DRAFT
Natural Resources Evaluation

Florida's Turnpike Enterprise

Poinciana Parkway Extension Connector
Project Development and Environment (PD&E) Study
From CR 532 to north of I-4/SR 429 Interchange
Osceola and Polk Counties, Florida

Financial Management Number: 446581-1-22-01
ETDM Number: 14445

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.

November 2022

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EXECUTIVE SUMMARY

The Florida's Turnpike Enterprise (FTE) is conducting a Project Development and Environment (PD&E) Study for Poinciana Parkway Extension Connector (PPEC) in Polk and Osceola Counties to determine alternative roadway improvements. Eighteen (18) build alternatives were considered as part of this PD&E Study. The Preferred Alternative extends SR 538 (Poinciana Parkway) from south of CR 532 to north of Sand Hill Road. A project study area was established that includes the multiple build alternatives and a buffer from these alternatives. From CR 532 to I-4, the PPEC proposes a 6-lane typical section, expandable to eight (8) lanes. From I-4 to Sinclair Road the proposed typical section consists of four (4) lanes with southbound and northbound Collector-Distributor (CD) systems to provide the connections from I-4 to Sinclair Road. North of the Sinclair Road interchange the northbound and southbound CD systems merge with the SR 429 main lanes and connect with the proposed eight (8) lane expansion of SR 429 extending northward.

In accordance with Presidential Executive Order 11990, Federal Highway Administration (FHWA) Technical Advisory T6640.8A, Section 7(c) of the Endangered Species Act (ESA) of 1973 (ESA, P.L. 93-205), and FDOT's *Project Development and Environment Manual*, a Wetlands Evaluation and Protected Species and Habitat Assessment was conducted for the proposed PPEC. The project was screened through the Efficient Transportation Decision Making (ETDM) Environmental Screening Tool (EST) and the programming screen was published January 21, 2022 (ETDM #14445 - https://etdmpub.fla-etat.org/est/).

This Natural Resource Evaluation (NRE) was prepared as part of the PD&E study. This report reviews the potential impacts to wetland systems and federal and state-protected species, summarizes the results of these assessments, and identifies measures to avoid, minimize and mitigate for any potential impacts. A summary of the analysis of potential project impacts for the proposed PPEC is presented below.

Protected Species and Habitat

The project study area was evaluated for potential occurrences of federal and state-listed plant and animal species in accordance with Section 7 of the Endangered Species Act of 1973, as amended, and Chapters 5B-40 and 68A-27 of the F.A.C. The evaluation included coordination with the Florida Natural Areas Inventory (FNAI), literature review, database searches, and field assessments of the project area to identify the potential occurrence of protected species and/or presence of federal designated critical habitat. Field evaluations of the project area and adjacent habitats and general wildlife surveys were conducted by project biologists on September 27, October 25-28, and 30, 2021.

Per the PD&E Manual Chapter *Protected Species and Habitat Assessment*, 31 federally listed species and 25 state listed species have been reviewed for the potential to occur within the project study area. The project is not within any US Fish and Wildlife Service (USFWS) designated critical habitat. An effect determination was made for each of these federal and state-listed species based on an analysis of the potential impacts of the proposed project on each species. Based on evaluation of collected data and field reviews, the federal and state-listed species listed in **Table ES-1**, **Table ES-2** and **Table ES-3** below have been reviewed for the potential to occur within or adjacent to the project area.

Table ES-1 Federal Protected Species Effect Determinations

Project Impact Determination	Federal Listed Species	
	Species	***Status****
	Flora	
	Avon Park rabbit-bells (*Crotalaria avonensis*)	***FE***
	Clasping warea (*Warea amplexifolia*)	***FE***
	Florida bonamia (*Bonamia grandiflora)*	***FT***
	Florida jointweed *(Polygonella basiramia)*	***FE***
	Garrett's scrub balm (*Dicerandra christamnii*)	***FE***
	Perforate reindeer lichen (*Cladonia perforate*)	***FE***
	Pygmy fringe tree *(Chionanthus pygmaeus)*	***FE***
"No effect"	Scrub buckwheat (*Eriogonum longifolium* var. *gnaphalifolium)*	***FT***
	Scrub lupine (*Lupinus aridorum*)	***FE***
	Scrub mint (*Dicerandra frutescens*)	***FE***
	Scrub pigeon-wing (*Clitoria fragrans*)	***FT***
	Short-leaved rosemary (*Conradina brevifolia)*	***FE***
	Fauna	
	Florida grasshopper sparrow (*Ammodramus savannarum floridanus*)	***FE***
	Crested caracara (*Caracara cheriway*)	***FT***
	Everglade snail kite (*Rostrhamus sociabilis plumbeus*)	***FE***
	Red-cockaded woodpecker (*Picoides borealis*)	***FE***
	Flora	
	Britton's beargrass (*Nolina brittoniana)*	***FE***
	Carter's warea (*Warea carteri)*	***FE***
	Florida blazing star (*Liatris ohlingerae*)	***FE***
	Highlands scrub hypericum (*Hypericum cumulicola*)	***FE***
	Lewton's polygala (*Polygala lewtonii)*	***FE***
"May affect, but is not likely to adversely affect"	Papery nailwort (*Paronychia chartacea* ssp. *chartacea)*	***FT***
	Scrub plum (*Prunus geniculata*)	***FE***
	Small's jointweed (*Polygonella myriophylla*)	***FE***
	Fauna	
	American alligator (*Alligator mississippiensis*)	***FT***
	Eastern indigo snake (*Drymarchon couperi*)	***FT***
	Florida scrub-jay *(Aphelocoma coerulescens*)	***FT***
	Wood stork (*Mycteria americana*)	***FT***
"May affect, likely to adversely affect"	Blue-tailed mole skink (*Plestiodon egregius lividus*)	***FT***
	Sand skink (*Plestiodon reynoldsi*)	***FT***

*FE – Federally endangered; FT – Federally threatened; SE – State endangered; ST – State threatened; C – Federal candidate; BGEPA – Bald and Golden Eagle Protection Act

Table ES-2 State Protected Species Effect Determinations

Project Impact Determination	State Listed Species	
	Species	***Status****
	Flora	
"No effect"	Ashe's savory (*Calamintha ashei)*	***ST***
	Chapman's sedge (*Carex chapmannii*)	***ST***
	Florida beargrass (*Nolina atopocarpa)*	***ST***
	Hartwrightia (*Hartwrightia floridana)*	***ST***
	Incised groove-bur (*Agrimonia incisa*)	***ST***
	Nodding pinweed (*Lechea cernua*)	***ST***
	Piedmont jointgrass (*Coelorachis tuberculosa*)	***ST***
	Fauna	
	Florida burrowing owl (*Athene cunicularia floridana*)	***ST***
	Flora	
	Celestial lily (*Nemastylis floridana)*	***SE***
	Cutthroat grass (*Panicum abscissum*)	***SE***
	Florida spiny-pod (*Matelea floridana)*	***SE***
	Florida willow (*Salix floridana)*	***SE***
	Giant orchid (*Pteroglossaspis ecristata)*	***ST***
	Many-flowered grass-pink (*Calopogon multiflorus)*	***ST***
	Pine pinweed (*Lechea divaricate*)	***SE***
	Pine-woods bluestem (*Andropogon arctatus*)	***ST***
	Sand butterfly pea (*Centrosema arenicola)*	***SE***
"No adverse effect anticipated"	Scrub bluestem (*Andropogon arctatus*)	***SE***
	Star anise (*Illicium parviflorum*)	***SE***
	Fauna	
	Gopher tortoise (*Gopherus polyphemus*)	***C/ST***
	Florida pine snake (*Pituophis melanoleucus mugitus*)	***ST***
	Little blue heron (*Egretta caerulea*)	***ST***
	Tricolored heron (*Egretta tricolor*)	***ST***
	Roseate spoonbill *(Platalea ajaja)*	***ST***
	Florida sandhill crane (*Antigone canadensis pratensis*)	***ST***
	Southeastern American kestrel (*Falco sparverius paulus*)	***ST***

*FE – Federally endangered; FT – Federally threatened; SE – State endangered; ST – State threatened; C – Federal candidate; BGEPA – Bald and Golden Eagle Protection Act

Table ES-3 Other Species of Concern Effect Determinations

Project Impact Determination	Additional Protected Species	
	Species	***Status****
No impacts to primary or secondary buffer zones	Bald eagle (*Haliaeetus leucocephalus*)	***BGEPA***

*FE – Federally endangered; FT – Federally threatened; SE – State endangered; ST – State threatened; C – Federal candidate; BGEPA – Bald and Golden Eagle Protection Act

Wetlands

For the purposes of this document, wetlands are defined as per 62.340 Florida Administrative Code (F.A.C.) and Section 373.019 (27), Florida Statutes (F.S.). Surface waters are defined as open water bodies or streams/waterways. The jurisdictional limits of wetlands and surface waters were estimated in accordance with the State unified wetland delineation methodologies as adopted by the Florida Department of Environmental Protection and the water management districts per Chapter 62-340, F.A.C. and described in *The Florida Wetlands Delineation Manual* and the USACE 1987 Wetland Delineation Manual and regional supplement. The extent and types of wetlands in the project study area were documented in accordance with Executive Order EO 11990, Protection of Wetlands, and the PD&E Manual.

The No-Build Alternative would result in no impacts to wetlands or surface waters. Unavoidable wetland impacts will occur as a result of the proposed build alternatives. The wetlands to be impacted by the proposed project include relatively undisturbed wetlands within the new alignment section and previously disturbed wetlands adjacent to existing roadways. Wetland and surface water habitat types that may be impacted are included in **Table ES-4**. Impacts resulting from the Preferred Alternative include 133.27 acres of wetlands and 15.45 acres of surface waters. There are also 44.73 acres of wetland conservation easements within the Preferred Alternative. A description of land use, dominant vegetation, soil types, and other information regarding these communities is provided in subsequent sections of this report. The Uniform Mitigation Assessment Methodology (UMAM) analysis was performed on representative wetland direct impact areas. Construction of the Preferred Alternative results in an estimated loss of 114.31 functional units for direct impacts.

Wetland impacts which will result from the construction of this project will be mitigated pursuant to Section 373.4137, F.S., to satisfy all mitigation requirements of Part IV of Chapter 373, F.S., and 33 U.S.C. §1344. Compensatory mitigation for direct and secondary wetland impacts will be completed through the use of a private mitigation bank and any other mitigation options that satisfy state and federal requirements.

Final determination of jurisdictional boundaries, in addition to mitigation requirements, will be coordinated between the FTE and permitting agencies during the final design phase of the project. The results of the PD&E Study indicate there are no practicable alternatives to the proposed impacts due to the need for a roadway extension to reduce traffic congestion and address safety considerations. In accordance with Presidential Executive Order (EO) 11990, the FTE has undertaken all actions to minimize the destruction, loss or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities. The FTE has determined that there is no practicable alternative to construction impacts occurring in wetlands. The proposed project will have no significant short-term or long-term adverse impacts to wetlands because any unavoidable impacts to wetlands will be mitigated to achieve no net loss of wetland function. Furthermore, all wetland impacts have been avoided and minimized to the greatest extent possible and have been limited to those areas which are required to meet minimum safety requirements.

Table ES-4 Wetland and Surface Water Acreages within the Preferred Alternative

Representative Wetlands	FLUCFCS Classification	FLUCFCS Description	USFWS Classification	Preferred Alternative Impact Acreage
WL 01	617	Mixed Wetland Hardwoods	PFO1C	26.05
WL Conservation Easements	617, 621, 630	Forested Wetlands	PFO1C/ PFO2F/ PFO1/3	44.73
WL 02	621	Cypress	PFO2F	14.88
WL 03	625	Hydric Pine Flatwoods	PFO4C	12.82
WL 04	630	Wetland Forested Mixed	PFO1/3	30.70
WL 05	640	Vegetated Non-Forested Wetlands	PEMC1C	1.33
WL 06	641	Freshwater Marshes	PEM1F	1.43
WL 08	6172	Mixed Wetland Shrubs	PSS1C	1.33
SW 01	530	Reservoir	PUBHx	15.45
Total Wetland Impacts				**133.27**
Total Surface Water Impacts				**15.45**
Total Impacts				**148.72**

Essential Fish Habitat

The proposed project is not located within or near any coastal resources and will not involve Essential Fish Habitat as none exists within the project study area. This was confirmed by the National Marine Fisheries Service (NMFS) in the ETDM comments.

1.0 INTRODUCTION

The FTE is conducting a Project Development and Environment (PD&E) Study to evaluate the proposed Poinciana Parkway Extension Connector (PPEC) from CR 532 to north of the I-4/SR 429 interchange as depicted in **Figure 1-1 Project Location Map** and **Figure 1-2 Preferred Alternative**.

In accordance with Presidential Executive Order 11990, Federal Highway Administration (FHWA) Technical Advisory T6640.8A, Section 7(c) of the Endangered Species Act (ESA) of 1973 (ESA, P.L. 93-205), and the Florida Department of Transportation (FDOT) *Project Development and Environment (PD&E) Manual*, a Wetlands Evaluation and Protected Species and Habitat Assessment were conducted for the proposed extension of Poinciana Parkway. The project was screened through the Efficient Transportation Decision Making (ETDM) Environmental Screening Tool (EST) and the programming screen was published January 21, 2022 (ETDM #14445 - https://etdmpub.fla-etat.org/est/).

This Natural Resource Evaluation (NRE) is prepared as part of this PD&E study. This report reviews the potential impacts to wetland systems and federal and state-protected species, summarizes the results of these assessments, and identifies measures to avoid, minimize and mitigate for any potential impacts.

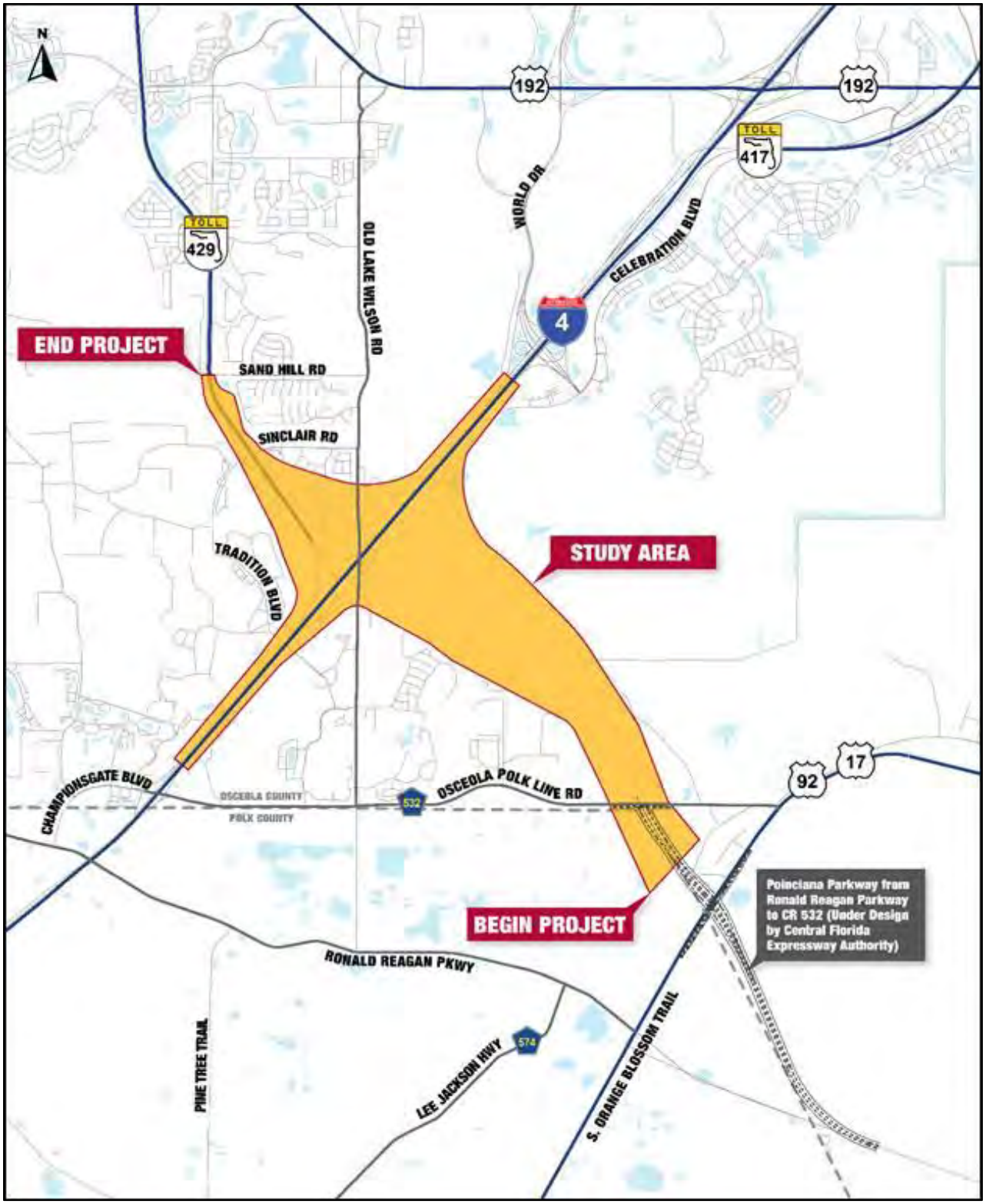

Figure 1-1 Project Location Map

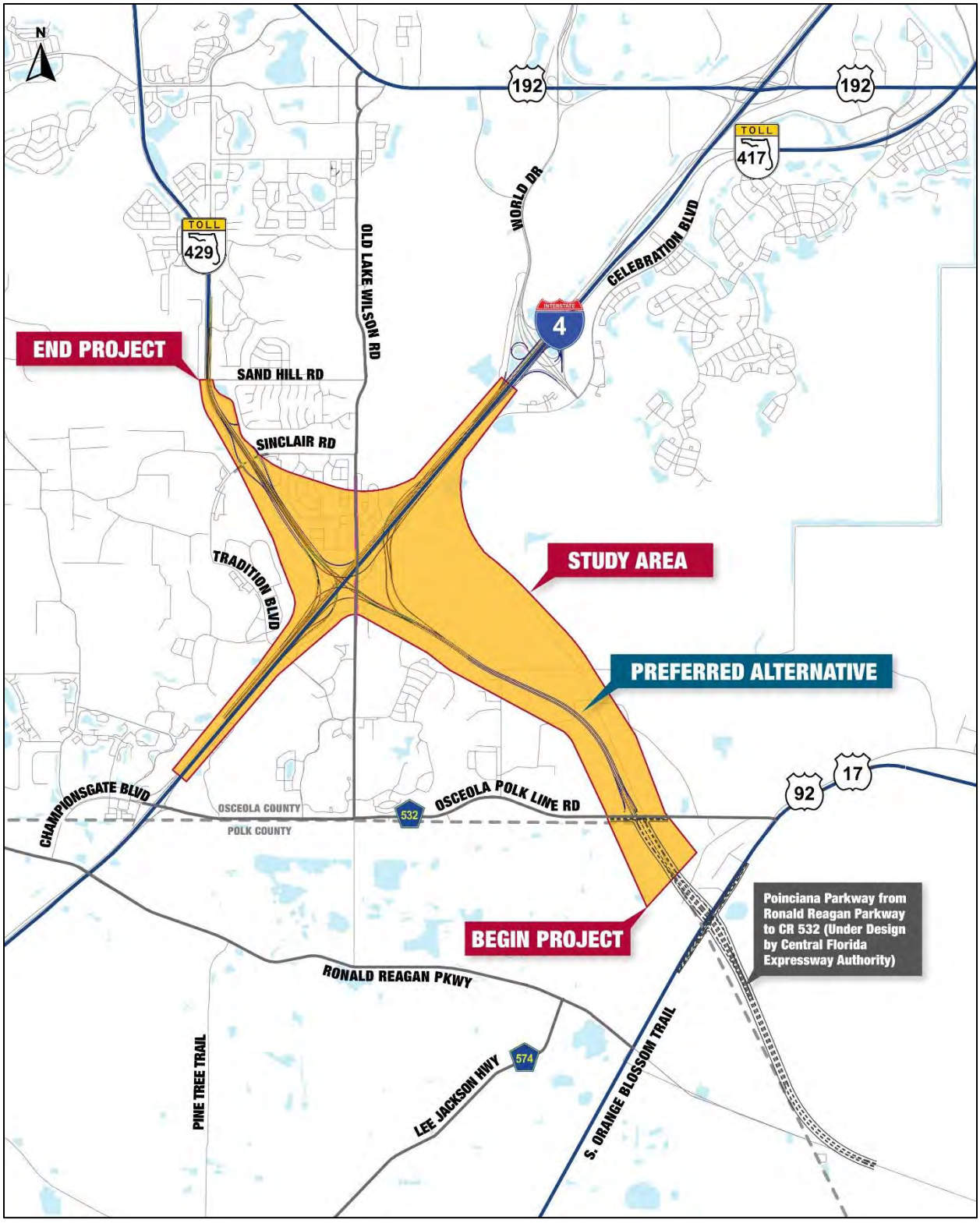

Figure 1-2 Preferred Alternative Map

2.0 PROJECT DESCRIPTION

The project involves extending the Poinciana Parkway (SR 538) from CR 532 to north of the I-4 / SR 429 interchange, modifying the I-4 / SR 429 interchange to accommodate the Poinciana Parkway connection and increasing capacity of the segment of SR 429 from the I-4 / SR 429 interchange to the SR 429 / Sinclair Road interchange. The total project length is approximately four (4) miles.

The Poinciana Parkway is a section of a future limited access toll facility, often referred to as the "Southern Beltway". The Southern Beltway would provide a regional, limited access facility that connects I-4 on the west to the interchange of Boggy Creek Road / SR 417 on the east, a distance of approximately 50 miles. The westernmost portion of the Southern Beltway is referred to as the Poinciana Parkway.

The project study area (**Figure 1-1**), which includes portions of Polk and Osceola Counties, is comprised of residential land uses, the 2,226-acre Reunion Resort and conservation lands. There are also numerous undeveloped parcels with residential and planned development future land use designations, wetland systems, and overhead and underground utility corridors. CR 532 follows the county line between Polk County on the south and Osceola County on the north.

2.1 *Purpose and Need*

The purpose of this project is to complete the missing link in the Poinciana Parkway between the planned terminus at County Road 532 (CR 532) to the Interstate 4 (I-4) / State Road 429 (SR 429) interchange. The project will also address future congestion on SR 429 from the I-4 / SR 429 interchange to the SR 429 / Sinclair Road interchange.

2.1.1 Systems Linkage

The Poinciana Parkway currently terminates at the intersection of US 17/92 and CR 54. As part of a separate effort, the Poinciana Parkway is being extended approximately 1.75 miles north to CR 532. Therefore, this project would complete the remaining 2.5-mile gap in the Poinciana Parkway between CR 532 and I-4/SR 429.

Previous travel demand forecasting efforts have estimated that approximately 50,000 to 60,000 vehicles per day are projected to use the Poinciana Parkway between Poinciana and the I-4/SR 429 interchange.

In the No-Build condition, to reach I-4 from Poinciana, motorists are required to exit the limited-access Poinciana Parkway and travel approximately 2.5 miles on CR 532, a local collector roadway. In addition, to access SR 429, motorists are required to travel an additional 1.5 miles on a congested portion of I-4. Therefore, motorists travel approximately four (4) miles total to reach SR 429. This adds a substantial number of trips to I-4, CR 532, and other local roadways, thereby increasing travel times and adding congestion on both I-4 and the local roadway network. Therefore, in the no-build condition, the gap in the Poinciana Parkway has the potential to result in increased travel times, lack of travel time reliability and congestion on the local roadway network and I-4. Finally, this approximately two-mile gap in the Poinciana Parkway creates a disjointed section in the overall 50-mile Southern Beltway, a limited access facility, intended to connect to the Western Beltway (SR 429), providing a regional beltway around Metro Orlando.

