachel Schmidt			03/16/23					

	ite/Project Name:			Application Number:		Assessment Are	a Name or Number:			
SR 31 from SR 80 to SR 78 PD&E Study		- Assessment Conducted by:		Assessment Dat	e:					
Direct Impact			Rachel	Schmidt		03/16/23				
	Scoring Guida	nce	Optimal (10)	Moderate(7)		Minimal (4)	Not Present (0)			
The scoring at would b or s	g of each indica e suitable for th surface water a	ator is based on ne type of wetland ssessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, maintain most wetland/surface	but sufficient to waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provid wetland/surface water functions			
00(6)(a) Lo	ocation and La	ndscape Support	Optimal to moderate of the Caloosahatchee system: wildlife acce	quality and quantity of ac River; minimal invasive	djacent habita species pre	at and access for wildli sent, some Brazilian p nt residential propertie	fe with nearby wetlands a epper observed within the is and roadway: bydrolooi			
Current	rent With Impact connectivity between a			adjacent systems is sor	idjacent systems is somewhat limited by a narrow upland berm; downstream habitat					
				derive signifi	derive significant benefits from AA quality.					
6		4								
Current 6		With Impact 5	appropriate for the roadway; species are	e community type; wildlif e somewhat tolerant of a	e usage was Itered water	less than expected du quality; slight water qu	e to the proximity of the ality degradation observed			
.500(6	6)(c) Communit	y Structure								
,	v V	actation								
	<u> </u>		A majority of appro	priate species were obs	erved within	the system; present bu	ut minimal invasive/exotic			
	Benthic species are prese Both species observe		species are present species observed; quality	(Brazilian pepper, Austrailian pine); normal new growth or regeneration of subcanopy generally good plants' condition; age and distribution is approximately typical; normal v of woody debris; topographic features were suboptimal for the system.						
Current		With Impact								
		5								
6			1	Impact Acres =	0.21					
6 Raw Scor (if	r e = Sum of ab uplands, divide	ove scores/30 by 20)								
6 Raw Scor (if	re = Sum of at uplands, divide	ove scores/30 by 20) With Impact		Functional Loss (FL)						
6 Raw Scor (if t Current	re = Sum of ab uplands, divide	With Impact		Functional Loss (FL) [For Impact Assessment Areas]: _ = ID x Impact Acres =	0.03					
6 Raw Scor (if t Current 0.60	re = Sum of at uplands, divide	With Impact	FL NOTE: If impact is	Functional Loss (FL) [For Impact Assessment Areas]: _ = ID x Impact Acres = proposed to be mitigated at a mi	0.03					