2.1.2 Transportation Demand

Based on travel demand forecasts presented in the FTE 2019 Traffic Trends Report, in the No-Build condition, without capacity improvements, the segment of SR 429 between I-4 and Sinclair Road will not meet level of service (LOS) standards (LOS C) by the year 2030. Further congestion would be anticipated between 2030 and 2045, the project's design year.

2.2 *Proposed Improvements*

2.2.1 No-Build Alternative

The No-Build Alternative assumes that the PPEC is not constructed. It assumes that both normal and evacuation traffic volumes continue to increase in the future without construction of the roadway. The No-Build Alternative minimizes right-of-way (ROW) and construction costs along with environmental impacts. It provides a benchmark for comparative purposes with the Build Alternatives. The No-Build Alternative remains a viable alternative throughout the study and the public involvement process.

2.2.2 Preferred Alternative

Eighteen (18) build alternatives were considered as part of this PD&E Study. The Preferred Alternative (Alternative 2) was selected based on the natural, physical, social, and ROW information. A detailed alternatives analysis is included in the Preliminary Engineering Report (PER).

The Preferred Alternative extends SR 538 (Poinciana Parkway) from south of CR 532 to north of Sand Hill Road. From CR 532 to I-4, the PPEC proposes a 6-lane typical section, expandable to eight (8) lanes (**Figure 2-1**). From I-4 to Sinclair Road the proposed typical section consists of four (4) lanes with southbound and northbound Collector-Distributor (CD) systems to provide the connections from I-4 to Sinclair Road. North of the Sinclair Road interchange the northbound and southbound CD systems merge with the SR 429 main lanes and connect with the proposed eight (8) lane expansion of SR 429 extending northward.

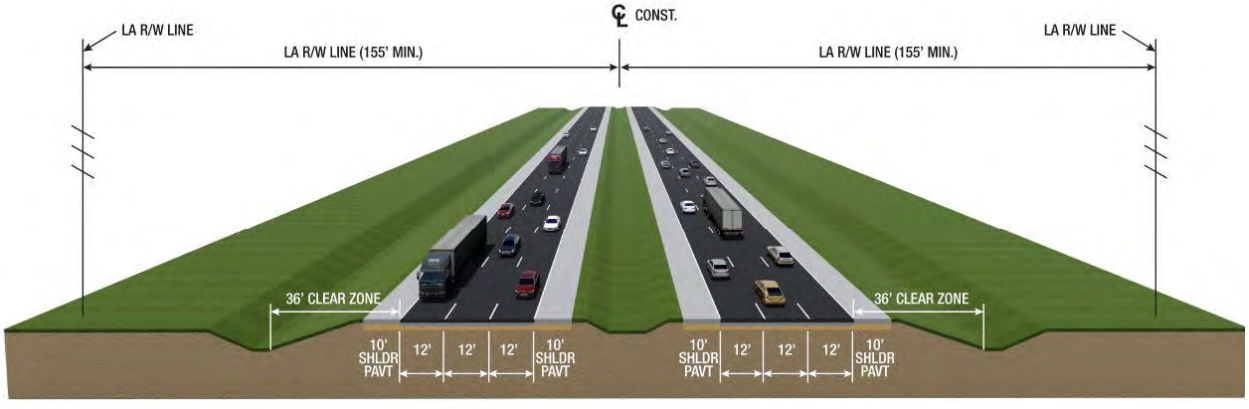

Figure 2-1 Proposed Typical Section for Preferred Alternative

Three (3) interchanges are included within the project limits including:

- PPEC and CR 532 – provides connections from CR 532 to northbound PPEC and from southbound SR 538 to CR 532;
- PPEC/SR 429 and I-4 – provides direct connections between PPEC, SR 429 and I-4 General Use lanes with some connections to the I-4 Express Lanes; and
- SR 429 and Sinclair Road – provides a full diamond interchange.

To minimize impacts to the Florida Gas Transmission (FGT) and the Gulfstream gas facility on the southeast quadrant of the PPEC and I-4 interchange, the proposed design places both directions of the PPEC on the west side of the gas facility and the interchange connecting ramps to and from the east on I-4 on the east side of the gas facility. East and west of the PPEC and I-4 interchange, the proposed PPEC improvements connect to the I-4 Beyond the Ultimate (BtU) proposed improvements.

3.0 EXISTING CONDITIONS

Pursuant to Presidential Executive Order 11990 entitled “Protection of Wetlands,” the United States Department of Transportation (USDOT) has developed the policy Preservation of the Nation’s Wetlands (USDOT Order 5660.1A), dated August 24, 1978, which requires all federally-funded highway projects to protect wetlands to the fullest extent possible. In accordance with this policy, the project study area was evaluated to assess potential wetland impacts that may be associated with the proposed improvements.

The project study area varies in width and extends to the west and east along I-4, north of I-4 along the SR 429 existing roadway, and south of I-4 down to CR 532 as shown in **Figure 1-1**. This section presents a description of existing conditions within the project study area, including soils and land use/vegetative cover types within both wetlands and uplands. **Section 4.0** presents a description of the potential impacts to federal and state- listed species and proposed conservation measures to off-set these impacts. **Section 5.0** presents a description of wetland and surface water impacts that would result from construction of the proposed project and a discussion of the mitigation options to offset these impacts.

3.1 *Methodology*

To assess the approximate locations and boundaries of existing wetland and upland communities within the project study area, the following site-specific data were collected and reviewed:

- Aerial photographs (scale, 1 inch = 400 feet), ESRI 2022;
- U.S. Department of Agriculture (USDA), Natural Resource Conservation Service (NRCS), *Soil Survey of Polk County, Florida* (NRCS 1990);
- U.S. Department of Agriculture (USDA), Natural Resource Conservation Service (NRCS), *Soil Survey of Osceola County Area, Florida* (NRCS 1979);
- Florida Association of Environmental Soil Scientists, *Hydric Soils of Florida Handbook*, 4th Edition (Hurt, 2007);
- Florida Department of Transportation, Florida Land Use, Cover and Forms Classification System (FLUCFCS) Handbook, 3rd Edition (FDOT, 1999);
- South Florida Water Management District (SFWMD) FLUCFCS GIS Database (2016);
- Southwest Florida Water Management District (SWFWMD) FLUCFCS GIS Database (2011);
- Reedy Creek Improvement District (RCID) Conservation Easements (2022);
- U.S. Fish and Wildlife Service (USFWS), National Wetlands Inventory, Wetlands Online Mapper (January 2022); and
- USFWS, Classification of Wetlands and Deepwater Habitats of the United States (Cowardin, et al., 1979).

For the purposes of this document, wetlands are defined as per 62.340 Florida Administrative Code (F.A.C.) and Section 373.019 (27), Florida Statutes (F.S.). Surface waters are defined as open water bodies or streams/waterways, including roadside ditches.

Environmental scientists familiar with Florida's natural communities conducted field reviews of the study area on September 27, October 25-28 and 30, 2021. Field reviews consisted of pedestrian transects throughout natural habitat types found within the project study area. The purpose of the reviews was to verify and/or refine preliminary habitat boundaries and classification codes established through in-office literature reviews and aerial photo interpretation. During field investigations, wetland and surface water habitats within the project study area was visually inspected and photographed. Attention was given to identifying plant species composition for each community. Exotic plant infestations and other disturbances such as soil subsidence, clearing, canals, power lines, etc., were noted. Attention was also given to identifying wildlife and signs of wildlife usage in each wetland and adjacent upland habitats within the project study area.

3.2 *Results*

Based on site-specific data searches and field evaluations, a total of 28 soil types, 19 upland habitat types, and nine (9) wetland and surface water habitat types were identified within the project study area. The following subsections describe the soils, upland and wetland community types, and individual wetlands and surface waters that occur within the project study area.

3.2.1 Soils

Based on the *Soil Survey of Osceola County Area County, Florida* (NRCS, 1979) and the *Soil Survey of Polk County*, *Florida* (NRCS, 1990), the project study area is comprised of 28 soil types. **Appendix A** provides an aerial map depicting the boundaries of each soil type within the project study area in addition to individual soil descriptions and their general characteristics. According to the *Hydric Soils of Florida Handbook* (Hurt, 2007), 20 of the soil types reported within the project study area are classified as hydric, eight (8) are non-hydric. Of the eight (8) non-hydric soils, three (3) are reported as having hydric soil inclusions. Mapped hydric soils comprise 1,156.2 acres (58.4 percent) and non-hydric soils cover 811.6 acres (40.9 percent) of the project study area.

Table 3-1 lists the soil types reported within the project study area, their corresponding NRCS reference numbers reported in the *Soil Survey of Osceola County Area* and *Soil Survey of Polk County*, their hydric classification, and the approximate acreage and percentage of each soil type within the project study area.

Table 3-1 Soil Types and Coverage within the Poinciana Parkway Extension Connector Project Study Area

Map Unit Symbol	Soil Type	Hydric Y/N	Acres in Study Area	Percent of Study Area
Osceola County				
1	Adamsville Sand	Y	5.7	0.3
5	Basinger Fine Sand	Y	21.4	1.1
6	Basinger Fine Sand, depressional	Y	0.2	0.0
7	Candler Sand, 0 To 5 percent slopes	N	380.2	19.2
8	Candler Sand, 5 To 12 percent slopes*	N	148.1	7.5
12	Floridana Fine Sand	Y	3.4	0.2
15	Hontoon Muck	Y	382.9	19.3
16	Immokalee Fine Sand	Y	342.4	17.3
22	Myakka Fine Sand*	N	20.3	1.0
27	Ona Fine Sand	Y	2.0	0.1
28	Paola Sand, 0 To 5 percent slopes	N	16.5	0.8
32	Placid Fine Sand	Y	76.0	3.8
34	Pomello Fine Sand, 0 To 5 percent slopes	N	97.7	4.9
36	Pompano Fine Sand	Y	26.3	1.3
37	Pompano Fine Sand, depressional	Y	70.1	3.5
38	Riviera Fine Sand	Y	55.3	2.8
39	Riviera Fine Sand, depressional	Y	1.3	0.1
40	Samsula Muck	Y	71.5	3.6
41	Satellite Sand*	N	125.6	6.3
42	Smyrna Fine Sand	Y	10.5	0.5
43	St. Lucie Fine Sand, 0 To 5 percent slopes	N	7.9	0.4
44	Tavares Fine Sand, 0 To 5 percent slopes	N	15.3	0.8
Polk County				
13	Samsula Muck	Y	3.1	0.2
17	Smyrna And Myakka Fine Sands	Y	2.3	0.1
19	Floridana Mucky Fine Sand, depressional	Y	1.3	0.1
21	Immokalee Sand	Y	35.3	1.8
25	Placid And Myakka Fine Sands, depressional	Y	20.4	1.0
77	Satellite Sand	Y	24.8	1.3
99	Water	NA	12.9	0.7
	Total Hydric Soils		**1,156.2**	**58.4**
	Total Non-Hydric Soils		**811.6**	**40.9**
	Total Water		**12.9**	**0.7**
	Totals for Project Study Area		**1,980.7**	**100.0**

* May have hydric soil inclusions

3.2.2 Existing Land Use

A total of 19 upland and nine (9) wetland and surface water habitat types were found within the project study area. Descriptions and aerial maps depicting existing land uses and habitats within the project study area are provided in **Appendix B**. **Table 3-2** provides land use and habitat types and their FLUCFCS classifications, in addition to their total acreage and percent coverage within the project study area.

Existing land use within the project study area was determined through the interpretation of 1" = 100' scale aerial photography, review of land cover GIS data obtained from the SFWMD and SWFWMD, and field reconnaissance of the project study area conducted on September 27, October 25-28 and 30, 2021.

Upland communities comprise 1,221.5 acres (61.7 percent) of the project study area and generally includes residential units, roads and highways, shrub and brushland, electric power facilities, and pastureland. Wetland and surface water communities comprise 759.2 acres (38.3 percent) of the project study area and is mostly comprised of hardwood and forested mixed wetlands.

Approximately, 410 acres of land is held under conservation easements within the project study area (**Appendix B**).

Table 3-2 Existing Land Uses within the Poinciana Parkway Extension Connector Project Study Area

FLUCFCS Classification[1]	FLUCFCS Description	USFWS Classification[2]	Acreage within Study Area	Percent of Study Area
112	Mobile Home Units (Less Than Two Dwelling Units Per Acre)	N/A	1.2	0.1
118	Rural Residential	N/A	50.1	2.5
121	Fixed Single Family Units (Two-Five Dwelling Units Per Acre)	N/A	1.1	0.1
131	Residential High Density - Fixed Single Family Units	N/A	197.4	10.0
132	Mobile Home Units (Six Or More Dwelling Units Per Acre)	N/A	12.0	0.6
134	Multiple Dwelling Units - High Rise	N/A	43.2	2.2
139	Residential High Density - Under Construction	N/A	82.9	4.2
149	Commercial And Services Under Construction	N/A	19.2	1.0
182	Golf Courses	N/A	34.5	1.7
211	Improved Pastures	N/A	54.0	2.7
212	Unimproved Pastures	N/A	14.0	0.7
213	Woodland Pastures	N/A	67.3	3.4
320	Shrub and Brushland	N/A	139.1	7.0
410	Upland Coniferous Forest	N/A	38.6	1.9

FLUCFCS Classification[1]	FLUCFCS Description	USFWS Classification[2]	Acreage within Study Area	Percent of Study Area
434	Hardwood - Coniferous Mixed	N/A	49.8	2.5
441	Coniferous Plantations	N/A	3.3	0.2
814	Roads And Highways	N/A	297.2	15.0
830	Utilities	N/A	10.0	0.5
831	Electric Power Facilities	N/A	106.6	5.4
		Total Uplands	**1,221.5**	**61.7**
530	Reservoirs	PUBHx	42.2	2.1
617	Mixed Wetland Hardwoods	PFO1C	447.5	22.6
6172	Mixed Wetland Shrubs	PSS1C	13.8	0.7
621	Cypress	PFO2F	87.6	4.4
625	Hydric Pine Flatwoods	PFO4C	48.7	2.5
630	Wetland Forested Mixed	PFO1/3	102.8	5.2
640	Vegetated Non-Forested Wetlands	PEM1C	11.6	0.6
641	Freshwater Marshes	PEM1F	1.6	0.1
644	Emergent Aquatic Vegetation	PEM1Fx	3.4	0.2
		Total Wetlands and Surface Waters	**759.2**	**38.3**
		Total	**1,980.7**	**100.0**

[1]FDOT 1999

[2]Cowardin *et al.*, 1979

PUBHx: Palustrine, Unconsolidated Bottom, Permanently Flooded, excavated

PSS1C; Palustrine, Scrub-Shrub, Broad-leaved Deciduous, Seasonally Flooded

PFO1C: Palustrine, Forested, Broad-leaved Deciduous, Seasonally Flooded

PFO2F: Palustrine, Forested, Needle-leaved Deciduous, Semi-permanently Flooded

PFO4C: Palustrine, Forested, Needle-leaved Evergreen, Seasonally Flooded

PFO1/3: Palustrine, Forested, Broad-leaved Deciduous, Broad-leaved Evergreen

PEM1C: Palustrine, Emergent, Persistent, Seasonally Flooded

PEM1F: Palustrine, Emergent, Persistent, Semi-permanently Flooded

PEM1Fx: Palustrine, Emergent, Persistent, Semi-permanently Flooded, excavated

3.2.3 Wetlands and Surface Waters

During field reviews of the project study area, environmental scientists delineated the approximate boundaries of existing wetland and surface water communities on 1" = 200' true-color aerial photographs. Approximate wetland boundaries were identified in accordance with the *State of Florida Wetlands Delineation Manual* [Chapter 62-340, Florida Administrative Code (F.A.C.)] and the criteria found within the U.S. Army Corps of Engineers (USACE) 1987 *Corps of Engineers Wetland Delineation Manual* (Y-87-1) and 2010 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coast Plain Region (Version 2.0)* (ERDC/EL TR-10-20). Each wetland and surface water habitat within the project study area was classified using

FLUCFCS (FDOT, 1999) and the USFWS Classification of Wetlands and Deepwater Habitats of the United States (Cowardin *et al*., 1979).

Formal wetland boundary delineations and surveys were not conducted as a part of this study but will be completed as part of the state and federal permit process.

Based on collected field data and in-house reviews, a total of nine (9) wetland and surface water habitat types were identified within the project study area. These included eight (8) wetland types and one (1) surface water type. The wetland types were classified as mixed wetland hardwoods, mixed wetland shrubs, cypress, hydric pine flatwoods, wetland forested mixed, vegetated non-forested wetlands, freshwater marshes, and emergent aquatic vegetation. The surface water included reservoirs.

Appendix C provides individual descriptions of the identified wetlands and surface water, including acreage within the project study area, and aerial maps of the location of these systems within the project study area. There are no wetlands or surface waters designated as Outstanding Florida Waters, Aquatic Preserves or Wild and Scenic Rivers within the project study area.

4.0 PROTECTED SPECIES

This project was evaluated for impacts to wildlife and habitat resources, including protected species, in accordance with 50 CFR Part 402 of the Endangered Species Act (ESA) of 1973, as amended, the Florida Endangered and Threatened Species Act, Section 379.2291, F.S.), and the PD&E Manual. Listed species are afforded special protective status by federal and state agencies. This special protection is federally administered by the United States Department of the Interior, USFWS, and National Oceanic and Atmospheric Administration – National Marine Fisheries Service (NOAA-NMFS) pursuant to the Endangered Species Act of 1973 (as amended). The USFWS administers the federal list of animal species (50 CFR 17) and plant species (50 CFR 23). Federal protection of marine species is the responsibility of the NOAA-NMFS.

Administered by the FWC, the State of Florida affords special protection to animal species designated as State-designated Threatened pursuant to Chapter 68A-27, F.A.C. The State of Florida also protects and regulates plant species designated as endangered, threatened or commercially exploited as identified on the Regulated Plant Index (5B-40.0055, F.A.C.), which is administered by the Florida Department of Agriculture and Consumer Services (FDACS), Division of Plant Industry, pursuant to Chapter 5B-40, F.A.C. Protected species evaluations were completed in accordance with FHWA's 2002 Memorandum, titled "Management of the Endangered Species Act Environmental Analysis and Consultation Process". Species that are federally listed species are also considered state listed species.

An ETDM Programming Screen Summary Report was published on January 21, 2022 containing comments from the Environmental Technical Advisory Team (ETAT) on the project's effects on various natural, physical and social resources. The USFWS, FDACS, FWC, and SWFWMD were commenting agencies for Wildlife and Habitat. Wildlife and Habitat were assigned a degree of effect of 2 – Minimal by FDACS and SWFWMD and 4 – Substantial by FWC and USFWS. The project is located within the USFWS Consultation Areas (CAs) of multiple federally protected species, including the sand and blue-tail mole skink (*Plestiodon reynoldsi; Plestiodon egregius lividus*), Florida grasshopper sparrow (*Ammodramus savannarum floridanus*), Florida scrub-jay (*Aphelocoma coerulescens*), crested caracara (*Caracara cheriway*), Everglade snail kite (*Rostrhamus sociabilis plumbeus*), red-cockaded woodpecker (*Picoides borealis*) and within the core foraging area of three (3) wood stork (*Mycteria americana*) colonies.

The following sections describe the methodology used to assess the potential for occurrence of protected species and to identify the effects that implementation of the proposed project alternatives may have on protected species.

4.1 Data Collection

Available site-specific data was collected and evaluated to determine federal and state-listed protected plant and animal species that have potential to occur within the project study area and to identify the approximate locations of existing upland and wetland communities.

Literature reviewed, and databases searched as part of this evaluation included:

- USFWS, Endangered and Threatened Wildlife and Plants, 50 CFR 17.11 and 17.12, June 2021;
- FWC, Florida's Endangered Species and Threatened Species, June 2021;

- Audubon Florida EagleWatch Public Nest website https://www.arcgis.com/apps/webappviewer/index.html?id=9ade9794b8494d2b84c8dea339ea1428), 2022*;*
- FWC, Wading Bird Rookeries website *(*http://ocean.floridamarine.org/TRGIS/Description_Layers_Terrestrial.htm*),* 1999;
- FNAI Biodiversity Matrix Map Server, May 2022, *(*https://www.fnai.org/BiodiversityMatrix/index.html*);*
- USFWS, 2010-2019 Wood Stork Nesting Colonies Maps (http://fgdl.org), May 2022;
- USFWS, Information for Planning and Consultation (IPaC) Mapper, May 2022;
- FDOT, Wildlife Permeability Along Interstate 4 Report, June 2020;
- USFWS, 2020 Peninsular Florida Species Conservation and Consultation Guide, Sand Skink and Blue-tailed (Bluetail) Mole Skink; and
- USFWS*,* Critical Habitat Portal website *(*http://criticalhabitat.fws.gov/crithab/*).*

Environmental scientists familiar with Florida natural communities conducted field reviews of the project study area and adjacent habitats and general species surveys on September 27, October 25-28 and 30, 2021. Field reviews consisted of reviewing natural habitat types located within the project study area. The purpose of the reviews was to verify and/or refine preliminary habitat boundaries and classification codes established through in-office literature reviews and aerial photo interpretation. During field investigations, upland and wetland communities within the project study area were visually inspected. Attention was given to identifying dominant plant species composition for each community. Additional attention was given to identifying wildlife and signs of wildlife usage in each wetland and upland community within the project study area. The FNAI biodiversity matrix for documented occurrences of listed species within one (1) mile of the project study area was reviewed (**Appendix E**).

Based on the evaluation of collected data, field reviews, the FNAI biodiversity matrix review, and database searches, the federal and state-listed protected species discussed in **Section 4.2** were considered as having the potential to occur within or adjacent to the project study area. For a species to be considered potentially present the project study area must be within the species' distribution range. An effect determination was then made for each federal and state-listed species based on an analysis of the potential impacts of the Preferred Alternative to each species.

4.2 Results

Based on the information collected and field reviews, a list of protected species with the potential to occur within the project study area was generated. This list includes a total of 57 federal or state-listed species that have the potential for occurrence within the project study area. These protected species include 38 floral, six (6) reptilian, and 13 avian species. **Appendix F** presents a list of protected species with the potential to occur within the project study area, their federal or state protection status, suitable habitat, and a ranking of potential occurrence. Locations of all

listed species documented within one (1) mile of the project study area as well as the locations of all protected species observed during field reviews are also provided in **Appendix F**.

The potential for occurrence for each species was designated as None, Low, Moderate, or High based on the type of habitat present within the project study area, its relative condition, and if the species has been previously documented or was observed within the project study area. A *None* rating indicates that no habitat for that species was found within the project study area. A *Low* rating indicates that minimal/suboptimal habitat for that species was found within the project study area, but the species has not been documented within the project study area. A *Moderate* rating indicates that suitable habitat exists, and the species has been documented within one (1) mile of the project study area. A *High* rating indicates that suitable habitat exists, and the species was observed during field reviews.

While the proposed project has taken all practicable measures to avoid and minimize impacts to potentially occurring protected species and their habitats, unavoidable impacts may occur because of roadway and pond site construction. A determination of the anticipated project "effect" on protected species was made based on their probability of occurrence within the project study area, the proposed changes to their habitat quality, quantity and availability as a result of project construction, and how each species is expected to respond to anticipated habitat changes. Listed below are the "effect" determinations for each species.

4.2.1 Federal Protected Species

4.2.1.1 Flora

Avon Park Rabbit-bells (*Crotalaria avonensis*)

Avon Park Rabbit-bells is a bushy, perennial herb with hairy stems and leaves, and a yellow flower that is listed as ***endangered*** by the **USFWS.** This species is a member of the pea (*Fabaccaea*) family and occurs on bare patches of white sand in Lake Wales Ridge scrub and occasionally in disturbed areas or partial shade. Suitable habitat for this species was not observed within the project study area. According to FNAI data, Avon Park rabbit-bells has the potential to occur within the project study area; however, it has not been documented within one (1) mile of the project study area. Additionally, this species was not observed during the field reviews of the project study area. Based on this information and the lack of suitable habitat within the study area, it has been determined that the project will have "**no effect**" on the Avon Park rabbit-bells.

Britton's Beargrass (*Nolina brittoniana*)

Britton's beargrass is a perennial herb with long, stiff leaves and clusters of small white flowers that is listed as ***endangered*** by the **USFWS**. This species is a member of the agave (*Agavaceae*) family and occurs on scrub, sandhill, scrubby flatwoods, and xeric hammock. Suitable habitat for this species was observed within the study area. According to FNAI data, Britton's beargrass has been documented historically within one (1) mile of the project study area. During site reviews this species was not observed within the project study area. Based on this information, it has been determined that the project will have a "**may affect, not likely to adversely affect**" on Britton's beargrass.

Carter's Warea (*Warea carteri*)

Carter's warea is an annual herb with many slender, branching stems and white flower clusters that is listed as ***endangered*** by the **USFWS**. This species is a member of the mustard (*Brassicaceae*) family and occurs on sandhill, scrubby flatwoods, and inland scrub habitat. Suitable habitat for this species was observed within the project study area. According to FNAI data, Carter's warea has the potential to occur within the project study area; however, it has not been documented within one (1) mile of the project study area. During site reviews this species was not observed within the project study area. Based on this information, it has been determined that the project will have a "**may affect, not likely to adversely affect**" on Carter's warea.

Clasping Warea (*Warea amplexifolia*)

Clasping warea is an annual herb with pale green, heart-shaped leaves and clusters of pink/purple flowers that is listed as ***endangered*** by the **USFWS**. This species is a member of the mustard (*Brassicaceae*) family and occurs on sunny openings with exposed sand in longleaf pine/turkey oak/wiregrass sandhills. Suitable habitat for this species was not observed within the project study area. According to FNAI data, clasping warea has the potential to occur within the project study area; however, it has not been documented within one (1) mile of the project study area. Additionally, this species was not observed during the field reviews of the project study area. Based on this information and the lack of suitable habitat within the project study area, it has been determined that the project will have "**no effect**" on the clasping warea.

Florida Blazing Star (*Liatris ohlingerae*)

Florida blazing star is a perennial herb with hairy stems, narrow leaves, and many purple flower clusters that is listed as ***endangered*** by the **USFWS**. This species is a member of the composite (*Asteraceae*) family and occurs on rosemary balds, scrubby flatwoods, and disturbed scrub. Suitable habitat for this species was observed within the project study area. According to FNAI data, the Florida blazing star has the potential to occur within the project study area; however, it has not been documented within one (1) mile of the project study area. During site reviews this species was not observed within the project study area. Based on this information, it has been determined that the project will have a "**may affect, not likely to adversely affect**" on the Florida blazing star.

Florida Bonamia (*Bonamia grandiflora*)

The Florida bonamia is a morning glory vine with large, blue flowers that is listed as ***threatened*** by the **USFWS**. This species is a member of the morning-glory (*Convolvulaceae*) family and occurs on open or disturbed areas in white sand scrub on central Florida ridges that include scrub oaks, sand pine, and lichens. Suitable habitat for this species was not observed within the project study area. According to FNAI data, Florida bonamia has been documented historically within one (1) mile of the project study area. However, this species was not observed during the field reviews of the project study area. Based on this information and the lack of suitable habitat within the project study area, it has been determined that the project will have "**no effect**" on the Florida bonamia.

Florida Jointweed (*Polygonella basiramia*)

The Florida jointweed is a perennial herb with slender, wiry, red or green stems, tiny red or green leaves and very small white/pinkish flowers that is listed as ***endangered*** by the **USFWS**. This species is a member of the buckwheat (*Polygonaceae*) family and occurs on white sands of

sand pine scrub. Suitable habitat for this species was not observed within the project study area. According to FNAI data, the Florida jointweed has the potential to occur within Osceola and Polk Counties; however, it has not been documented within one (1) mile of the project study area. Additionally, this species was not observed during the field reviews of the project study area. Based on this information and the lack of suitable habitat within the project study area, it has been determined that the project will have "**no effect**" on the Florida jointweed.

Garrett's Scrub Balm (*Dicerandra christmanii*)

Garrett's scrub balm is a low shrub with square stems, 1-inch long leaves, and flowers that are white or cream colored with purple spots. It is listed as ***endangered*** by the **USFWS**. This species is a member of the mint (*Lamiacceae*) family and occurs on openings in oak scrub on Lake Wales Ridge. Suitable habitat for this species was not observed within the project study area. According to FNAI data, the Garrett's scrub balm has the potential to occur within the project study area; however, it has not been documented within one (1) mile of the project study area. Additionally, this species was not observed during the field reviews or species surveys of the project study area. Based on this information and the lack of suitable habitat within the project study area, it has been determined that the project will have "**no effect**" on the Garrett's scrub balm.

Highlands Scrub Hypericum (*Hypericum cumulicola*)

Highlands scrub hypericum a perennial herb with wiry, round stems and yellow flowers that is listed as ***endangered*** by the **USFWS**. This species is a member of the St. John's wort (*Guttiferae*) family and occurs on open patches in white sand scrub, rosemary balds, scrubby flatwoods, and oak scrubs. Suitable habitat for this species was observed within the project study area. According to FNAI data, the highlands scrub hypericum has the potential to occur within the project study area; however, it has not been documented within one (1) mile of the project study area. During site reviews this species was not observed within the project study area. Based on this information, it has been determined that the project will have a "**may affect, not likely to adversely affect**" on the highlands scrub hypericum.

Lewton's Polygala (*Polygala lewtonii*)

Lewton's polygala is a short-lived perennial herb with bright pink flowers that is listed as ***endangered*** by the **USFWS**. This species is a member of the milkwort (*Polygalaceae*) family and occurs on oak scrub, sandhill, and transition zones between high pine and turkey oak barrens. Suitable habitat for this species was observed within the project study area. According to FNAI data, the Lewton's polygala is likely to occur within the project study area; however, it has not been documented within one (1) mile of the project study area. During site reviews this species was not observed within the project study area. Based on this information, it has been determined that the project will have a "**may affect, not likely to adversely affect**" on the Lewton's polygala.

Papery Nailwort (*Paronychia chartacea* ssp. *chartacea*)

The papery nailwort is an annual herb with spreading wiry stems and small white flowers that is listed as ***threatened*** by the **USFWS**. This species is a member of the pink (*Caryophyllaceae*) family and occurs in white sand clearing of scrub. Suitable habitat for this species was observed within the study area. According to FNAI data, the papery nailwort has the potential to occur within the project study area; however, it has not been documented within one

(1) mile of the project study area. During site reviews this species was not observed within the project study area. Based on this information, it has been determined that the project will have a "**may affect, not likely to adversely affect**" on the papery nailwort.

Perforate Reindeer Lichen (*Cladonia perforate*)

Perforate reindeer lichen is a yellowish-gray terrestrial lichen with densely forking branches that is listed as ***endangered*** by the **USFWS**. This species is a member of the reindeer lichen (*Cladoniaceae*) family and occurs in rosemary scrub on the Panhandle coasts, Lake Wales Ridge, and Atlantic Coast Ridge. Suitable habitat for this species was not observed within the project study area. According to FNAI data, perforate reindeer lichen has the potential to occur within the project study area; however, it has not been documented within one (1) mile of the project study area. Additionally, this species was not observed during the field reviews of the project study area. Based on this information and the lack of suitable habitat within the project study area, it has been determined that the project will have "**no effect**" on the perforate reindeer lichen.

Pygmy Fringe Tree (*Chionanthus pygmaeus*)

The pygmy fringe tree is a shrub/small tree with white and green flowers that is listed as ***endangered*** by the **USFWS**. This species is a member of the olive (*Oleaceae*) family and occurs on scrub, sandhill, and xeric hammocks, primarily on the Lake Wales Ridge. Suitable habitat for this species was not observed within the project study area. According to FNAI data, the pygmy fringe tree has been historically documented within one (1) mile of the project study area. However, this species was not observed during the field reviews of the project study area. Based on this information and the lack of suitable habitat within the project study area, it has been determined that the project will have "**no effect**" on the pygmy fringe tree.

Scrub Buckwheat (*Eriogonum longifolium* var. *gnaphalifolium*)

Scrub buckwheat is a short perennial herb that is listed as ***threatened*** by the **USFWS**. This species is a member of the buckwheat (*Polygonaceae*) family and occurs on sandhill, oak hickory scrub, high pinelands, and turkey oak barrens with wiregrass, blue jack, and turkey oak. Suitable habitat for this species was not observed within the project study area. According to FNAI data, scrub buckwheat has been documented within one (1) mile of the project study area. However, this species was not observed during the field reviews of the project study area. Based on this information and the lack of suitable habitat within the project study area, it has been determined that the project will have "**no effect**" on the scrub buckwheat.

Scrub Lupine (*Lupinus aridorum*)

Scrub lupine is a shrubby biennial or perennial with soft, silvery stems and leaves and pink flowers that is listed as ***endangered*** by the **USFWS**. This species is a member of the pea (*Fabeceae*) family and occurs on openings in sand pine and rosemary scrub. Suitable habitat for this species was not observed within the project study area. According to FNAI data, scrub lupine has the potential to occur within the project study area; however, it has not been documented within one (1) mile of the project study area. Additionally, this species was not observed during the field reviews of the project study area. Based on this information and the lack of suitable habitat within the project study area, it has been determined that the project will have "**no effect**" on the scrub lupine.

Scrub Mint (*Dicerandra frutescens*)

Scrub mint is a low shrub with oval leaves and purple flowers that is listed as ***endangered*** by the **USFWS**. This species is a member of the mint (*Lamiaceae*) family and occurs in sand pine scrub and sandhill on the Lake Wales Ridge. Suitable habitat for this species was not observed within the project study area. According to FNAI data, scrub mint has the potential to occur within the project study area; however, it has not been documented within one (1) mile of the project study area. Additionally, this species was not observed during the field reviews of the project study area. Based on this information and the lack of suitable habitat within the project study area, it has been determined that the project will have "**no effect**" on the scrub mint.

Scrub Pigeon-Wing (*Clitoria fragrans*)

The scrub pigeon-wing is a perennial herb with showy white to pink/purplish flowers that is listed as ***threatened*** by the **USFWS**. This species is a member of the pea (*Fabaceae*) family and occurs on turkey oak barrens with wire grass or scrub/scrubby high pine. Suitable habitat for this species was not observed within the project study area. According to FNAI data, the scrub pigeon-wing has the potential to occur within the study area; however, it has not been documented within one (1) mile of the project study area. Additionally, this species was not observed during the field reviews of the project study area. Based on this information and the lack of suitable habitat within the project study area, it has been determined that the project will have "**no effect**" on the scrub pigeon-wing.

Scrub Plum (*Prunus geniculate*)

The scrub plum is a shrub that is six (6) feet tall with dense spiny branches and white flowers that is listed as ***endangered*** by the **USFWS**. This species is a member of the rose (*Rosaceae*) family and occurs in sandhill and oak scrub. Suitable habitat for this species was observed within the project study area. According to FNAI data, the scrub plum has the potential to occur within the project study area; however, it has not been documented within one (1) mile of the project study area. During site reviews this species was not observed within the project study area. Based on this information, it has been determined that the project will have a "**may affect, not likely to adversely affect**" on the scrub plum.

Short-Leaved Rosemary (*Conradina canescens = C. brevifolia*)

The short-leaved rosemary is a short-lived, erect, woody, perennial shrub that is listed as ***endangered*** by the **USFWS**. This species is a member of the mint (*Lamiaceae*) family and occurs on white sands of sand pine-oak scrub of the Lake Wales Ridge and the scattered overstory of sand and scrub oak. Suitable habitat for this species was not observed within the project study area. According to FNAI data, short-leaved rosemary has the potential to occur within Osceola and Polk counties; however, it has not been documented within one (1) mile of the project study area. Additionally, this species was not observed during the field reviews of the project study area. Based on this information and the lack of suitable habitat within the project study area, it has been determined that the project will have "**no effect**" on the short-leaved rosemary.

Small's Jointweed (Polygonella myriophylla)

The Small's jointweed is a low, sprawling shrub with reddish-brown, cracked bark and clusters of white flowers that is listed as ***endangered*** by the **USFWS**. This species is a member of the buckwheat (*Polygonaceae*) family and occurs in open, sandy areas within scrub. Suitable habitat

for this species was observed within the project study area. According to FNAI data, Small's jointweed has been documented within one (1) mile of the project study area. During site reviews this species was not observed within the project study area. Based on this information, it has been determined that the project will have a "**may affect, not likely to adversely affect**" on the Small's jointweed.

4.2.1.2 Fauna

Reptilian

American Alligator (*Alligator mississippiensis*)

The American alligator is a large aquatic reptile with a broad, rounded snout. This species is listed as ***threatened*** by the **USFWS** due to their similarity of appearance to the American crocodile. This species' range stretches from east Texas, across to North Carolina, and extends down into southern Florida. They prefer freshwater lakes, slow-moving rivers, and associated wetlands, but they are occasionally found in brackish water. According to FNAI data, this species was not listed as potentially occurring within one (1) mile of the project study area. No American alligators were observed during field reviews; however, large wetland systems were observed during fieldwork that provide suitable habitat and it is reasonable to expect that this species could utilize suitable habitat within the project study area. Based on this information, it has been determined that the project "**may affect, but is not likely to adversely affect**" on the American alligator.

Blue-tailed Mole Skink (*Plestiodon egregius lividus*) and Sand Skink (*Plestiodon reynoldsi*)

The blue-tailed mole skink and sand skink are small lizard-like reptiles that are listed as ***threatened*** by the **USFWS**. Blue-tailed mole skinks are expected to occur with sand skinks where the two species overlap in distribution. These species are found in central Florida in habitat with loose sandy areas, such as rosemary scrub, sand pine scrub, oak scrub, scrubby flatwoods, and turkey oak barrens. They are also known to utilize disturbed habitats with suitable soils, such as pine plantations, citrus groves, open fields, and pastures. According to the USFWS Sand Skink Survey Protocol (2020), skink distribution is defined by three (3) factors: location within a county designated by the USFWS with primary populations, at an elevation of 82 feet above sea level or higher and is comprised of any of the 28 soil types designated as sand skink soils by the USFWS. The project study area lies within the USFWS Sand Skink and Blue Skink (CA) and includes suitable skink soils at a suitable elevation. According to FNAI data, sand skinks have been historically documented within one (1) mile of the project study area. Additionally, tracks were observed during pedestrian transects within scrub habitat. As a result of available suitable habitat and track observation, a sand skink survey will be conducted during the design phase of this project to determine the extent of occupied habitat. Mitigation for unavoidable impacts to occupied sand skink habitat can be completed through the purchase of credits at an acceptable conservation mitigation bank. Based on this information, it has been determined that the project "**may affect, is likely to adversely affect**" the blue-tailed mole skink and sand skink.

Eastern indigo snake (*Drymarchon couperi*)

The eastern indigo snake is a large, glossy black snake that is listed as ***threatened*** by the **USFWS**. This species can be found in a variety of habitat types, including pine flatwoods, scrubby flatwoods, high pine, dry prairie, tropical hardwood hammocks, edges of freshwater marshes, agricultural fields, coastal dunes, as well as human-altered habitats. It may also utilize gopher

tortoise burrows for shelter to escape hot or cold ambient temperatures within its range. According to FNAI data, this species has the potential to occur within the project study area. While there is suitable habitat for this species throughout the undeveloped areas of the project study area, the eastern indigo snake was not observed during field reviews and has not been documented within one (1) mile of the project study area. However, it is reasonable to expect that this species could utilize suitable habitat within the project study area. To minimize potential adverse impacts to the eastern indigo snake, Florida's Turnpike Enterprise will implement the USFWS *Standard Protection Measures for the Eastern Indigo Snake* (updated August 2013) during construction (see **Appendix G**). Additionally, the FTE will survey the project limits prior to construction to determine the presence and location of gopher tortoise burrows. If gopher tortoises or burrows are found within 25 feet of the limits of construction, the FTE will reinitiate technical assistance with the FWC to secure all permits needed to relocate the tortoises and associated commensal species. With the implementation of these measures, it has been determined that the project "**may affect, not likely to adversely affect**" the eastern indigo snake. The path to this determination followed the Eastern Indigo Snake Programmatic Effect Determination Key (South Florida Ecological Service Office), steps A →B→C→D→MANLAA as shown in **Appendix G.**

Avian

Florida Grasshopper Sparrow (*Ammodramus savannarum floridanus*)

The Florida grasshopper sparrow is a small, short-tailed, flat-headed sparrow that is listed as ***endangered*** by the **USFWS**. This species requires large areas of frequently burned dry prairie habitat with patchy open areas sufficient for foraging. It may persist in pasture lands that have not been intensively managed. While the project study area lies within the USFWS Florida Grasshopper Sparrow CA, no potential habitat for this species was observed within the project study area and no individuals were observed during the field reviews. According to FNAI data, the Florida grasshopper sparrow has not been documented within one (1) mile of the project study area. Based on this information, it has been determined that the project will have "**no effect**" the Florida grasshopper sparrow.

Florida Scrub-Jay (*Aphelocoma coerulescens*)

The Florida scrub-jay is similar to the common blue jay in size and shape, with a pale blue crestless head, nape, wings, and tail. It is listed as ***threatened*** by the **USFWS.** Optimal scrub-jay habitat consists of low growing, scattered scrub species with patches of bare sandy soil such as those found in sand pine scrub and scrubby flatwoods habitats that are occasionally burned. In areas where these types of habitats are unavailable, Florida scrub-jays may be found in less optimal habitats such as pine flatwoods with scattered oaks. The project study area lies within the USFWS Florida Scrub-jay CA and potential habitat for this species was observed. According to FNAI data, the Florida scrub-jay has been historically documented within one (1) mile of the project study area. A technical guidance meeting with the USFWS was held on October 21, 2021 for approval of the survey plan for the Florida scrub-jay. A Florida scrub-jay survey was conducted in October 2021 per the Scrub-Jay Survey Guidelines (USFWS 2007). In accordance with this survey, stations within appropriate habitat were surveyed, and no Florida scrub-jays were recorded within the project study area (**Appendix H**). Based on this information, it has been determined that the project "**may affect, not likely to adversely affect**" the Florida scrub-jay.

Crested Caracara (*Caracara cheriway*)

The crested caracara is a large, boldly patterned raptor with a crest that is listed as ***threatened*** by the **USFWS**. This species often inhabits open country, such as dry prairie and pasture lands with scattered cabbage palms, cabbage palm/live oak hammocks, and shallow ponds and sloughs. It also requires cabbage palms or live oaks with low-growing surrounding vegetation for nesting. While the study area lies within the USFWS Crested Caracara CA, no potential habitat for this species was observed within the project study area and the species was not observed during the field reviews. According to FNAI data, the crested caracara has not been documented within one (1) mile of the study area. Based on these results, it has been determined that the project will have "**no effect**" the crested caracara.

Wood Stork (*Mycteria americana*)

The wood stork is a large, white, wading bird that is listed as ***threatened*** by the **USFWS**. The wood stork is opportunistic and utilizes various habitat types including freshwater marshes, swamps, lagoons, ponds, tidal creeks, flooded pastures, and ditches. Water that is relatively calm, uncluttered by dense aquatic vegetation, and with a permanent or seasonal water depth between 2 and 15 inches is considered suitable foraging habitat for this species. Suitable foraging habitat for this species was observed within the project study area; however, no individuals were observed foraging in the wetland or surface water areas. According to FNAI data, the wood stork has not been documented within one (1) mile of the project study area.

According to the USFWS wood stork colony website, the project study area is located within the core foraging areas of two (2) active wood stork colonies. It is within the 18.6-mile core foraging area buffer of the Lake Russell wood stork colony and within the 15.0-mile core foraging area buffer of the Gatorland colony. All nesting colonies are greater than one (1) mile from the project study area (**Figure 4-1 Wood Stork Core Foraging Area Map**). The primary concern for this species is loss of suitable foraging habitat within the CFA of a wood stork colony. Since anticipated impacts are more than 0.5 acres, a wood stork suitable foraging analysis was completed (**Appendix I**). There are 133.27 acres of wetlands that could be utilized by the wood stork for foraging in the Preferred Alternative. Wood stork foraging biomass productivity is calculated based on hydroperiods of class of affected wetlands. The Preferred Alternative will impact 2.76 acres of short hydroperiod wetlands and 130.51 acres of long hydroperiod wetlands and result in the net loss of 581.56 kg total (fish and crayfish) biomass.

As part of this project, impacts to wetlands within the project study area will be mitigated for within the CFA of one (1) or more of the affected rookeries or at a regional mitigation bank that has been approved by the USFWS or pursuant to Section 373.4137, F.S. Therefore, it has been determined that the proposed project "**may affect, not likely to adversely affect**" the wood stork. The path to this determination followed the USFWS Effect Determination Key for the Wood Stork in South Florida, steps A→B→C→E→MANLAA as shown in **Appendix G**.

Everglade Snail Kite (*Rostrhamus sociabilis plumbeus*)

The Everglade snail kite is listed as ***endangered*** by the **USFWS** due to degradation of its restricted range of foraging habitat and its highly specific diet, which is made up almost exclusively of apple snails (*Pomacea paludosa*). Snail kites typically prefer large, open, freshwater marshes and shallow lakes (< 4 ft. deep) with a low density of emergent vegetation and typically nest in low trees or shrubs over water (commonly willow, wax myrtle, pond apple, or buttonbush, but also in non-woody vegetation like cattail or sawgrass). They are protected under

the Endangered Species Conservation Act, U.S. Migratory Bird Treaty Act and state wildlife laws. The nesting season for this species occurs between December 1 and July 31 and, if a nest is located on a property, it requires two (2) buffer zones around each nest established: a 500-foot no-entry buffer zone and a 1,640-foot limited activity buffer zone. Snail kites do not exhibit fidelity to a specific nest site from year to year.

The project study area is located in USFWS Everglade snail kite CA; however, no suitable snail kite habitat was observed, no snail kites have historically been documented within one (1) mile of the project study area, and no individuals were observed during field reviews. Therefore, it has been determined that the proposed project will have "**no effect**" on the Everglade snail kite.

Red-cockaded Woodpecker (*Picoides borealis*)

The red-cockaded woodpecker is small woodpecker that is listed as ***endangered*** by the **USFWS**. The red-cockaded woodpecker (RCW) is found primarily in open, mature pine woodlands that have a diversity of grass and forbs. The project study area is located in USFWS RCW CA; however, no suitable RCW habitat was observed in the project study area, no RCWs have historically been documented within one (1) mile of the project study area, and no individuals were observed during field reviews. Therefore, it has been determined that the proposed project will have "**no effect**" on the RCW.

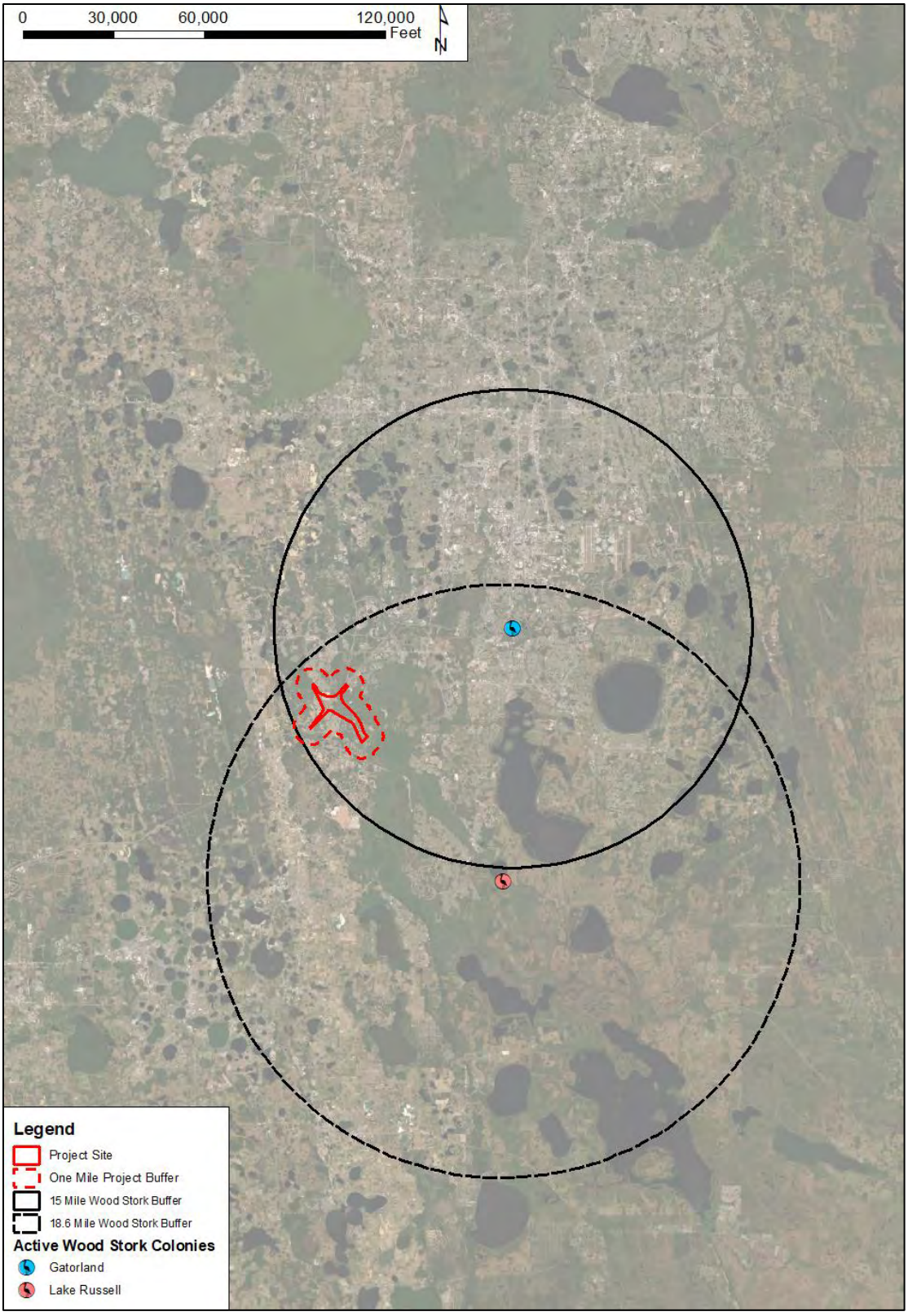

Figure 4-1 Wood Stork Core Foraging Map

4.2.2 State Protected Species

4.2.2.1 Flora

Ashe's Savory (*Calamintha ashei*)

Ashe's savory is a bushy shrub that has small whitish to lavender flowers that is listed as ***threatened*** by the **FDACS**. This species is a member of the mint (*Lamiaceae*) family and is found mostly in openings of pine scrub habitat in Florida but can also be found in disturbed areas such as abandoned fields, roadsides, and fire lanes. Suitable habitat for this species was not observed within the project study area. According to FNAI data, Ashe's savory has the potential to occur within the project study area, but it has not been documented within one (1) mile of the project study area. Additionally, this species was not observed during the field reviews of the project study area. Based on this information, it has been determined that the project will have "**no effect anticipated**" on the Ashe's savory.

Celestial Lily (*Nemastylis floridana*)

The celestial lily is a perennial herb with a single, tall, slender stem and a dark blue flower that is listed as ***endangered*** by the **FDACS**. This species is a member of the iris (*Iridaceae*) family and occurs in wet flatwoods, prairies, marshes, and cabbage palm hammocks edges. Suitable habitat for this species was observed within the project study area. According to FNAI data, the celestial lily has the potential to occur within the project study area, but it has not been documented within one (1) mile of the project study area. During site reviews this species was not observed within the project study area. Based on this information, it has been determined that the project will have "**no adverse effect anticipated**" on the celestial lily.

Chapman's sedge (*Carex chapmannii*)

Chapman's sedge is a perennial smooth sedge forming small to large tufts that is listed as ***threatened*** by the **FDACS**. This species is a member of the sedge (*Cyperaceae*) family and may occur in well-drained hammocks and floodplains of blackwater streams with intermittent floods. Suitable habitat for this species was not observed within the project study area. According to FNAI data, Chapman's sedge has the potential to occur within the project study area, but it has not been documented within one (1) mile of the project study area. Additionally, this species was not observed during the field reviews of the project study area. Based on this information, it has been determined that the project will have "**no effect anticipated**" on the Chapman's sedge.

Cutthroat Grass (*Panicum abscissum*)

Cutthroat grass is a grass that grows approximately two (2) feet tall with purple panicles and is listed as ***endangered*** by the **FDACS**. This species is a member of the grass (Poaceae) family and occurs on dry prairies, mesic flatwoods, wet flatwoods, depressional marshes, and seepage slopes. Suitable habitat for this species was observed within the project study area. According to FNAI data, the cutthroat grass has the potential to occur within the project study area, but it has not been documented within one (1) mile of the project study area. During site reviews this species was not observed within the project study area. Based on this information, it has been determined that the project will have "**no adverse effect anticipated**" on the cutthroat grass.

Florida Beargrass (*Nolina atopocarpa*)

Florida beargrass is a perennial herb with long, stiff leaves and clusters of small white flowers that is listed as ***threatened*** by the **FDACS**. This species is a member of the agave (*Agavaceae*) family and occurs on pine flatwoods and scrubby flatwoods. Suitable habitat for this species was not observed within the project study area. According to FNAI data, the Florida beargrass has the potential to occur within the project study area, but it has not been documented within one (1) mile of the project study area. Additionally, this species was not observed during the field reviews of the project study area. Based on this information, it has been determined that the project will have "**no effect anticipated**" on the Florida beargrass.

Florida Spiny-pod (*Matelea floridana*)

The Florida spiny-pod is a deciduous herbaceous vining plant that is listed as ***endangered*** by the **FDACS**. This species is a member of the milkweed (*Asclepiadaceae*) family and occurs on a variety of wooded habitats from fairly moist woods to upland hardwood forests. Suitable habitat for this species was observed within the project study area. According to FNAI data, the Florida spiny-pod has the potential to occur within the project study area, but it has not been documented within one (1) mile of the project study area. During site reviews this species was not observed within the project study area. Based on this information, it has been determined that the project will have "**no adverse effect anticipated**" on the Florida spiny-pod.

Florida Willow (*Salix floridana*)

The Florida willow is a tall tree or shrub with gray bark and brittle, reddish-brown twigs that is listed as ***endangered*** by the **FDACS**. This species is a member of the willow (*Salicaceae*) family and occurs in springheads, edges of spring runs, hydric hammocks, and floodplains. Suitable habitat for this species was observed within the project study area. According to FNAI data, the Florida willow has the potential to occur within the project study area, but it has not been documented within one (1) mile of the project study area. During site reviews this species was not observed within the project study area. Based on this information, it has been determined that the project will have "**no adverse effect anticipated**" on the Florida willow.

Giant Orchid (*Pteroglossaspis ecristata*)

The giant orchid is a perennial herb with yellow-green flowers twisted in towards the stalk that is listed as ***threatened*** by the **FDACS**. This species is a member of the orchid (*Orchidaceae*) family. This species occurs on sandhill, scrub, pine flatwoods, and pine rocklands. Suitable habitat for this species was observed within the project study area. According to FNAI data, the giant orchid has the potential to occur within the project study area, but it has not been documented within one (1) mile of the project study area. During site reviews this species was not observed within the project study area. Based on this information, it has been determined that the project will have "**no adverse effect anticipated**" on the giant orchid.

Hartwrightia (*Hartwrightia floridana*)

Hartwrightia is listed as ***threatened*** by the **FDACS**. This species is a member of the composite (*Asteraceae*) family and occurs on seepage slopes, edges of baygalls and springheads, wet prairies, and flatwoods with wet, peaty soils. Suitable habitat for this species was not observed within the project study area. According to FNAI data, the hartwrightia has the potential to occur within the project study area, but it has not been documented within one (1) mile of the project study area. Additionally, this species was not observed during the field reviews of the project

study area. Based on this information, it has been determined that the project will have "**no effect anticipated**" on the hartwrightia.

Incised Groove-bur (*Agrimonia incisa*)

Incised groover-bur is a perennial herb that grows to about 4 feet tall with hairy leaves and yellow flowers that is listed as ***threatened*** by the **FDACS**. This species is a member of the rose (Rosaceae) family and occurs in dry to moist longleaf pine-oak woods, oak-hickory slopes, roadsides, sand or shell maritime thickets. Suitable habitat for this species was not observed within the project study area. According to FNAI data, the incised groove-bur has the potential to occur within the project study area, but it has not been documented within one (1) mile of the project study area. Additionally, this species was not observed during field reviews of the project study area. Based on this information, it has been determined that the project will have "**no effect anticipated**" on the incised groove-bur.

Many-Flowered Grass-Pink (*Calopogon multiflorus*)

The many-flowered grass-pink is a small plant with grass like leaves and dark pink flowers that is listed as ***threatened*** by the **FDACS**. This species is a member of the orchid (*Orchidaceae*) family and occurs on dry to moist flatwoods with longleaf pine, saw palmetto, and wiregrass. Suitable habitat for this species was observed within the project study area. According to FNAI data, the many-flowered grass-pink has the potential to occur within the project study area, but it has not been documented within one (1) mile of the project study area. During site reviews this species was not observed within the project study area. Based on this information, it has been determined that the project will have "**no adverse effect anticipated**" on the many-flowered grass-pink.

Nodding Pinweed (*Lechea cernua*)

The nodding pinweed is a small erect forb that is listed as ***threatened*** by the **FDACS**. This species is a member of the rock-rose (*Cistaceae*) family and is found in deep sands, usually ancient dunes, on which the most common forest is a mixture of evergreen scrub oaks. Suitable habitat for this species was not observed within the project study area. According to FNAI data, the nodding pinweed has been historically documented within one (1) mile of the project study area. However, this species was not observed during the field reviews of the project study area. Based on this information, it has been determined that the project will have "**no effect anticipated**" on the nodding pinweed.

Piedmont Jointgrass (*Coelorachis tuberculosa*)

Piedmont jointgrass is a perennial grass that is listed as ***threatened*** by the **FDACS**. This species is a member of the grass (*Poaceae*) family and is found mostly in moist to wet areas in bogs and pinewoods. Suitable habitat for this species was not observed within the project study area. According to FNAI data, Piedmont jointgrass has the potential to occur within the project study area, but it has not been documented within one (1) mile of the project study area. Additionally, this species was not observed during the field reviews of the project study area. Based on this information, it has been determined that the project will have "**no effect anticipated**" on the Piedmont jointgrass.

Pine Pinweed (*Lechea divaricate*)

Pine pinweed is a perennial herb with slender, erect flowering stems rising from a dense mat of spreading, older stems that is listed as ***endangered*** by the **FDACS**. This species is a member of the rockrose (*Cistaceae*) family and is found mostly in scrub and scrubby flatwoods. Suitable habitat for this species was observed within the project study area. According to FNAI data, pin pinweed has the potential to occur within the project study area, but it has not been documented within one (1) mile of the project study area. During site reviews this species was not observed within the project study area. Based on this information, it has been determined that the project will have "**no adverse effect anticipated**" on the pine pinweed.

Pine-woods Bluestem (*Andropogon arctatus*)

Pine-woods bluestem is a perennial grass that grows up to 5 feet tall that is listed as ***threatened*** by the **FDACS**. This species is a member of the grass (*Poaceae*) family and is found mostly in open flatwoods, savanna, sand pine scrub, and can be found in seepage bogs. Suitable habitat for this species was observed within the project study area. According to FNAI data, pine-woods bluestem has the potential to occur within the project study area, but it has not been documented within one (1) mile of the project study area. During site reviews this species was not observed within the project study area. Based on this information, it has been determined that the project will have "**no adverse effect anticipated**" on the pine-woods bluestem.

Sand Butterfly Pea (*Centrosema arenicola*)

The sand butterfly pea is a large perennial vine with purplish-blue flowers that is listed as ***endangered*** by the **FDACS**. This species is a member of the pea (*Fabaceae*) family and typically occurs on sandhill, scrubby flatwoods, and dry upland woods. Suitable habitat for this species was observed within the project study area. According to FNAI data, the sand butterfly pea has the potential to occur within the project study area, but it has not been documented within one (1) mile of the project study area. During site reviews this species was not observed within the project study area. Based on this information, it has been determined that the project will have "**no adverse effect anticipated**" on the sand butterfly pea.

Scrub Bluestem (*Schizachyrium niveum*)

The scrub bluemstem is a small, tufted grass that is listed as ***endangered*** by the **FDACS**. This species is a member of the grass (*Poaceae*) family and typically occurs on white sand patches in rosemary scrub, and in sand pine scrub and oak scrub. Suitable habitat for this species was observed within the project study area. According to FNAI data, the scrub bluestem has the potential to occur within the project study area, but it has not been documented within one (1) mile of the project study area. During site reviews this species was not observed within the project study area. Based on this information, it has been determined that the project will have "**no adverse effect anticipated**" on the scrub bluestem.

Star Anise (*Illicium parviflorum*)

Star anise is a shrub with one (1) to several trunks, 6-inch long, evergreen leaves, and small, drooping flowers that is listed as ***endangered*** by the **FDACS**. This species is a member of the anisetree (*Illiciaceae*) family and occurs in banks of seepage stream, bottomland forest, hydric hammock, or baygall. Suitable habitat for this species was observed within the project study area. According to FNAI data, star anise has the potential to occur within the project study area; however, it has not been documented within one (1) mile of the project study area. During site

reviews this species was not observed within the project study area. Based on this information, it has been determined that the project will have "**no adverse effect anticipated**" on the star anise.

4.2.2.2 Fauna

Reptilian

Gopher Tortoise (*Gopherus polyphemus*)

The gopher tortoise is listed as ***threatened*** by the **FWC** and is a candidate species for listing under the Endangered Species Act by **USFWS**. This species requires well-drained and loose sandy soils for burrowing and low-growing herbs and grasses for food. These conditions are best found in the sandhill (longleaf pine-xeric oak) community, although tortoises are known to use many other habitats including sand pine scrub, xeric oak hammocks, dry prairies, pine flatwoods, and ruderal sites. Suitable habitat for this species was observed within the project study area. According to FNAI data, individuals have been documented within one (1) mile of the project study area. At the time of the site reviews, no gopher tortoise burrows were observed within or adjacent to the project study area. If gopher tortoises or burrows are found within the project study area, FTE will coordinate with the FWC to secure all permits needed to relocate the tortoises and associated commensal species prior to construction. With the implementation of these measures, it has been determined that this project will have "**no adverse effect anticipated**" on the gopher tortoise.

Florida pine snake (*Pituophis melanoleucus mugitus*)

The Florida pine snake is listed as **threatened** by the **FWC**. This species requires dry, sandy soils for burrowing and is most often found in pine hammocks, turkey oak hammocks, scrub, sandhill, and abandoned agricultural fields. Suitable habitat for this species was observed within the project study area; however, no individuals were observed during field reviews. Additionally, according to FNAI data, no individuals have been documented within one (1) mile of the project study area. Based on this information, it has been determined that the project will have "**no adverse effect anticipated**" on the Florida pine snake.

Avian

Florida Burrowing Owl (*Athene cunicularia floridana*)

The Florida burrowing owl is a small, ground-dwelling owl that is listed as ***threatened*** by the **FWC**. This species requires areas of short, herbaceous groundcover such as prairies, sandhills, and farmland. Suitable habitat for this species was not observed within the project study area and no individuals were observed during field reviews. Additionally, according to FNAI data, no individuals have been documented within one (1) mile of the project study area. Based on this information, it has been determined that the project will have "**no effect anticipated**" on the Florida burrowing owl.

Wading Birds - Little Blue Heron *(Egretta caerulea),* Tricolored Heron *(Egretta tricolor),* and Roseate Spoonbill *(Platalea ajaja)*

The little blue heron, tricolored heron, and roseate spoonbill are listed as ***threatened*** by the **FWC**. While each species is distinct, wading birds are discussed collectively since they occupy similar habitats and have similar feeding patterns. These wading birds' nest and forage among both fresh and saltwater habitats such as freshwater marshes, coastal beaches, mangrove

swamps, cypress swamps, hardwood swamps, wet prairies, and bay swamps. The populations of these species have been primarily impacted by the destruction of wetlands for development and by the drainage of wetlands for flood control and agriculture. Suitable habitat for this species was observed within the project study area. According to FNAI data and the FWC Wading Bird Rookery Database, none of these species or rookeries has been documented within the project study area and none were observed during field reviews.

The primary concern for impacts to these species is the loss of foraging habitat (wetlands). As part of implementing the proposed project, all wetland impacts will be mitigated to prevent a net loss of wetland habitat functions and values. Since the mitigation of impacts will be undertaken by FTE, it has been determined that the proposed project will have "**no adverse effect anticipated**" on the little blue heron, tricolored heron, and roseate spoonbill.

Florida Sandhill Crane (*Antigone canadensis pratensis*)

The Florida sandhill crane is a tall, long-necked, long-legged crane that is listed as ***threatened*** by the **FWC**. This species requires wet and dry prairies, marshes, and marshy lake edges. Nests are generally a mound of herbaceous plant material in shallow water or on the ground in marshy areas. While there is suitable habitat within the project study area, according to FNAI data, no individuals have been documented within one (1) mile of the project study area. Additionally, no individuals or nests were observed during field reviews. FTE will survey areas of suitable nesting habitat prior to construction if construction activities take place during the nesting season (January through July) and will coordinate with the FWC if nesting pairs are identified within 400 feet of the project's construction limits. With the implementation of these measures, it has been determined that the project will have "**no adverse effect anticipated**" on the Florida sandhill crane.

Southeastern American Kestrel (*Falco sparverius paulus*)

The southeastern American kestrel is the smallest falcon in United States. It is listed as ***threatened*** by the **FWC**. Kestrels are secondary cavity nesters using abandoned woodpecker cavities and prefer to nest in open pine habitats, woodland edges, prairies, and pastures throughout much of Florida. Nest sites are in tall dead trees or utility poles generally with an unobstructed view of surroundings. Sandhill habitats seem to be preferred, but kestrels have been observed in flatwoods settings. Open patches of grass or bare ground are necessary for kestrels to effectively utilize flatwoods settings, since thick palmettos may prevent detection of prey. Within the project study area, suitable habitat for the southeastern American kestrel was observed but limited and cavity trees were not observed during field reviews. Additionally, according to FNAI data, no individuals have been documented within one (1) mile of the project study area and no individuals or nests were observed during field reviews. Based on this information, it has been determined that the project will have "**no adverse effect anticipated**" on the southeastern American kestrel.

4.2.2.3 Other Species of Concern

Bald Eagle (*Haliaeetus leucocephalus*)

The bald eagle is a large raptor with a distinctive white head and yellow bill. This species has been federally de-listed by the **USFWS**. However, it remains federally protected under the Bald and Golden Eagle Protection Act (BGEPA) in accordance with the 16 United States Code 668

and the Migratory Bird Treaty Act of 1918. In addition, the FWC has implemented a bald eagle management plan (FWC 2008). The bald eagle tends to utilize riparian habitat associated with coastal areas, lake shorelines, and river banks. Nests are generally located near water bodies that provide a dependable food source. Nests within Florida are monitored by the Florida Audubon, and maintains a website of known bald eagle nest locations, which was last updated in 2021. According to this database, one (1) active bald eagle nest is located within one (1) mile of the project study area. Bald eagle nest OS231 is located approximately 0.6 miles (3,168 feet) northwest of I-4 (**Figure 4-2 Bald Eagle Location Map**). The project study area is located outside of the nest's primary (330 feet) and secondary (660 feet) buffer zones. The nest was not monitored during the last nesting season, and its status is unknown. No bald eagle nests were observed within 660 feet of the project study area during field reviews. During design and permitting, FTE will survey the project area for eagle nests. If a nest is observed within 660 feet of the project limits, FTE will coordinate with the USFWS to secure all necessary permits.

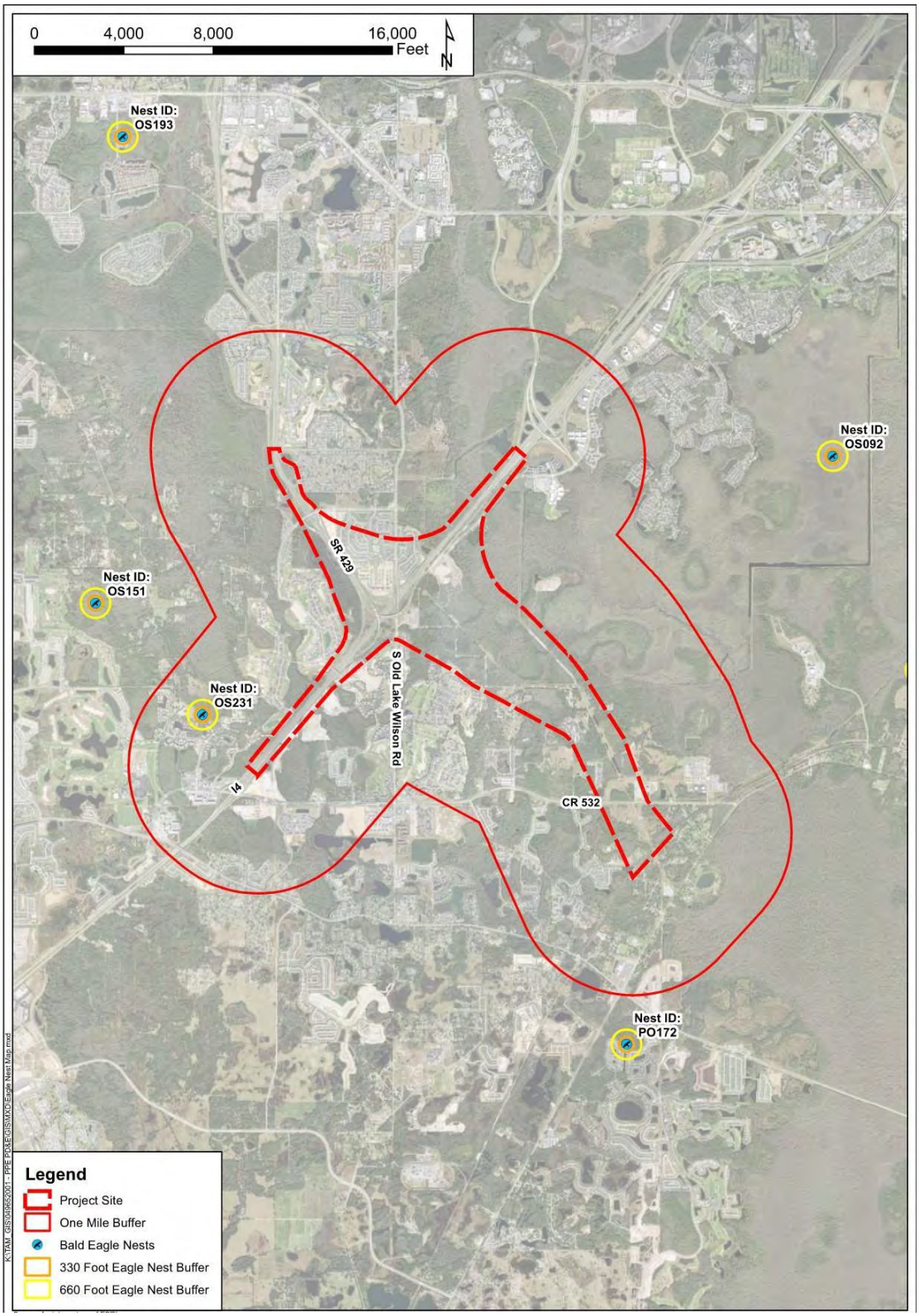

Figure 4-2 Bald Eagle Nest Location Map

4.2.3 Wildlife Crossings

The Preferred Alternative has several areas that include proposed bridges. These sections of the alignment allow for the continued habitat connectivity and movement of wildlife through this corridor. Bridging of the more substantial wetland systems will be considered for hydrologic concerns and upland wildlife crossings will be considered in areas where conservation landholding occurs on both sides of the roadway. Wildlife crossing modifications, such as travel shelves, will be considered for bridges throughout the project corridor. Technical assistance with USFWS in October 2020 determined that no specific wildlife crossings were requested and agreed that wildlife enhancements be considered at the wetland bridges.

The I-4 Beyond the Ultimate (BtU) project is part of the FDOT District 5 program and will address wildlife permeability separate from the PPEC project. The Wildlife Permeability along Interstate 4 report was published in June 2020 and lists an opportunity for wildlife crossings through inclusion of wildlife shelves as part of the I-4 BtU bridge widening project within Polk, Osceola, and Orange Counties. Based on coordination with FDOT District 5, the I-4 BtU will include a wildlife friendly design with ledging and animal friendly rip-rap and to maintain existing box culverts at Davenport Creek for aquatic species connectivity. Wildlife fencing to direct animals to the crossings was not preferred by Reedy Creek Improvement District. FTE and FDOT District 5 will coordinate to make sure that wildlife crossing elements designed for the I-4 BtU roadway, that overlap with the PPEC limits, will be accommodated.

4.2.4 Critical Habitat

The project study area was evaluated for the occurrence of Critical Habitat as defined by the Endangered Species Act of 1973 as amended and 50 CFR part 424. The USFWS and NMFS have the authority to protect critical habitat from destruction or adverse modification of the biological or physical constituent elements essential to the conservation of listed species. Critical Habitat is defined as the specific areas within the geographical area occupied by a species on which are found those physical or biological features essential to the conservation of the species and which defined may require special management considerations or protection. No designated Critical Habitat for any federal listed species occurs within the project study area. Based on this information, it has been determined that the proposed project will have "**no effect**" on any Critical Habitat.

4.2.5 Indirect, Secondary, and Cumulative Impacts

Indirect and secondary effects are those that are reasonably certain to occur later in time as a result of the proposed project and may occur outside of the area directly affected by the proposed project. Potential secondary effects include increased noise, traffic, lighting and development, which could impact wildlife or result in a change in wildlife migration patterns by reducing habitat connectivity. Cumulative effects include the effects on the environment that results from the incremental impact of the action when added to other past, present, and future state, local, or private actions that are reasonably certain to occur in the project area. Cumulative effects can result from individually minor but collectively significant actions taking place over time. Future federal actions that are unrelated to the proposed project are not considered in the determination of cumulative effects because they require a separate consultation in accordance with Section 7 of the ESA. Indirect, secondary, and cumulative impacts will be further defined and addressed

through agency coordination during the project's design phase. However, a brief summary of these impacts is provided in sections below.

4.2.5.1 Preferred Alternative

Indirect, secondary, and cumulative impacts associated with the proposed project have the potential to be high because this is a new roadway alignment. Indirect, secondary, and cumulative effects are anticipated to impact land use, visual and aesthetic resources, transportation, habitat connectivity, and species population.

Secondary impacts of increased nuisance/exotic vegetation are anticipated adjacent to areas of direct disturbance. Species such as Brazilian pepper (*Schinus terebinthifolia*) and cogongrass (*Imperata cylindrica*) are particularly aggressive and successful colonizers. Therefore, the disturbance of construction may allow these species to colonize and outcompete native vegetation within a certain distance from the direct impact. Nuisance/exotic vegetation has negative impacts to native wildlife and their habitats as they take over the natural habitats upon which the species rely.

4.2.5.2 No-Build Alternative

There are no indirect, secondary, or cumulative impacts to wildlife associated with the No-Build Alternative.

5.0 WETLANDS EVALUATION

5.1 Wetland and Surface Water Impacts

The jurisdictional limits of wetlands and surface waters were estimated in accordance with the State unified wetland delineation methodologies as adopted by the Florida Department of Environmental Protection (FDEP) and the water management districts per Chapter 62-340, F.A.C. and described in *The Florida Wetlands Delineation Manual* and the USACE 1987 Wetland Delineation Manual and regional supplement. The extent and types of wetlands in the project study area were documented in accordance with Executive Order EO 11990, Protection of Wetlands, and the PD&E Manual.

An ETDM Programming Screen Summary Report was published on January 21, 2022 containing comments from the ETAT on the project's effects on various natural, physical and social resources. The U.S. Army Corps of Engineers, National Marine Fisheries Service, U.S. Environmental Protection Agency (EPA), FDEP, USFWS, SWFWMD, and SFWMD were commenting agencies for Wetlands and Surface Waters. Wetlands and Surface Waters were assigned a degree of effect of 3 – Moderate.

For the purposes of this document, wetlands are defined as per 62.340 F.A.C. and Section 373.019 (27), F.S. Surface waters are defined as open water bodies. Formal wetland boundary delineation and surveys were not conducted as part of this study and will be completed as part of the state and federal permit process.

The project study area is defined as the area occupied by the build alternatives for the roadway extension as described in **Section 2.0**. The No-Build Alternative would result in no impacts to wetlands or surface waters. Potential direct impacts to wetlands and surface waters were assessed for the Preferred Alternative (**Table 5-1)**, not including potential pond sites. Impacts associated with the Preferred Alternative include 133.27 acres of wetlands and 15.45 acres of surface waters. Wetlands that are under a conservation easement within the Preferred Alternative included 44.73 acres. A map showing the locations of the proposed wetland and surface water impacts and description of each type associated with the Preferred Alternative is provided in **Appendix C**. Under Section 704.6(11)(a) Florida Statute, the use of lands under conservation easements can be negotiated for the construction and operation of linear facilities including public transportation corridors.

Mitigation alternatives for the preferred build alternative's impacts to conservation easements will be coordinated with the various regulatory agencies including the holder of the conservation easements and will be defined more completely during any future design/permitting phase. Conceptual mitigation options for proposed impacts being reviewed during the design/permitting phase are anticipated to consider:

1. Available mitigation bank credit purchase to offset impacts to uplands/wetlands/listed species, and
2. Consideration for purchase/protection/donation to state land management agency of similar habitat acreage/condition not currently protected.

Secondary and indirect impacts will be assessed using the Uniform Mitigation Assessment Methodology (UMAM) at the time of permitting to determine loss within these systems and to estimate the mitigation.

Table 5-1 Proposed Wetland and Surface Water Impacts

Representative Wetlands	FLUCFCS Classification	FLUCFCS Description	USFWS Classification	Preferred Alternative Impact Acreage
WL 01	617	Mixed Wetland Hardwoods	PFO1C	26.05
WL Conservation Easements	617, 621, 630	Forested Wetlands	PFO1C/ PFO2F/ PFO1/3	44.73
WL 02	621	Cypress	PFO2F	14.88
WL 03	625	Hydric Pine Flatwoods	PFO4C	12.82
WL 04	630	Wetland Forested Mixed	PFO1/3	30.70
WL 05	640	Vegetated Non-Forested Wetlands	PEMC1C	1.33
WL 06	641	Freshwater Marshes	PEM1F	1.43
WL 08	6172	Mixed Wetland Shrubs	PSS1C	1.33
SW 01	530	Reservoir	PUBHx	15.45
			Total Wetland Impacts	**133.27**
			Total Surface Water Impacts	**15.45**
			Total Impacts	**148.72**

5.2 Uniform Mitigation Assessment Methodology

The Uniform Mitigation Assessment Methodology (UMAM) per Chapter 62-345, F.A.C., is a state and federally approved method used to assess wetlands in the State of Florida. UMAM was developed by the FDEP and the water management districts to determine the amount of mitigation required to offset adverse impacts to wetlands. The methodology was designed to assess functions provided by wetlands, the amount those functions are reduced by a proposed impact, and the amount of mitigation necessary to offset the proposed functional losses. This method is

also used to determine the degree of improvement in ecological value that will be created by proposed mitigation activities.

5.3 Uniform Mitigation Assessment Methodology Results

Representative UMAM scores were developed for each jurisdictional wetland and surface water habitat type (by FLUCFCS category) affected by the proposed project.

To calculate functional loss, the difference between the existing condition (current) scores and the proposed condition (with) scores for each habitat type within the Preferred Alternative was multiplied by the acreage of proposed impact to determine the lost value of functions to fish and wildlife resulting from construction of the preferred alternative. The completed UMAM data sheets for each habitat type within the Preferred Alternative are provided in **Appendix D**. Functional loss was calculated by habitat type for the Preferred Alternative. Construction of the Preferred Alternative would result in an estimated loss of 114.31 functional units.

These UMAM calculations are estimates and are based on existing conditions. The UMAM scores and values presented in **Table 5-2** are subject to agency review and may change during the state and federal permitting process.

Table 5-2 Estimated UMAM[1] Functional Loss for Wetlands in the Preferred Alternative (Direct Impacts)

Representative Wetlands	FLUCFCS Classification	FLUCFCS Description	USFWS Classification	UMAM Delta	Impact Acres	Functional Loss
WL 01	617	Mixed Wetland Hardwoods	PFO1C	-0.83	26.05	21.62
WL Conservation Easements	617, 621, 630	Forested Wetlands	PFO1C/ PFO2F/ PFO1/3	-0.90	44.73	40.26
WL 02	621	Cypress	PFO2F	-0.87	14.88	12.95
WL 03	625	Hydric Pine Flatwoods	PFO4C	-0.87	12.82	11.15
WL 04	630	Wetland Forested Mixed	PFO1/3	-0.83	30.70	25.48
WL 05	640	Vegetated Non-Forested Wetlands	PEM1C	-0.50	1.33	0.67
WL 06	641	Freshwater Marshes	PEM1F	-0.90	1.43	1.29
WL 08	6172	Mixed Wetland Shrubs	PSS1C	-0.67	1.33	0.89
				Total	**133.27**	**114.31**

[1] UMAM scores have not been approved by permitting agencies and are subject to change during the permitting process.

PSS1C: Palustrine, Scrub-Shrub, Broad-leaved Deciduous, Seasonally Flooded

PFO1C: Palustrine, Forested, Broad-leaved Deciduous, Seasonally Flooded

PFO2F: Palustrine, Forested, Needle-leaved Deciduous, Semi-permanently Flooded

PFO4C: Palustrine, Forested, Needle-leaved Evergreen, Seasonally Flooded

PFO1/3: Palustrine, Forested, Broad-leaved Deciduous, Broad-leaved Evergreen

PEM1C: Palustrine, Emergent, Persistent, Seasonally Flooded

PEM1F: Palustrine, Emergent, Persistent, Semi-permanently Flooded

5.4 Avoidance and Minimization

Wetlands and surface waters were considered in the selection of the Preferred Alternative to avoid and minimize impacts to wetlands to the greatest extent possible. A detailed alternatives analysis is included in the Preliminary Engineering Report.

FTE has undertaken all actions to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities. Measures have been taken to minimize harm to wetlands including the incorporation of bridges over the wetlands to reduce direct and secondary impacts by maintaining wetland connectivity and reducing the amount of fill for these portions of the project and

minimizing water quality impacts from stormwater discharges from roadway surfaces through the use of stormwater management systems. The proposed project will have no significant short-term or long-term adverse impacts to wetlands and there is no practicable alternative to construction in wetlands. Any unavoidable impacts to wetlands will be mitigated to achieve no net loss of wetland function. Impacts to wetlands are unavoidable for the build alternatives due to their location within the project area.

5.5 Indirect, Secondary and Cumulative Impacts

Indirect and secondary effects are those impacts that are reasonably certain to occur later in time as a result of the proposed project. They may occur outside of the area directly affected by the proposed project. Cumulative effects include the effects of future state, local, or private actions that are reasonably certain to occur in the project study area. Indirect, secondary, and cumulative impacts will be further defined and addressed through agency coordination during the project's design phase. However, a brief summary of these impacts is provided below.

5.5.1 Preferred Alternative

Indirect impacts are anticipated to occur as a result of the Preferred Alternative. Secondary impacts of edge effects will likely occur. At locations where natural areas meet development, edge effects such as increased cover of nuisance/exotic vegetation and changes in microclimate generally take place. Some wetlands within the Preferred Alternative project footprint already experience edge effects due to utility lines that are present within the project study area. The severity of these edge effects will vary based on pre-existing exposure to habitat alteration. It is anticipated that edge effects migrate to the new transitional area between remaining wetlands and new construction and would be greater in previously undisturbed areas. In areas designated for stormwater treatment, secondary impacts of increased nuisance/exotic vegetation are anticipated. Species such as Brazilian pepper and cogongrass are particularly aggressive and successful colonizers within newly disturbed areas. Therefore, the disturbance of construction may allow these species to colonize and outcompete native vegetation. Nuisance/exotic vegetation has negative impacts to wetlands and surface waters as these species may take over native vegetation. Since wetland impacts resulting from the construction of this project will be mitigated, no cumulative impacts are anticipated to occur. Potential secondary wetland impacts were evaluated and assessed as part of the Preferred Alternative Evaluation Report. The Preferred Alternative Evaluation Report was prepared to compare two build alternatives that were considered prior to the selection of the preferred alternative. The evaluation considered geometrics, utility impacts, environmental impacts, community impacts, cost, constructability, project segmentation among other issues. Using a matrix for a quantitative analysis of the impacts and costs and a qualitative analysis of the major project issues the Preferred Alternative was selected. Direct, secondary and indirect wetland impacts will be further assessed during the design phase for this project and will also include identification of mitigation needs to offset any unavoidable wetland impacts, at which time mitigation required will be quantified and pursued.

5.5.2 No-Build Alternative

There are no indirect, secondary, or cumulative impacts to wetlands associated with the No-Build Alternative.

5.6 Mitigation

In 2008, the USACE and the EPA issued regulations governing compensatory mitigation for activities authorized by the Department of the Army (Federal Register, 2008). These regulations, as promulgated in 33 Code of Federal Regulations (CFR) Part 332, establish a hierarchy for determining the type and location of compensatory mitigation. To briefly summarize, the rule establishes a preference for the use of mitigation bank credits if a mitigation bank has the appropriate number and resource type of credits available. If the permitted impacts are not in the service area of an approved mitigation bank, or if the appropriate number and resource type of credits are otherwise unavailable, then the rule establishes a preference for in lieu fee program credits. If an approved mitigation bank or in-lieu fee program cannot be used to provide the required compensatory mitigation, the rule establishes a preference for permittee responsible mitigation conducted under a watershed approach. Wetland impacts which will result from the construction of this project will be mitigated pursuant to Section 373.4137, F.S., to satisfy all mitigation requirements of Part IV of Chapter 373, F.S., and 33 U.S.C. §1344. Compensatory mitigation for this project will be completed through the use of mitigation banks and any other mitigation options that satisfy state and federal requirements. The proposed project will have no significant short-term or long-term adverse impacts to wetlands because any unavoidable impacts to wetlands will be mitigated to achieve no net loss of wetland function.

Compensatory mitigation for this project will be completed using mitigation banks and other mitigation options to satisfy state and federal requirements. The project study area is currently located within the service area of the following mitigation banks: Hatchineha Ranch, Kissimmee Ridge, Collany, Southport Ranch, Bullfrog Bay, Twin Oaks, Florida, Shingle Creek, Reedy Creek and Split Oak Forest. As of the date of this NRE, federal and/or state credits are available at Southport Florida and Reedy Creek Mitigation Banks and the available credits are for herbaceous and forested freshwater wetlands. State only credits are currently available through Hatchineha Ranch, Shingle Creek, and Twin Oaks Mitigation Banks. Collany Mitigation Bank is a conservation bank that provides mitigation credits for protected species impacts.

All UMAM scores, UMAM calculations, preliminary wetland lines and determinations discussed are subject to revision and approval by regulatory agencies during the permitting process. The exact type of mitigation used to offset wetland impacts from the proposed Poinciana Parkway Extension Connector will be coordinated with the FDEP and SFWMD during the permitting phase(s) of this project.

6.0 PERMITTING REQUIREMENTS AND COORDINATION

The FDEP, SFWMD, and SWFWMD regulate impacts to wetlands within the project study area. Other agencies, including the USFWS, NMFS, EPA, and the FWC, review and comment on wetland permit applications. The FWC also issues permits for gopher tortoise relocation activities and incidental takes for state protected avian species. The USFWS is the lead agency for eagle nest take permitting or coordination. In addition, the FDEP regulates stormwater discharges from construction sites. The complexity of the permitting process will depend on the degree of the impact to jurisdictional areas. It is anticipated that the following permits will be required for this project:

Permit	**Issuing Agency**
Environmental Resource Permit (ERP)	SFWMD
Section 404 State Assumption	FDEP
National Pollutant Discharge Elimination System (NPDES)	FDEP
Gopher Tortoise Relocation Permit (as necessary)	FWC
Incidental Take Permit (as necessary)	FWC

Environmental Resource Permit

The project limits are located within the RCID, SFWMD, and SWFWMD boundary. Pre-application meetings were held with both RCID and SFWMD (**Appendix J**). SFWMD said that it would be the lead permitting agency for the project since the majority of the limits are within the SFWMD boundary. The permit application will be submitted to the RCID for review and comment before submitting to the SFWMD. The RCID will issue approval of the ERP application before it is submitted to the SFWMD for review and issuance. SFWMD requires an ERP when construction of any project results in the creation of a new or modification of an existing surface water management system or results in impacts to waters of the state, including wetlands. The complexity associated with the ERP permitting process will depend on the size of the project and/or the extent of wetland impacts. Under current state rules, the SFWMD will likely require an individual permit for this project.

FDEP State 404 Program

In 2018, FDEP was given the authority to begin the rulemaking process to assume the federal dredge and fill permitting program under section 404 of the Clean Water Act within state-assumed waters. This process was completed in July 2020 and created the State 404 Program within Chapter 62-330 and 62-331, F.A.C. to facilitate this assumption. This State 404 Program is responsible for overseeing permitting for any project proposing dredge or fill activities within state-assumed waters. The State 404 Program is a separate program from the existing ERP program,

and projects within the state-assumed waters require both an ERP and a State 404 Program authorization. The wetlands and surface waters associated with this project would fall under the state-assumed waters definition and therefore would require a permit through this program.

NPDES

40 CFR Part 122 prohibits point source discharges of stormwater to waters of the U.S. without a NPDES permit. Under the State of Florida's delegated authority to administer the NPDES program, construction sites that will result in greater than one (1) acre of disturbance must file for and obtain either coverage under an appropriate generic permit contained in Chapter 62-621, F.A.C., or an individual permit issued pursuant to Chapter 62-620, F.A.C. A major component of the NPDES permit is the development of a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP identifies potential sources of pollution that may reasonably be expected to affect the quality of stormwater discharges from the site and discusses good engineering practices (i.e., best management practices) that will be used to reduce the pollutants.

FWC Gopher Tortoise Relocation Permit (as necessary)

At the time of the site reviews, no gopher tortoise burrows were observed within or adjacent to the project study area. However, if gopher tortoises or burrows are found within the project limits, FTE will coordinate with the FWC to secure all permits needed to relocate the tortoises and associated commensal species prior to construction. FWC requires the excavation and relocation of any gopher tortoise burrows and individuals within the project limits prior to construction.

In accordance with the requirements of Rules 68A-25.002 and 68A-27.004 F.A.C., a permit for gopher tortoise capture/release activities must be secured from FWC before initiating any relocation work. The FWC will require a 100 percent gopher tortoise survey to be conducted within 90 days of construction commencement.

FWC Incidental Take Permit (as necessary)

Based on field reviews, suitable foraging and nesting habitat exists within the project study area for the species listed in **Section 5.2.2**. In accordance with 68A-27.001(4), 68A-27.003(a), 68A-25.002(10), 68A-27.003(2)(a), 68A-27.001(4), 68A-1.004, and 68A-27.005 F.A.C., a permit for removal of state protected species must be secured from the FWC before initiating incidental take.

While avoidance and minimization is the preferred course of action, a Listed Species Incidental Take Permit is available for situations that require the removal of these species. Further technical assistance will be reinitiated during the design phase of the project if needed.

7.0 CONCLUSIONS

7.1 Protected Species and Habitat

The project study area was evaluated for the presence of federal and/or state protected species and their suitable habitat in accordance with Section 7 of the ESA and the PD&E Manual. **Tables 7-1, 7-2**, and **7-3** summarize the impact determination that has been made for each federal and state listed species based upon their probability ranking and the implementation measures and/or commitments to offset any potential impacts to each species.

Table 7-1 Federal Protected Species Impact Determinations

Project Impact Determination	Federal Listed Species	
	Species	***Status****
	Flora	
	Avon Park rabbit-bells (*Crotalaria avonensis*)	***FE***
	Clasping warea (*Warea amplexifolia*)	***FE***
	Florida bonamia (*Bonamia grandiflora)*	***FT***
	Florida jointweed *(Polygonella basiramia)*	***FE***
	Garrett's scrub balm (*Dicerandra christamnii*)	***FE***
	Perforate reindeer lichen (*Cladonia perforate*)	***FE***
	Pygmy fringe tree *(Chionanthus pygmaeus)*	***FE***
	Scrub buckwheat (*Eriogonum longifolium* var. *gnaphalifolium)*	***FT***
"No effect"	Scrub lupine (*Lupinus aridorum*)	***FE***
	Scrub mint (*Dicerandra frutescens*)	***FE***
	Scrub pigeon-wing (*Clitoria fragrans*)	***FT***
	Short-leaved rosemary (*Conradina brevifolia)*	***FE***
	Fauna	
	Florida grasshopper sparrow (*Ammodramus savannarum floridanus*)	***FE***
	Crested caracara (*Caracara cheriway*)	***FT***
	Everglade snail kite (*Rostrhamus sociabilis plumbeus*)	***FE***
	Red-cockaded woodpecker (*Picoides borealis*)	***FE***
	Flora	
	Britton's beargrass (*Nolina brittoniana)*	***FE***
	Carter's warea (*Warea carteri)*	***FE***
	Florida blazing star (*Liatris ohlingerae*)	***FE***
	Highlands scrub hypericum (*Hypericum cumulicola*)	***FE***
	Lewton's polygala (*Polygala lewtonii)*	***FE***
"May affect, but is not likely to adversely affect"	Papery nailwort (*Paronychia chartacea* ssp. *chartacea)*	***FT***
	Scrub plum (*Prunus geniculata*)	***FE***
	Small's jointweed (*Polygonella myriophylla*)	***FE***
	Fauna	
	American alligator (*Alligator mississippiensis*)	***FT***
	Eastern indigo snake (*Drymarchon couperi*)	***FT***
	Florida scrub-jay *(Aphelocoma coerulescens*)	***FT***
	Wood stork (*Mycteria americana*)	***FT***

Project Impact Determination	Federal Listed Species	
"May affect, likely to adversely affect"	Blue-tailed mole skink (*Plestiodon egregius lividus*)	***FT***
	Sand skink (*Plestiodon reynoldsi*)	***FT***

*FE–Federally endangered; FT–Federally threatened; SE–State endangered; ST–State threatened; C–Federal candidate; BGEPA–Bald and Golden Eagle Protection Act

Table 7-2 State Protected Species Impact Determinations

Project Impact Determination	State Listed Species	
"No effect"	***Species***	***Status****
	Flora	
	Ashe's savory (*Calamintha ashei)*	***ST***
	Chapman's sedge (*Carex chapmannii*)	***ST***
	Florida beargrass (*Nolina atopocarpa)*	***ST***
	Hartwrightia (*Hartwrightia floridana)*	***ST***
	Incised groove-bur (*Agrimonia incisa*)	***ST***
	Nodding pinweed (*Lechea cernua*)	***ST***
	Piedmont jointgrass (*Coelorachis tuberculosa*)	***ST***
	Fauna	
	Florida burrowing owl (*Athene cunicularia floridana*)	***ST***
"No adverse effect anticipated"	***Flora***	
	Celestial lily (*Nemastylis floridana)*	***SE***
	Cutthroat grass (*Panicum abscissum*)	***SE***
	Florida spiny-pod (*Matelea floridana)*	***SE***
	Florida willow (*Salix floridana)*	***SE***
	Giant orchid (*Pteroglossaspis ecristata)*	***ST***
	Many-flowered grass-pink (*Calopogon multiflorus)*	***ST***
	Pine pinweed (*Lechea divaricate*)	***SE***
	Pine-woods bluestem (*Andropogon arctatus*)	***ST***
	Sand butterfly pea (*Centrosema arenicola)*	***SE***
	Scrub bluestem (*Andropogon arctatus*)	***SE***
	Star anise (*Illicium parviflorum*)	***SE***
	Fauna	
	Gopher tortoise (*Gopherus polyphemus*)	***ST/C***
	Florida pine snake (*Pituophis melanoleucus mugitus*)	***ST***
	Little blue heron (*Egretta caerulea*)	***ST***
	Tricolored heron (*Egretta tricolor*)	***ST***
	Roseate spoonbill *(Platalea ajaja)*	***ST***
	Florida sandhill crane (*Antigone canadensis pratensis*)	***ST***
	Southeastern American kestrel (*Falco sparverius paulus*)	***ST***

*FE–Federally endangered; FT–Federally threatened; SE–State endangered; ST–State threatened; C–Federal candidate; BGEPA–Bald and Golden Eagle Protection Act

Table 7-3 Other Species of Concern Impact Determinations

Project Impact Determination	Additional Protected Species	
	Species	***Status****
No impacts to primary or secondary buffer zones	Bald eagle (*Haliaeetus leucocephalus*)	***BGEPA***

*FE–Federally endangered; FT–Federally threatened; SE–State endangered; ST–State threatened; C–Federal candidate; BGEPA–Bald and Golden Eagle Protection Act

7.2 Wetland Evaluation

The proposed project alternatives were evaluated for impacts to wetlands in accordance with EO 11990 and the PD&E Manual. The proposed project will not have significant short-term and long-term adverse impacts to wetlands. In accordance with EO 11990, FTE has undertaken all actions to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities. Nonetheless, FTE has determined that there is no practicable alternative to construction impacts occurring in wetlands. Any unavoidable impacts to wetlands will be mitigated to achieve no net loss of wetland function.

A UMAM analysis (**Appendix D**) was performed to determine an estimate to the functional loss due to wetland impacts from the preferred alternative. Construction of the Preferred Alternative results in an estimated total of 133.27 acres of direct wetland impacts with an associated functional loss of 114.31 units and a total of 15.45 acres of surface water impacts (**Table 5-1**).

Wetland impacts which will result from the construction of this project will be mitigated pursuant to Section 373.4137, F.S. to satisfy all mitigation requirements of Part IV Chapter 373, F.S. and 33 U.S.C. 1344. Compensatory mitigation for this project will be completed through the use of mitigation banks and any other mitigation options that satisfy state and federal requirements.

7.3 Implementation Measures

Based on the field and literature reviews outlined in this report, federal or state-listed protected species have the potential to occur within the project study area. To assure that the proposed project will not adversely impacts these species, FTE will adhere to the following:

- As needed, the FTE will perform updated wildlife surveys for the species discussed in this report and other wildlife species, during the project design phase to ascertain the involvement, if any, of listed species.
- During the design and permitting phase of this project, gopher tortoise surveys will be conducted and if any burrows are found within 25 feet of construction limits, technical assistance with the FWC will be reinitiated to secure any necessary permits for gopher tortoises and associated commensal species before construction.
- If a bald eagle nest is observed within 660 feet of the project limits, Florida's Turnpike Enterprise will coordinate with the USFWS to secure necessary approvals prior to constructing the project.
- Impacts to suitable foraging habitat for the federally-listed wood stork will be mitigated through the purchase of credits from a USFWS-approved mitigation bank pursuant to Section 373.4137, F.S. or as otherwise agreed to by the FTE and the appropriate regulatory agencies.
- During the design and permitting phases of this project, the FTE will conduct a general plant survey concurrently with other wildlife surveys. If any federal or state protected plant species are found within 25 feet of construction limits, coordination will occur with USFWS (through USACE) and FDACS to secure any necessary permits.

- If Florida sandhill crane nests are observed during future re-surveys prior to construction, then a 400-foot buffer will be used if construction occurs during the nesting season (January through July). The FTE will coordinate with the FWC during the project construction phase, if necessary.

7.4 Commitments

Based on the field and literature reviews outlined in this report, federal or state-listed species have the potential to occur within the project study area. In order to assure that the proposed project will not adversely impacts these species, FTE will make the following commitments:

1. FDOT will review and update as needed the status of species listed as Endangered, Threatened, or Proposed, and designated critical habitats in the project area.

a. FDOT will re-initiate ESA Section 7 Consultation with the USFWS during the final design phase to support permitting and to address potential impacts to listed species.

- The FTE will conduct design-phase coverboard surveys in accordance with the most recent USFWS guidelines to verify activity and occupancy status of the blue-tailed mole skink and sand skink. Mitigation for impacts to occupied sand skink habitat will be provided as needed. Once the survey is completed, FDOT will then reinitiate formal consultation for the sand skink.

- During the design and permitting phases of this project, the FTE will coordinate with USFWS to determine if any additional Florida scrub-jay surveys are needed. Mitigation for impacts to occupied Florida scrub-jay habitat will be provided as needed.

- The most recent version of the USFWS' Standard Protection Measures for the Eastern Indigo Snake will be adhered to during construction of the proposed project.

7.5 Agency Coordination

The ETAT evaluated the project's effects on various natural, physical and social resources. ETAT comments are summarized in **Section 4.0 and 5.1**. Coordination with SFWMD took place on April 13, 2022 to discuss the drainage criteria, conservation easements, wetlands, and permitting requirements. Coordination with FDEP took place on April 11, 2022 to discuss the drainage criteria, conservation easements, wetlands, and permitting requirements. Coordination with RCID took place on May 19, 2021 and March 3, 2022 to discuss the drainage criteria, conservation easements, wetlands, and permitting requirements. A technical guidance meeting with the USFWS was held on October 27, 2020 to determine the implementation of specific actions and measures relative to federal protected species with available suitable habitat within the project study area and on October 21, 2021 to discuss the survey plan for the Florida scrub-jay. Meeting notes for the SFWMD, FDEP, RCID pre-application meetings and the USFWS technical assistance meetings are provided in **Appendix J**. Coordination with SFWMD, FDEP, RCID, USFWS, and FWC will continue as the project progresses.

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APPENDIX A

Soils Descriptions and Map

Osceola County

1 – Adamsville sand

Adamsville sand is somewhat poorly drained and sits nearly level on narrow ridges next to and slightly higher than slough, marshes, and lakes, and on low knolls in flatwoods. The slopes range from 0 to 2 percent. The water table sits at a depth of 20 to 40 inches for 2 to 6 months annually. Permeability is rapid throughout, and the available water capacity is very low to low. The *Hydric Soils of Florida Handbook* (Hurt 2007) classifies Adamsville sand as hydric.

5 – Basinger fine sand

Basinger fine sand is poorly drained and sits nearly level in low, broad flats and sloughs in flatwoods. Its slopes are 0 to 2 percent and smooth to concave. Basinger fine sand has a water table depth of less than 10 inches for 2 to 6 months during most years but can drop to 40 inches in extended dry periods. Permeability is very rapid throughout, and the available water capacity is low to very low. The *Hydric Soils of Florida Handbook* (Hurt 2007) classifies Basinger fine sand as hydric.

6 – Basinger fine sand, depressional

Basinger fine sand, depressional, is poorly drained, nearly level, and found in shallow depressions and indistinct flatwood drainageways. Slopes are 0 to 1 percent and flat to concave. Water stands on the surface of Basinger fine sand, depressional for 6 to 12 months during most years. Permeability is very rapid throughout, and the available water capacity is low to very low. The *Hydric Soils of Florida Handbook* (Hurt 2007) classifies Basinger fine sand, depressional, as hydric.

7 – Candler sand, 0 to 5 percent slopes

Candler sand, 0 to 5 percent slopes, is excessively drained and found on uplands. The water table sits at a depth of more than 72 inches. Permeability is rapid to very rapid throughout, and the available water capacity is low to very low. Candler sand, 0 to 5 percent slopes, is not classified as hydric.

8 – Candler sand, 5 to 12 percent slopes

Candler sand, 5 to 12 percent slopes, is excessively drained soil and found on strongly sloping uplands. The water table sits at a depth of more than 72 inches. Permeability is rapid to very rapid throughout, and the available water capacity is low to very low. Candler sand, 5 to 12 percent slopes, is not classified as hydric, but it may contain hydric inclusions.

12 – Floridana fine sand

Floridana fine sand is very poorly drained and found at the edges of large lakes and depressions in flatwoods. Slopes range from 0 to 2 percent. The water table sits above the surface for more than 6 months in most years and within a depth of 10 inches for 9 months or more in most years. Permeability is rapid throughout and the available water capacity is medium in the surface layer and low in the subsurface layer. The *Hydric Soils of Florida Handbook* (Hurt 2007) classifies Floridana fine sand as hydric.

15 – Hontoon muck

Hontoon muck is very poorly drained and found in depressional areas, freshwater marshes, and swamps. Slopes are less than 1 percent. Typically, the water table is at the surface or up to 10 inches below the surface. Permeability is rapid throughout and the available water capacity is very high. The *Hydric Soils of Florida Handbook* (Hurt 2007) classifies Hontoon muck as hydric.

16 – Immokalee fine sand

Immokalee fine sand is a poorly drained soil found in broad flatwoods. Slopes range from 0 to 2 percent. The water table sits less than 10 inches deep for 2 months of the year, between 10 to 40 inches for eight (8) months of the year, and below 40 inches during dry periods. Permeability is rapid in the surface layer and moderately rapid in the subsoil. Available water capacity is low in surface layers, very low in the subsurface layer, medium in the subsoil, and very low in the substratum. The *Hydric Soils of Florida Handbook* (Hurt 2007) classifies Immokalee fine sand as hydric.

22 – Myakka fine sand

Myakka fine sand is poorly drained and found in broad flatwoods. Slopes range from 0 to 2 percent. The water table typically sits at a depth of less than 10 inches for 1 to 4 months and more than 40 inches during dry seasons. Permeability is rapid in the surface layer and moderate to moderately rapid in the subsoil. The available water capacity is very low in the surface layer and medium in the subsoil. Myakka fine sand is not classified as hydric, but it may contain hydric inclusions.

27 – Ona fine sand

Ona fine sand is poorly drained and found in flatwoods between swamps and marshes or in long, narrow bands bordering depressions and drainageways. Slopes range from 0 to 2 percent. The water table sits at a depth of 10 inches for 1 to 2 months and at a depth of 10 to 40 inches for 4 to 6 months during most years. Permeability is rapid in the surface layer and moderately rapid in the subsoil. The available water capacity is medium in the surface layer and subsoil, and very low to low in the substratum. The *Hydric Soils of Florida Handbook* (Hurt 2007) classifies Ona fine sand as hydric.

28 – Paola sand, 0 to 5 percent slopes

Paola sand, 0 to 5 percent slopes, is excessively drained and found on upland ridgetops, side slopes, low ridges, and knolls in flatwoods. The water table sits below a depth of 72 inches. Permeability is very rapid throughout and the available water capacity is very low. Paola sand, 0 to 5 percent slopes, is not classified as hydric.

32 – Placid fine sand

Placid fine sand is very poorly drained, nearly level, and found in low, wet depressions in swamps in flatwoods. Slopes are less than 1 percent. Water stays on the surface of this sand for 6 to 9 months or more in most years. Permeability is rapid throughout, and the available water capacity is high in the surface layer and low in the subsoil. *Hydric Soils of Florida Handbook* (Hurt 2007) classifies Placid fine sand as hydric.

34 – Pomello fine sand, 0 to 5 percent slopes

Pomello fine sand, 0 to 5 percent slopes, is moderately well drained and found in transitional areas between high sand ridges and flatwoods and on slight knolls and low ridges throughout flatwoods. The water table sits at a depth of 24 to 40 inches during wet seasons and 40 to 60 inches during dry seasons. Permeability is very rapid in the surface layer and moderately rapid in the subsoil. The available water capacity very low in the surface layer and medium in the subsoil. Pomello fine sand, 0 to 5 percent slopes, is not classified as hydric.

36 – Pompano fine sand

Pompano fine sand is poorly drained and found on low ridges in flatwoods. Slopes range from 0 to 2 percent. The water table sits at a depth of 10 inches for 1 to 3 months and at a depth of 10 to 40 inches for 6 months or more. Permeability is rapid in the surface layer and moderately rapid in the subsoil. The available water capacity is low to very low in the surface and subsurface layers and medium in the subsoil. The *Hydric Soils of Florida Handbook* (Hurt 2007) classifies Pompano fine sand as hydric.

37 – Pompano fine sand, depressional

Pompano fine sand, depressional, is nearly level, poorly drained, and found in depressions and drainageways. Slopes are less than 1 percent. This sand is covered in standing water for 6 to 12 months during most years. Permeability is rapid throughout, and the available water capacity is very low throughout. *Hydric Soils of Florida Handbook* (Hurt 2007) classifies Pompano fine sand, depressional, as hydric.

38 – Riviera fine sand

Riviera fine sand is poorly drained and found on broad, low flats. Slopes range from 0 to 2 percent. The water table sits at a depth of 10 inches for 2 to 4 months and at a depth of 10 to 30 inches for the rest of the year. Permeability is rapid in the surface and subsurface layers, and slow to very slow in the subsoil. The available water capacity is low in the surface and subsurface layers and medium to high in the subsoil. The *Hydric Soils of Florida Handbook* (Hurt 2007) classifies Riviera fine sand as hydric.

39 – Riviera fine sand, depressional

Riviera fine sand, depressional, is poorly drained, nearly level, and found in depressions and on the edges of large lakes. The water table sits on the surface for 6 months or more, and commonly recedes to several inches below the surface during extended dry periods. Permeability is rapid in the surface and subsurface layers, and slow to very slow in the subsoil. The available water capacity is low in the surface and subsurface layers and medium to high in the subsoil. The *Hydric Soils of Florida Handbook* (Hurt 2007) classifies Riviera fine sand, depressional, as hydric.

40 – Samsula muck

Samsula muck is very poorly drained, nearly level, and found in freshwater marshes and swamps. The water table sits at or above the surface except during extended dry periods. Permeability is rapid throughout and the available water capacity is very high in the organic layers, and very low below. The *Hydric Soils of Florida Handbook* (Hurt 2007) classifies Samsula muck as hydric.

41 – Satellite sand

Satellite sand is somewhat poorly drained and found on low ridges and knolls in flatwoods. Slopes range from 0 to 2 percent. The water table sits at a depth of 10 to 40 inches for 2 to 6 months and below a depth of 40 inches in the dry seasons. Permeability is very rapid throughout and the available water capacity is very low throughout. Satellite sand, 0 to 2 percent slopes is not classified as hydric, but it may contain hydric inclusions.

42 – Smyrna fine sand

Smyrna fine sand is nearly level, poorly drained, and found in broad flat areas in flatwoods. The water table sits at a depth of less than 10 inches for 1 to 4 months of a year and between 10 to 40 inches for more than 6 months of a typical year. During rainy season, the water table rises above the surface briefly. Permeability is rapid in the surface layer and moderate to moderately rapid in the subsoil. The available water capacity is very low to low in the surface layer and medium in the subsoil. *Hydric Soils of Florida Handbook* (Hurt 2007) classifies Smyrna fine sand as hydric.

43 – St. Lucie fine sand, 0 to 5 percent slopes

St. Lucie fine sand, 0 to 5 percent slopes, is excessively drained and found on narrow, discontinuous ridges in sandy uplands and flatwoods. The water table is seasonal and sits at a depth of 72 to 120 inches. Permeability is very rapid throughout and the available water capacity is very low. St. Lucie fine sand, 0 to 5 percent slopes, is not classified as hydric.

44 – Tavares fine sand, 0 to 5 percent slopes

Tavares fine sand, 0 to 5 percent slopes, is moderately well drained, nearly level, and found on low ridges in flatwoods. The water table sits at a depth of 40 to 60 inches most of the year and more than 60 inches during dry periods. Permeability is very rapid throughout, and the available water capacity is very low throughout. Tavares fine sand, 0 to 5 percent slopes, is not classified as hydric.

Polk County

13 – Samsula muck

Samsula muck is very poorly drained, nearly level, and found in freshwater marshes and swamps. The water table sits at or above the surface except during extended dry periods. Permeability is rapid throughout and the available water capacity is high in the organic layers. The *Hydric Soils of Florida Handbook* (Hurt 2007) classifies Samsula muck, frequently ponded, as hydric.

17 – Smyrna and Myakka fine sands

Smyrna and Myakka fine sands are poorly drained and are found in broad areas in flatwoods. Slopes range from 0 to 2 percent. The water table sits within 12 inches of the surface for 1 to 4 months in most years. Permeability is moderate or moderately rapid in the subsoil, and the available water capacity is low. The *Hydric Soils of Florida Handbook* (Hurt 2007) classifies Smyrna and Myakka fine sands as hydric.

19 – Floridana mucky fine sand, depressional

Floridana mucky fine sand, depressional is very poorly drained and found in depressional areas in flatwoods. The water table is ponded for more than 6 months during most years. Permeability is very slow or slow throughout, and the available water capacity is moderate. The *Hydric Soils of Florida Handbook* (Hurt 2007) classifies Floridana mucky fine sand, depressional, as hydric.

21 – Immokalee sand

Immokalee sand is poorly drained and found in broad areas in flatwoods. Slopes range from 0 to 2 percent. The water table sits withinof 12 inches of the surface for 1 to 4 months in most years. Permeability is moderate in the subsoil and the available water capacity is low. The *Hydric Soils of Florida Handbook* (Hurt 2007) classifies Immokalee sand as hydric.

25 – Placid and Myakka fine sands, depressional

Placid and Myakka fine sands, depressional, are very poorly drained and found in depressions mostly in flatwoods. Slopes range from 0 to 2 percent. Placid soil is ponded for at least 6 months during most years. Permeability is rapid throughout and the available water capacity is moderate. The permeability is moderate or moderately rapid in the subsoil, and the available water capacity is low. The *Hydric Soils of Florida Handbook* (Hurt 2007) classifies Placid and Myakka fine sands, depressional, as hydric.

77 – Satellite sand

Satellite sand is somewhat poorly drained and found on low ridges and knolls in flatwoods. Slopes range from 0 to 2 percent. The water table sits at a depth of 12 to 40 inches for 2 to 6 months and below a depth of 40 inches in the dry seasons. Permeability is very rapid throughout and the available water capacity is very low throughout. The *Hydric Soils of Florida Handbook* (Hurt 2007) classifies Satellite sands as hydric.

Legend

Project Site

Preferred Alternative

NRCS Soils

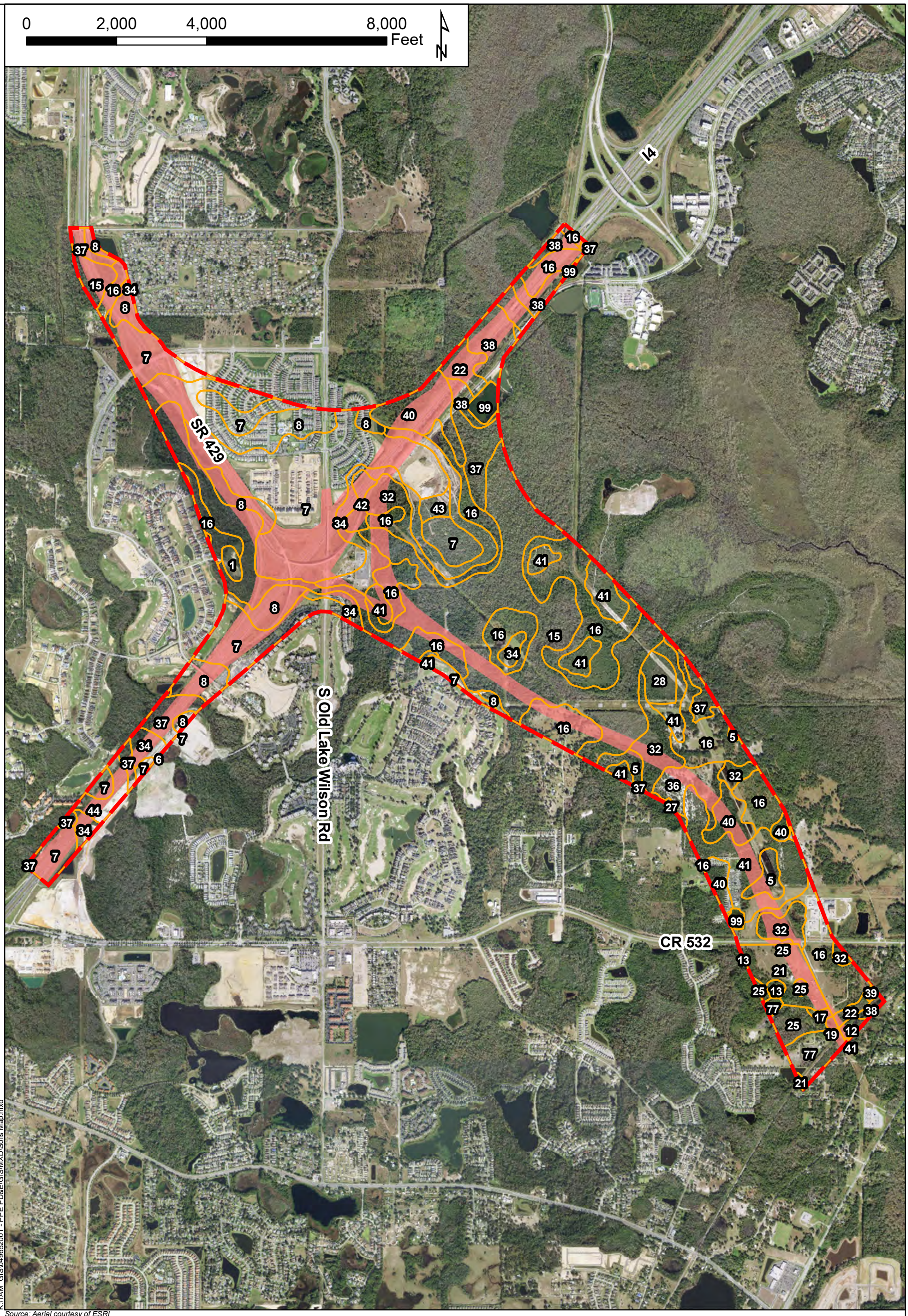
- 1:ADAMSVILLE SAND, 0 TO 2 PERCENT SLOPES
- 5:BASINGER FINE SAND, 0 TO 2 PERCENT SLOPES
- 6:BASINGER FINE SAND, DEPRESSIONAL, 0 TO 1 PERCENT SLOPES
- 7:CANDLER SAND, 0 TO 5 PERCENT SLOPES
- 8:CANDLER SAND, 5 TO 12 PERCENT SLOPES
- 12:FLORIDANA FINE SAND, FREQUENTLY PONDED, 0 TO 1 PERCENT SLOPES
- 13:SAMSULA MUCK, FREQUENTLY PONDED, 0 TO 1 PERCENT SLOPES
- 15:HONTOON MUCK, FREQUENTLY PONDED, 0 TO 1 PERCENT SLOPES
- 16:IMMOKALEE FINE SAND, 0 TO 2 PERCENT SLOPES
- 17:SMYRNA AND MYAKKA FINE SANDS
- 19:FLORIDANA MUCKY FINE SAND, FREQUENTLY PONDED, 0 TO 1 PERCENT SLOPES
- 21:IMMOKALEE SAND
- 22:MYAKKA FINE SAND, 0 TO 2 PERCENT SLOPES
- 25:PLACID AND MYAKKA FINE SANDS, DEPRESSIONAL
- 27:ONA FINE SAND, 0 TO 2 PERCENT SLOPES
- 28:PAOLA SAND, 0 TO 5 PERCENT SLOPES
- 32:PLACID FINE SAND, FREQUENTLY PONDED, 0 TO 1 PERCENT SLOPES
- 34:POMELLO FINE SAND, 0 TO 5 PERCENT SLOPES
- 36:POMPANO FINE SAND, 0 TO 2 PERCENT SLOPES
- 37:POMPANO FINE SAND, FREQUENTLY PONDED, 0 TO 1 PERCENT SLOPES
- 38:RIVIERA FINE SAND, 0 TO 2 PERCENT SLOPES
- 39:RIVIERA FINE SAND, FREQUENTLY PONDED, 0 TO 1 PERCENT SLOPES
- 40:SAMSULA MUCK, FREQUENTLY PONDED, 0 TO 1 PERCENT SLOPES
- 41:SATELLITE SAND, 0 TO 2 PERCENT SLOPES
- 42:SMYRNA FINE SAND, 0 TO 2 PERCENT SLOPES
- 43:ST. LUCIE FINE SAND, 0 TO 5 PERCENT SLOPES
- 44:TAVARES FINE SAND, 0 TO 5 PERCENT SLOPES
- 77:SATELLITE SAND, 0 TO 2 PERCENT SLOPES
- 99:WATER

FLORIDA'S TURNPIKE

Soils Map Legend

Poinciana Parkway Extension PD&E Study
From CR 532 to north of I-4/SR 429 Interchange
FPID: 446581-1-22-01
Osceola and Polk Counties, Florida

PROJECT NUMBER: 049652001	*APPENDIX A*		*OCTOBER 2022*



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Source: Aerial courtesy of ESRI

FLORIDA'S TURNPIKE

Soils Map

Poinciana Parkway Extension PD&E Study
From CR 532 to north of I-4/SR 429 Interchange
FPID: 446581-1-22-01
Osceola and Polk Counties, Florida

PROJECT NUMBER: 049652001	APPENDIX A	1 INCH = 2,000 FEET	OCTOBER 2022

APPENDIX B

Land Use Descriptions and Map

Upland Habitats and Land Uses

FLUCFCS: 112 (Mobile Home Units, Less Than Two Dwelling Units Per Acre)
This land use falls under the low density residential classification as it contains less than two (2) dwelling units per acre. A single, low density, mobile home land use area can be found in the southeastern corner of the proposed SR 429 extension section of the project study area. Mobile home units with less than two (2) dwelling units per acre comprise 1.2 acres (0.1 percent) of the project study area.

FLUCFCS: 118 (Rural Residential)
Rural residential land use falls under the low density residential classification as it contains less than two (2) dwelling units per acre. A single, small area can be found along the northwestern edge of the existing SR 429 section of the project study area and three (3) larger areas are scattered along the western half of the proposed SR 429 extension section of the study area. Rural residential land use comprises 50.1 acres (2.5 percent) of the project study area.

FLUCFCS: 121 (Fixed Single Family Units, Two to Five Dwelling Units Per Acre)
Fixed single family units land use falls under the medium density residential classification as it contains two (2) to five (5) dwelling units per acre. A single, small area can be found along the northwestern edge of the proposed SR 429 extension section of the project study area. Fixed single family units comprise 1.1 acres (0.1 percent) of the project study area.

FLUCFCS: 131 (Residential High Density, Fixed Single Family Units)
The residential high density, fixed single family units classification includes residential areas that contain six (6) or more dwelling units per acre. This land use is located northeast of the I-4 and SR 429 interchange. This area is developed with no natural habitat. Residential high density land use comprises 197.4 acres (10.0 percent) of the project study area.

FLUCFCS: 132 (Mobile Home Units, Six Or More Dwelling Units Per Acre)
Mobile home units with six (6) or more dwelling units per acre falls under the high density residential classification. This land use is concentrated in one (one) area within the proposed SR 429 extension section of the project study area, north of CR 532. Mobile home units with six (6) or more dwelling units per acre comprise 12.0 acres (0.6 percent) of the project study area.

FLUCFCS: 134 (Multiple Dwelling Units, High Rise)
This land use falls under the high density residential classification. These high rises are located along the western section of I-4 and along the east side of the existing section of SR 429. This area is developed with no natural habitat. The multiple dwelling units, high rise land use comprises 43.2 acres (2.2 percent) of the project study area.

FLUCFCS: 139 (Residential High Density, Under Construction)
This land use includes residential area with six (6) or more dwelling units per acre. This land use consists of a large area along I-4 that extends down into the proposed SR 429 extension section of the project study area. This area is developed with no natural habitat. High density, under construction, land use comprises 82.9 acres (4.2 percent) of the project study area.

FLUCFCS: 149 (Commercial and Services, Under Construction)
The commercial and services classification consists of land associated with the distribution of products and services, including secondary structures such as sheds, warehouses, office

buildings, driveways, parking lot, and landscaped areas. This land use is concentrated along the southwest of I-4 in the project study area. This area contains no natural habitat. Commercial and Services, under construction, comprises 19.2 acres (1.0 percent) of the project study area.

FLUCFCS: 182 (Golf Course)
This land use can be found along the northwest of I-4 and along the northwest edge of the proposed SR 429 extension section of the project study area. The golf course land use comprises 34.5 acres (1.7 percent) of the project study area.

FLUCFCS: 211 (Improved Pasture)
Improved pasture falls under the agriculture classification and is composed of land which has been cleared, tilled, reseeded with specific grasses, and regularly improved with brush control and fertilizer. This land use is dominated by bahiagrass (*Paspalum notatum*). This land use is concentrated in the southern end of the proposed SR 429 extension section of the project study area. Improved pasture comprises 54.0 acres (2.7 percent) of the project study area.

FLUCFCS: 212 (Unimproved Pasture)
Unimproved pasture falls under the agriculture classification and includes cleared land with major stands of trees and brush where native grasses have been allowed to develop. This land use is dominated by sabal palm (*Sabal palmetto*), scattered live oak (*Quercus virginiana*), saw palmetto (*Serenoa repens*), and bahiagrass. This land use is concentrated in the center of the proposed SR 429 extension section of the project study area. Unimproved pasture comprises 14.0 acres (0.7 percent) of the project study area.

FLUCFCS: 213 (Woodland Pastures)
Woodland pasture falls under the agriculture classification and includes forest lands that are being used as pastures. This land use is dominated by sabal palm, live oak, slash pine (*Pinus elliottii*), saw palmetto, and bahiagrass. This land use is concentrated in the southern half of the proposed SR 429 extension section of the project study area. Woodland pastures comprise 67.3 acres (3.4 percent) of the project study area.

FLUCFCS: 320 (Shrub and Brushland)
Shrub and brushland is characterized by saw palmetto, gallberry, wax myrtle, coastal scrub, and other shrubs and brush. This cover type is dominated by sand pine (*Pinus clausa*), sandhill oak (*Quercus inopina*), slash pine, saw palmetto, garberia (*Garberia heterophylla*), reindeer moss (*Cladonia spp*.), yellow star-grass (*Hypoxis curtissii*), coastalplain chaffhead (*Carphephorus corymbosus*), St. John's wort (*hypericum spp*.), common dayflower (*Commelina diffusa*), and Florida rosemary (*Ceratiola ericoides*). This cover type is scattered throughout the center of the proposed SR 429 extension section of the project study area. Upland shrub and brushland comprises 139.1 acres (7.0 percent) of the project study area.

FLUCFCS: 410 (Upland Coniferous Forest)
Upland coniferous forest includes any natural forest stand whose canopy is at least 66 percent dominated by coniferous species, excluding pine plantation. This land use is concentrated along the southeastern edge of the proposed SR 429 extension section of the project study area. This cover type is dominated by sand and slash pine with a live oak and saw palmetto component. Upland coniferous forest comprises 38.6 acres (1.9 percent) of the project study area.

FLUCFCS: 434 (Hardwood - Coniferous Mixed)
The hardwood-conifer mixed land use includes forested uplands in which neither upland conifers nor hardwoods achieve 66 percent crown canopy dominance. Dominant vegetation within these communities consists of slash pine, live oak, and cabbage palm, with saw palmetto and beauty berry (*Callicarpa americana*). Hardwood - conifer mixed communities are located in the proposed SR 429 extension section of the project study area, specifically in the north and along the eastern edge. Several communities are also scattered alongside the eastern portion of I-4. Hardwood-coniferous mixed communities comprise 49.8 acres (2.5 percent) of the project study area.

FLUCFCS: 441 (Coniferous Plantations)
This land use includes planted pine forests and is characterized by high tree density and uniform appearance. A small area of coniferous pine plantation can be found along the west side of the existing section of SR 429 within the project study area. The dominant vegetations is slash pine with an understory of young cabbage palm, red maple (*Acer rubrum*), and bluestem (*Andropogon spp*.). Coniferous plantations comprise 3.3 acres (0.2 percent) of the project study area.

FLUCFCS: 814 (Roads and Highways)
The roads and highways land use are transportation facilities used for the movement of people and goods and encompass all areas used for intersections and ROW, including pavement, medians, and buffers. Located throughout the project study area, this land use type includes the existing SR 429, I-4, ROW, and associated roadways. Roads and highways comprise 297.2 acres (15.0 percent) of the project study area.

FLUCFCS: 830 (Utilities)
This land use includes power generating facilities and water treatment plants and their related facilities, such as transmission lines for electric generation plants and aeration fields for sewage treatment sites. Small facilities or those associated with an industrial, commercial, or extractive land use are included within these larger respective categories. In the project study area, this land use consists of a gas pipeline facility found within the proposed SR 429 extension section, directly north of CR 532. This area is developed with no natural habitat. Utilities land use comprises 10.0 acres (0.5 percent) of the project study area.

FLUCFCS: 831 (Electrical Power Facilities)
The electrical power facilities land use falls under the utilities classification and includes hydropower, thermal, nuclear, gas turbine plants, transformer yards, sub-stations, etc. This land use mostly consists of electrical line ROW and runs along the southern side of the eastern portion of I-4 and down the center of the proposed SR 429 extension section of the project study area. The Davenport Compressor Station, owned by Florida Gas Transmission Company, is located directly southeast of the SR 429 and I-4 interchange. Electrical power facilities land use comprises 106.6 acres (5.4 percent) of the project study area.

Legend

- Project Site
- Conservation Easements
- Preferred Alternative

FLUCFCS Description

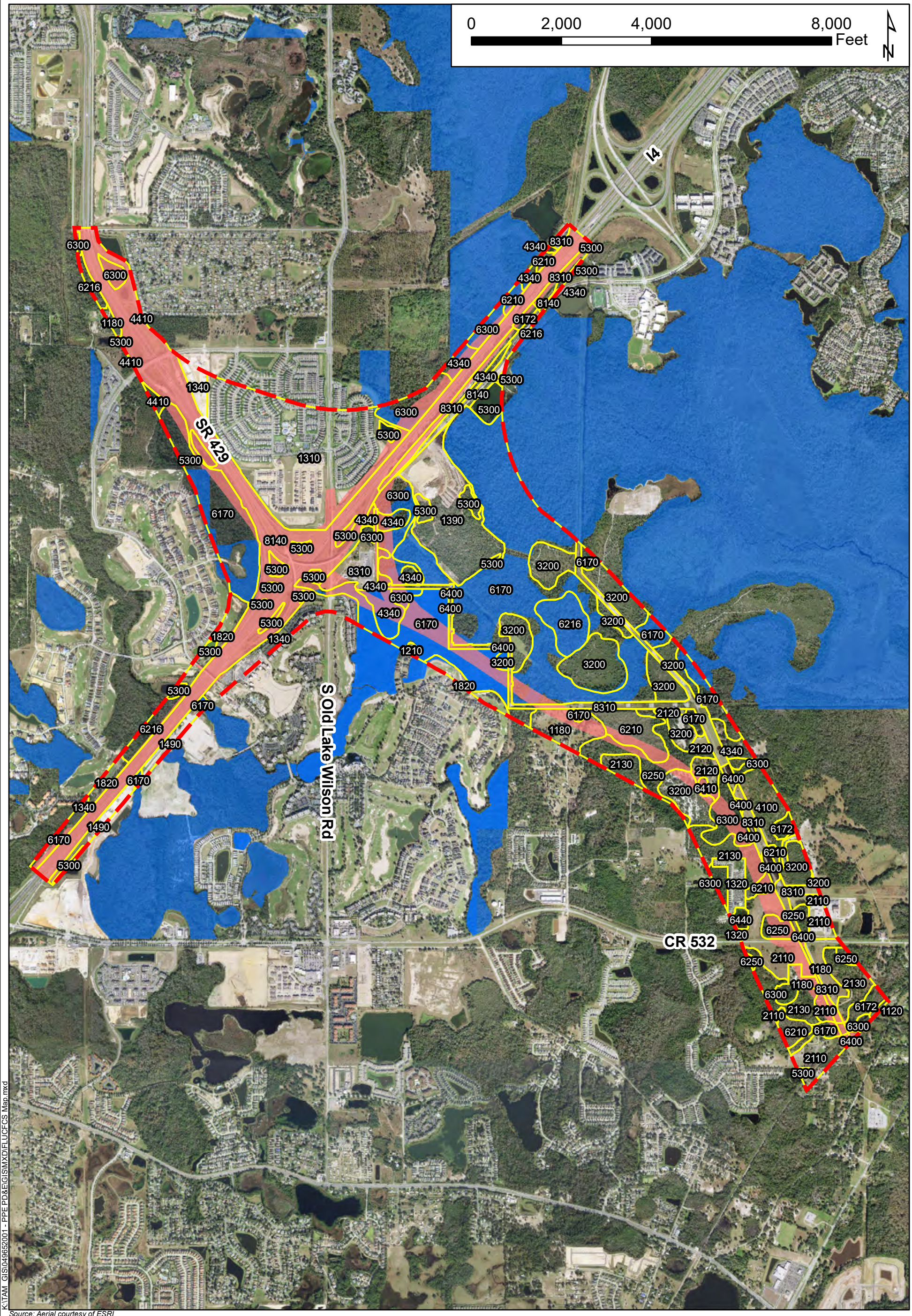
- 1120: MOBILE HOME UNITS
- 1180: RURAL RESIDENTIAL
- 1210: FIXED SINGLE FAMILY UNITS
- 1310: RESIDENTIAL HIGH DENSITY - FIXED SINGLE FAMILY UNITS
- 1320: MOBILE HOME UNITS
- 1390: RESIDENTIAL HIGH DENSITY - UNDER CONSTRUCTION
- 1490: COMMERCIAL AND SERVICES UNDER CONSTRUCTION.
- 1820: GOLF COURSE
- 2110: IMPROVED PASTURES
- 2120: UNIMPROVED PASTURES
- 2130: WOODLAND PASTURES
- 3200: UPLAND SHRUB AND BRUSHLAND
- 4100: UPLAND CONIFEROUS FORESTS
- 4110: PINE FLATWOODS
- 4340: UPLAND MIXED CONIFEROUS / HARDWOOD
- 4410: CONIFEROUS PLANTATIONS
- 5300: RESERVOIRS
- 6170: MIXED WETLAND HARDWOODS
- 6172: MIXED SHRUBS
- 6210: CYPRESS
- 6216: CYPRESS - MIXED HARDWOODS
- 6250: WET PINELANDS HYDRIC PINE
- 6300: WETLAND FORESTED MIXED
- 6400: VEGETATED NON-FORESTED WETLANDS
- 6410: FRESHWATER MARSHES
- 6440: EMERGENT AQUATIC VEGETATION
- 8140: ROADS AND HIGHWAYS
- 8310: ELECTRICAL POWER FACILITIES

FLORIDA'S TURNPIKE

Land Use and Conservation Easement Map Legend

Poinciana Parkway Extension PD&E Study
From CR 532 to north of I-4/SR 429 Interchange
FPID: 446581-1-22-01
Osceola and Polk Counties, Florida

PROJECT NUMBER: 049652001	*APPENDIX B*		*OCTOBER 2022*



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Source: Aerial courtesy of ESRI

FLORIDA'S TURNPIKE

Land Use and Conservation Easement Map

Poinciana Parkway Extension PD&E Study
From CR 532 to north of I-4/SR 429 Interchange
FPID: 446581-1-22-01
Osceola and Polk Counties, Florida

PROJECT NUMBER: 049652001	APPENDIX B	1 INCH = 2,000 FEET	OCTOBER 2022

APPENDIX C

WETLAND AND SURFACE WATER DESCRIPTIONS AND MAP

Wetland and Surface Water Habitats

Name: **SW 01**
FLUCFCS: **530** **(Reservoirs)**
USFWS: **PUBHx** **(Palustrine, Unconsolidated Bottom, Permanently Flooded, excavated)**

Reservoirs are artificial impoundments of water. These waterbodies are scattered along I-4 and the existing section of SR 429 within the project study area. Dominant vegetation within the littoral edge of the reservoirs includes Mexican primrose willow, Peruvian primrose willow, Carolina willow, Brazilian pepper, cattail, and frogfruit. Reservoirs comprise 42.2 acres (2.1 percent) of the project study area.

Name: **WL 01**
FLUCFCS: **617** **(Mixed Wetland Hardwoods)**
USFWS: **PFO1C** **(Palustrine, Forested, Broad-leaved Deciduous, Seasonally Flooded)**

Mixed wetland hardwood habitats are composed of a large variety of hardwood species that are tolerant of hydric conditions. The majority of this habitat type is located within the northern half of the proposed SR 429 extension section of the project study area. However, there is also a large community along the west side of the existing SR 429 section located within the project study area. Vegetation observed within this wetland type includes sweetgum (*Liquidambar styraciflua*), cabbage palm, laurel oak (*Quercus laurifolia*), bald cypress (*Taxodium distichum*), red maple, water oak (*Quercus nigra*), and blackgum (*Nyssa sylvatica*). Mixed wetland hardwood communities comprise 447.5 acres (22.6 percent) of the project study area.

Name: **WL 02**
FLUCFCS: **621** **(Cypress)**
USFWS: **PFO2F** **(Palustrine, Forested, Needle-leaved Deciduous, Semi-permanently Flooded)**

This habitat type is dominated by pond cypress or bald cypress and their respective associates. The majority of the cypress community can be found throughout the proposed SR 429 extension section of the project study area; however, there are also smaller communities along I-4 and an isolated community along the northwest edge of the existing SR 429 section of the project study area. Other species observed in this habitat include torpedograss (*Panicum repens*) and maidencane (*Panicum hemitomon*). Cypress communities comprise 87.6 acres (4.4 percent) of the project study area.

Name: **WL 03**
FLUCFCS: **625** **(Hydric Pine Flatwoods)**
USFWS: **PFO4C** **(Palustrine, Forested, Needle-leaved Evergreen, Seasonally Flooded)**

Hydric pine flatwoods are characterized by a sparse to moderate canopy of slash pine and an understory of grasses, forbs, and sparse saw palmetto. Other species observed in this habitat include water oak, loblolly bay (*Gordonia lasianthus*), maidencane, torpedograss, and wax myrtle (*Morella cerifera*). This habitat can be found throughout the southeastern half of the proposed SR 429 extension section of the project study area. Hydric pine flatwoods comprise 48.7 acres (2.5 percent) of the project study area.

Name: **WL 04**
FLUCFCS: **630** **(Wetland Forested Mixed)**
USFWS: **PFO1/3** **(Palustrine, Forested, Broad-leaved Deciduous, Broad-leaved Evergreen)**

This habitat type includes mixed wetland forest communities in which neither hardwood nor conifers dominate the canopy. These communities are located along the eastern section of I-4, the northern terminus of the project study area, and in the southern half of the proposed SR 429 extension section of the project study area. Species observed in this habitat include red maple, slash pine, wax myrtle, sweet gum, cinnamon fern (*Osmunda cinnamomea*), water oak, sweetbay (*Magnolia virginiana*), and pop ash (*Fraxinus caroliniana*). Wetland forested mixed communities comprise 102.8 acres (5.2 percent) of the project study area.

Name: **WL 05**
FLUCFCS: **640** **(Vegetated Non-Forested Wetlands)**
USFWS: **PEM1C** **(Palustrine, Emergent, Persistent, Seasonally Flooded)**

This habitat type includes marshes and seasonally flooded basins and meadows. These communities can be found scattered throughout the center of the proposed SR 429 extension section of the project study area. Dominant vegetation within this habitat includes torpedograss, Peruvian primrose willow, Carolina willow, and cattail. Vegetated non-forested wetlands comprise 11.6 acres (0.6 percent) of the project study area.

Name: **WL 06**
FLUCFCS: **641** **(Freshwater Marshes)**
USFWS: **PEM1F** **(Palustrine, Emergent, Persistent, Semi-permanently Flooded)**

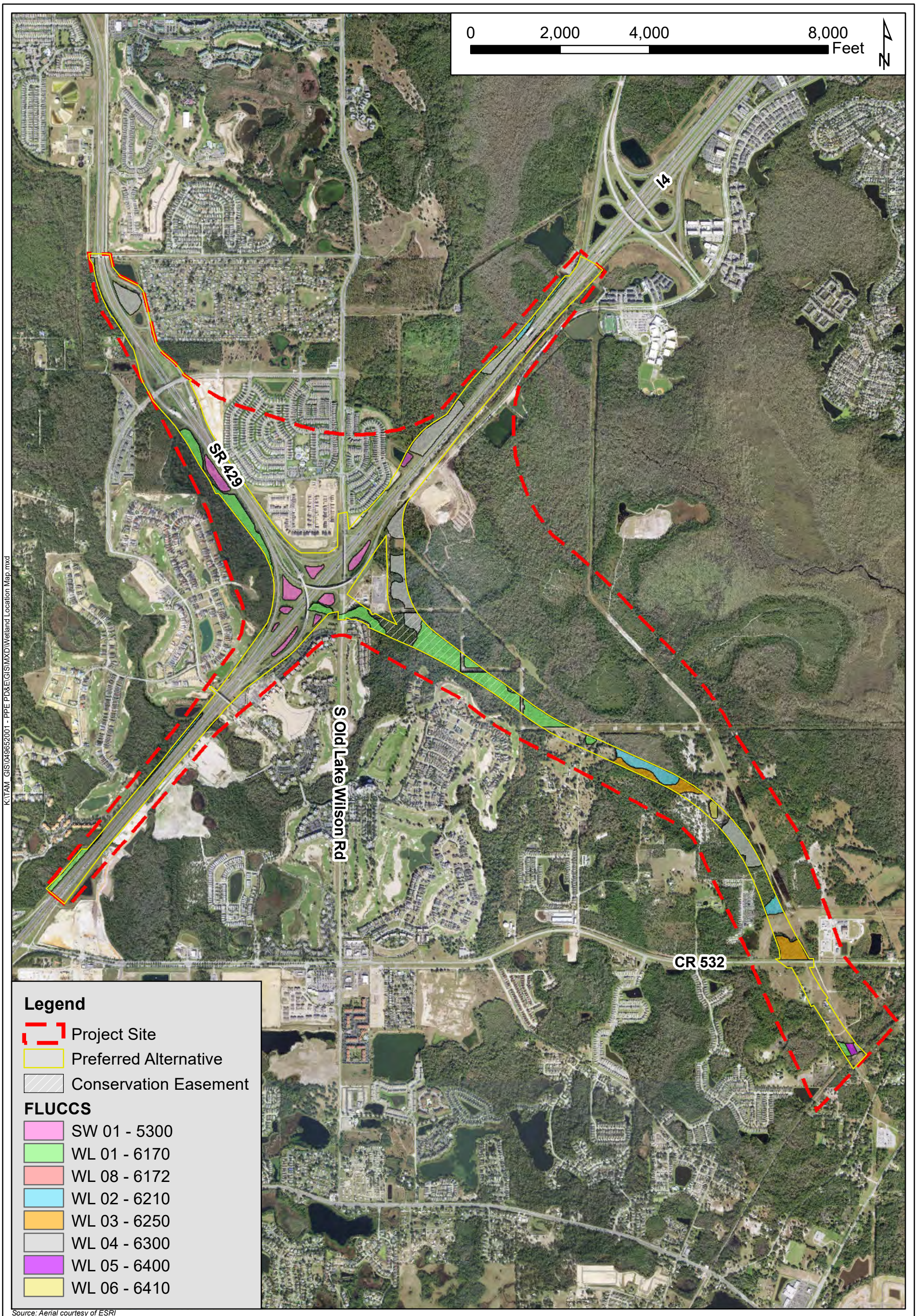
Freshwater marsh is characterized by its lacks of tree cover and falls under the vegetated non-forested wetlands classification. There is a single freshwater marsh located in the center of the proposed SR 429 extension section of the project study area. Dominant vegetation consists of marshpennywort (*hydrocotyl* spp.), smartweed (*Persicaria spp*.), elephant ear, pickerelweed (*Pontederia cordata*), and Peruvian primrose willow. Freshwater marshes comprise 1.6 acres (0.1 percent) of the project study area.

Name: **WL 07**
FLUCFCS: **644** **(Emergent Aquatic Vegetation)**
USFWS: **PEM1Fx** **(Palustrine, Emergent, Persistent, Semi-permanently Flooded, excavated)**

This habitat type is characterized by floating vegetation. There is a single emergent aquatic vegetation community located along the southwestern edge of the proposed SR 429 extension section of the project study area. Dominant vegetation consists of water lily (*Nymphaea odorata*), duckweed (*Lemna minor*), water lettuce (*Pistia stratiotes*), torpedograss, cattail. Emergent aquatic vegetation communities comprise 3.4 acres (0.2 percent) of the project study area.

Name: **WL 08**
FLUCFCS: **6172 (Mixed Wetland Shrubs)**
USFWS: **PSSC (Palustrine, Scrub-Shrub, Broad-leaved Deciduous, Seasonally Flooded)**

Mixed wetland shrub habitats are composed of a shrub species typically found on edge habitat and that are tolerant of hydric conditions. This habitat is found adjacent to I-4 to the east of SR 429 and in the southern section of the project study area. Vegetation observed within this wetland type was dominated by two (2) species including Carolina willow and Peruvian primrose willow. Mixed wetland shrub communities comprise 13.8 acres (0.7 percent) of the project study area.



K:\TAM_GIS\049652001 - PPE PD&E\GIS\MXD\Wetland Location Map.mxd

Source: Aerial courtesy of ESRI

FLORIDA'S TURNPIKE

Wetlands and Surface Waters Map

Poinciana Parkway Extension Connector PD&E Study
From CR 532 to north of I-4/SR 429 Interchange
FPID: 446581-1-22-01
Osceola and Polk Counties, Florida

PROJECT NUMBER: 049652001	*APPENDIX C*	1 INCH = 2,000 FEET	*JUNE 2022*

APPENDIX D

UNIFORM MITIGATION ASSESSMENT METHODOLOGY FORMS

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

Site/Project Name	Application Number	Assessment Area Name or Number
PPE	TBD	Wetland 1 (Representative of 617)

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
617 Mixed Wetland Hardwoods	N/A	Impact (Direct)	26.05 ac

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Reedy Creek (3170)	Class I	N/A

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

Wetland 1 (representative) is a forested wetland contiguously connected to Davenport Creek Swamp, ultimately outflowing to Reedy Creek.

Assessment area description

This system contained a hardwood dominant canopy including species such as sweetgum (*Liquidambar styraciflua*), black gum (*Nyssa sylvatica*), laurel oak (*Quercus laurifolia*), water oak (*Quercus nigra*), red maple (*Acer rubrum*), and bald cypress (*Taxodium distichum*). The understory was marginal and consisted primarily of cabbage palm. Groundcover species consisted of St. John's Wort (*Hypericum* sp.), dollarweed (*Hydrocotyle* sp.), royal fern *(Osmunda regalis*), and broomsedge (*Andropogon* sp.).

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
Powerline, I-4, and Reunion Resort Golf Club.	Not Unique

Functions	Mitigation for previous permit/other historic use
Foraging and nesting habitat for wading birds food chain support.	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Amphibians, reptiles, small mammals and wading birds	Wood stork - T; State listed wading birds

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

None

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
S. Johnson and J. Hemphill	Sep-21

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

Site/Project Name	Application Number	Assessment Area Name or Number
PPE	TBD	Wetland 1 (Representative of 617)
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Impact (Direct)	J. Hemphill	Sep-21

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

		w/o pres or current	with
.500(6)(a) Location and Landscape Support	Wetland 1 (representative) is a forested mixed wetland contiguous with the Davenport Creek swamp and ultimately outflowing into Reedy Creek. The system is adjacent to the Reunion Resort and Country Club and bisected by I-4.	8	0
.500(6)(b)Water Environment (n/a for uplands)	The hydrology of Wetland 1 has been marginally impacted by surrounding development and the construction of a powerline; however, the wetland appeared to have clear seasonal high-water indicators and appeared in good condition.	8	0
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	This system contained a hardwood dominant canopy including species such as sweetgum, black gum, laurel oak, water oak, red maple, and bald cypress . The understory was marginal and consisted primarily of cabbage palm. Groundcover species consisted of St. John's Wort, dollarweed, royal fern, and broomsedge.	9	0

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.83	0

Delta = [with-current]
-0.83

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

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

For impact assessment areas
FL = delta x acres = 21.62

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

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

Site/Project Name	Application Number	Assessment Area Name or Number
PPE	TBD	Wetland 2 (Representative of 621)

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
621 Cypress	N/A	Impact (Direct)	14.88 ac

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Reedy Creek (3170)	Class I	N/A

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

Wetland 2 (representative) is a typical cypress dome contiguously connected to Devenport Creek Swamp, ultimately outflowing to Reedy Creek.

Assessment area description

This system is a typical cypress dome consisting primarily of bald and/or pond cypress (*Taxodium* spp.). Standing water prevents much growth in the understory; however, some groundcover was observed and included torpedograss (*Panicum repens*) and maidencane (*Panicum hemitomon*).

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
Powerline, I-4, and Reunion Resort Golf Club.	Not Unique

Functions	Mitigation for previous permit/other historic use
Foraging and nesting habitat for wading birds food chain support.	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Amphibians, reptiles, small mammals and wading birds	Wood stork - T; State listed wading birds

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

None

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
S. Johnson and J. Hemphill	Sep-21

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

Site/Project Name	Application Number	Assessment Area Name or Number
PPE	TBD	Wetland 2 (Representative of 621)
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Impact (Direct)	J. Hemphill	Sep-21

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

.500(6)(a) Location and Landscape Support	w/o pres or current: 8	with: 0	Wetland 2 (representative) is a typical cypress dome contiguously connected to Devenport Creek Swamp, ultimately outflowing to Reedy Creek. A powerline bisects the 621 systems. I-4 bisects the system as a whole. Generally isolated from development.
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 9	with: 0	The hydrology of Wetland 2 has been marginally impacted by surrounding development and the construction of a powerline; however, the wetland appeared to have clear seasonal high-water indicators and appeared in good condition. Standing water was present during wetland observation.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 9	with: 0	Wetland 2 is primarily occupied by pond cypress, bald cypress, torpedo grass, and maidencane.

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.87	0

Delta = [with-current]
-0.87

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

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

For impact assessment areas
FL = delta x acres = 12.95

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

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

Site/Project Name	Application Number	Assessment Area Name or Number
PPE	TBD	Wetland 3 (Representative of 625)

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
625 Hydric Pine Flatwoods	N/A	Impact (Direct)	12.82 ac

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Reedy Creek (3170)	Class I	N/A

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

Wetland 3 (representative) is a forested wetland contiguously connected to Davenport Creek Swamp, ultimately outflowing to Reedy Creek

Assessment area description

This system consists of primarily a slash pine (*Pinus elliottii*) overstory with a understory of water oak (*Quercus nigra*), loblolly bay (*Gordonia lasianthus*), sweetbay (*Magnolia virginiana*), dahoon holly (*Ilex cassine*), and wax myrtle (*Myrica cerifera*). The groundcover consisted of torpedograss (*Panicum repens*) and maidencane (*Panicum hemitomon*).

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
Powerline, I-4, and Reunion Resort Golf Club.	Not Unique

Functions	Mitigation for previous permit/other historic use
Foraging and nesting habitat for wading birds food chain support.	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Amphibians, reptiles, small mammals and wading birds	Wood stork - T; State listed wading birds

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

None

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
S. Johnson and J. Hemphill	Sep-21

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

Site/Project Name	Application Number	Assessment Area Name or Number
PPE	TBD	Wetland 3 (Representative of 625)
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact (Direct)		

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

.500(6)(a) Location and Landscape Support	w/o pres or current: 8	with: 0
Wetland 3 (representative) is a forested mixed wetland contiguous with the Davenport Creek swamp and ultimately outflowing into Reedy Creek. A powerline bisects the 621 systems. I-4 bisects the system as a whole. Generally isolated from development.		
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 9	with: 0
The hydrology of Wetland 3 has been marginally impacted by surrounding development and the construction of a powerline; however, the wetland appeared to have clear seasonal high-water indicators and appeared in good condition.		
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 9	with: 0
This system consists of primarily a slash pine overstory with a understory of water oak, loblolly bay, sweetbay magnolia, dahoon holly, and wax myrtle. The groundcover consisted of torpedograss and maidencane.		

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.87	0

Delta = [with-current]
-0.87

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

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

For impact assessment areas
FL = delta x acres = 11.15

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

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

Site/Project Name	Application Number	Assessment Area Name or Number
PPE	TBD	Wetland 4 (Representative of 630)

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
630 Wetland Forested Mixed	N/A	Impact (Direct)	30.70 ac

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Reedy Creek (3170)	Class I	N/A

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

Wetland 4 (representative) is a forested wetland contiguously connected to Davenport Creek Swamp, ultimately outflowing to Reedy Creek.

Assessment area description

This system is a mix of canopy species consisting of red maple (*Acer rubrum*), slash pine (*Pinus ellottii*), sweetbay (*Magnolia virginiana*), wax myrtle (*Myrica cerifera*), sweet gum (*Liquidambar styraciflua*), cinnamon fern (*Osmundastrum cinnamomeum*), water oak (*Quercus nigra*), and popash *(Fraxinus caroliniana*).

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
Powerline, I-4, and Reunion Resort Golf Club.	Not Unique

Functions	Mitigation for previous permit/other historic use
Foraging and nesting habitat for wading birds food chain support.	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Amphibians, reptiles, small mammals and wading birds	Wood stork - T; State listed wading birds

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

None

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
S. Johnson and J. Hemphill	Sep-21

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

Site/Project Name	Application Number	Assessment Area Name or Number
PPE	TBD	Wetland 4 (Representative of 630)
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Impact (Direct)	J. Hemphill	Sep-21

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

.500(6)(a) Location and Landscape Support w/o pres or current: 8 — with: 0	Wetland 4 (representative) is a forested mixed wetland contiguous with the Davenport Creek swamp and ultimately outflowing into Reedy Creek.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current: 8 — with: 0	The hydrology of Wetland 4 has been marginally impacted by surrounding development and the construction of a powerline; however, the wetland appeared to have clear seasonal high-water indicators and appeared in good condition.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current: 9 — with: 0	Wetland 4 is a mix of red maple, slash pine, sweetbay magnolia, wax myrtle, sweet gum, cinnamon fern, water oak, and popash.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres	with
0.83	0

Delta = [with-current]
-0.83

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

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

For impact assessment areas
FL = delta x acres = 25.48

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

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

Site/Project Name	Application Number	Assessment Area Name or Number
PPE	TBD	Wetland 5 (Representative of 640)

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
640 Vegetated Non-Forested Wetland	N/A	Impact (Direct)	1.33 ac

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Reedy Creek (3170)	Class I	N/A

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

Wetland 5 (representative) is a non-forested wetland previously impacted by the construction of a powerline contiguously connected to Davenport Creek Swamp, ultimately outflowing to Reedy Creek.

Assessment area description

This system consist of area disturbed by the construction of powerline. Vegetation consists of Carolina willow (*Salix caroliniana*), Peruvian primrose willow (*Ludwigia peruviana*), pickerelweed (*Pontedaria cordata*), dollarweed (*hydrocotyle* sp.), and smartweed (*Polygonum hydropiperoides*).

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
Powerline	Not Unique

Functions	Mitigation for previous permit/other historic use
Foraging and nesting habitat for wading birds food chain support.	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Amphibians, reptiles, small mammals and wading birds	Wood stork - T; State listed wading birds

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

None

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
S. Johnson and J. Hemphill	Sep-21

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

Site/Project Name	Application Number	Assessment Area Name or Number
PPE	TBD	Wetland 5 (Representative of 640)
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Impact (Direct)	J. Hemphill	Sep-21

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

.500(6)(a) Location and Landscape Support	w/o pres or current: 4	with: 0
Wetland 5 (representative) is a non-forested wetland previously impacted by the construction of a powerline contiguously connected to Davenport Creek Swamp, ultimately outflowing to Reedy Creek.		
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 6	with: 0
The hydrology of Wetland 5 has been impacted by the construction of a powerline. Culverts have been installed underneath the powerline road and powerline pole pads have been constructed within the wetlands. Seasonal high-water indicators were visible and standing water was present.		
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 5	with: 0
Wetland 5 has been impacted by disturbance and contains approximately 50% exotics. Vegetation included Carolina willow, Peruvian primrose willow, pickerelweed, dollarweed, and smartweed.		

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.50	0

Delta = [with-current]
-0.50

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

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

For impact assessment areas
FL = delta x acres = 0.67

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

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

Site/Project Name	Application Number	Assessment Area Name or Number
PPE	TBD	Wetland 6 (Representative)

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
641 Freshwater Marsh	N/A	Impact (Direct)	1.43

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Reedy Creek (3170)	Class I	N/A

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

Wetland 6 (representative) is an isolated herbaceous wetland. It is non-contiguous with Davenport Creek Swamp.

Assessment area description

This system consists of spare slash pine canopy with primarily a spikerush (*Eleocharis palustris*) dominance.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
Primarily distant from any development.	Not Unique

Functions	Mitigation for previous permit/other historic use
Foraging and nesting habitat for wading birds food chain support.	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Amphibians, reptiles, small mammals and wading birds	Wood stork - T; State listed wading birds

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

None

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
S. Johnson and J. Hemphill	Sep-21

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

Site/Project Name	Application Number	Assessment Area Name or Number
PPE	TBD	Wetland 6 (Representative)
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Impact (Direct)	J. Hemphill	Sep-21

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

.500(6)(a) Location and Landscape Support	w/o pres or current	with	Wetland 6 (representative) is an isolated herbaceous wetland. It is non-contiguous with Davenport Creek Swamp.
	9	0	
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current	with	The hydrology of Wetland 6 is primarily intact in its' natural condition. No major impact from development. Appears in good health with strong seasonal high water indicators.
	9	0	
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current	with	Wetland 6 consists of sparse slash pine with a dominance of spikerush.
	9	0	

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.90	0

Delta = [with-current]
-0.90

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

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

For impact assessment areas
FL = delta x acres = 1.29

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

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

Site/Project Name	Application Number	Assessment Area Name or Number
PPE	TBD	Wetland 8 (Representative)

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
6172 Wetland Shrub	N/A	Impact (Direct)	1.33

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Reedy Creek (3170)	Class I	N/A

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

Wetland 8 (representative) is a shrub wetland. It is connected to the mixed wetland forested system in some areas and connects to Davenport Creek Swamp, and ultimately flowing to Reedy Creek.

Assessment area description

This system is dominated by Pervuian primrose willow (*Ludwigia peruviana*) and Carolina willow (*Salix caroliniana*).

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
I-4	Not Unique

Functions	Mitigation for previous permit/other historic use
Foraging and nesting habitat for wading birds food chain support.	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Amphibians, reptiles, small mammals and wading birds	Wood stork - T; State listed wading birds

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

None

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
S. Johnson and J. Hemphill	Sep-21

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

Site/Project Name	Application Number	Assessment Area Name or Number
PPE	TBD	Wetland 8 (Representative)
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Impact (Direct)	J. Hemphill	Sep-21

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

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

.500(6)(a) Location and Landscape Support	w/o pres or current: 6	with: 0	Wetland 8 (representative) is directly adjacent to I-4 and connects to a forested wetland system, part of the Davenport Creek Swamp, which flows to Reedy Creek.
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 7	with: 0	The hydrology of Wetland 8 has been impacted by the construction of I-4 and shows signs of disturbance at the edge but does connect hydrologically under the interstate.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 7	with: 0	Wetland 8 is dominated by Carolina willow and Peruvian primrose willow (0-25% exotics).

Score = sum of above scores/30 (if uplands, divide by 20)		
current or w/o pres: 0.667	with: 0	

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

For impact assessment areas
FL = delta x acres = 0.89

Delta = [with-current]
-0.667

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

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

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

Site/Project Name	Application Number	Assessment Area Name or Number
PPE	TBD	Wetland CE (Representative of 617, 621, 630 with CE)

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
617 Mixed Wetland Hardwoods; 621 Cypress 630 Wetland Forested Mixed	N/A	Impact (Direct)	44.73 ac

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Reedy Creek (3170)	Class I	N/A

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

Wetland CE (representative) is a forested wetland contiguously connected to Davenport Creek Swamp, ultimately outflowing to Reedy Creek.

Assessment area description

These systems contained a hardwood dominant canopy including species such as sweetgum (*Liquidambar styraciflua*), black gum (*Nyssa sylvatica*), laurel oak (*Quercus laurifolia*), water oak (*Quercus nigra*), red maple (*Acer rubrum*), and bald cypress (*Taxodium distichum*); cypress dome; and red maple (Acer rubrum), slash pine (Pinus ellottii), sweetbay (Magnolia virginiana), wax myrtle (Myrica cerifera), sweet gum (Liquidambar styraciflua), cinnamon fern (Osmundastrum cinnamomeum), water oak (Quercus nigra), and popash (Fraxinus caroliniana).

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
Powerline, I-4, and Reunion Resort Golf Club.	This portion of the wetland is located in a conservation easement.

Functions	Mitigation for previous permit/other historic use
Foraging and nesting habitat for wading birds food chain support.	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Amphibians, reptiles, small mammals and wading birds	Wood stork - T; State listed wading birds

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

None

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
S. Johnson and J. Hemphill	Sep-21

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

Site/Project Name	Application Number	Assessment Area Name or Number
PPE	TBD	Wetland CE (Representative of 617, 621, 630 with CE)
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Impact (Direct)	J. Hemphill	Sep-21

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

		w/o pres or current	with
.500(6)(a) Location and Landscape Support	Wetland 1 (representative) is a forested mixed wetland contiguous with the Davenport Creek swamp and ultimately outflowing into Reedy Creek and is part of a conservation easement. The system is adjacent to the Reunion Resort and Country Club and bisected by I-4.	9	0
.500(6)(b)Water Environment (n/a for uplands)	The hydrology of Wetland 1 has been marginally impacted by surrounding development and the construction of a powerline; however, the wetland appeared to have clear seasonal high-water indicators and appeared in good condition. Is located within a conservation easement.	9	0
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	This system contained a hardwood dominant canopy including species such as sweetgum, black gum, laurel oak, water oak, red maple, and bald cypress . The understory was marginal and consisted primarily of cabbage palm. Groundcover species consisted of St. John's Wort, dollarweed, royal fern, and broomsedge. Is located within a conservation easement.	9	0

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.90	0

Delta = [with-current]
-0.90

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

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

For impact assessment areas
FL = delta x acres = 40.26

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

APPENDIX E

FNAI BIODIVERSITY MATRIX REPORT

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

Florida Natural Areas Inventory

Biodiversity Matrix Query Results

UNOFFICIAL REPORT

Created 2/22/2022

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

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

Report for 6 Matrix Units: 42537 , 42538 , 42909 , 42910 , 43282 , 43283

Descriptions

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

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

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

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

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

Matrix Unit ID: 42537

0 **Documented** Elements Found

1 **Documented-Historic** Element Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Chionanthus pygmaeus Pygmy Fringe Tree	G2G3	S2S3	LE	E

8 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Bonamia grandiflora Florida Bonamia	G3	S3	LT	E
Mesic flatwoods	G4	S4	N	N
Mycteria americana	G4	S2	LT	FT

Wood Stork				
Nolina brittoniana Britton's Beargrass	G3	S3	LE	E
Plestiodon reynoldsi Sand Skink	G2	S2	LT	FT
Polygonella myriophylla Small's Jointweed	G3	S3	LE	E
Scrub	G2	S2	N	N
Stenacron floridense A Mayfly	G3G4	S3S4	N	N

Matrix Unit ID: 42538

0 **Documented** Elements Found

6 **Documented-Historic** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Bonamia grandiflora Florida Bonamia	G3	S3	LT	E
Chionanthus pygmaeus Pygmy Fringe Tree	G2G3	S2S3	LE	E
Gopherus polyphemus Gopher Tortoise	G3	S3	C	ST
Nolina brittoniana Britton's Beargrass	G3	S3	LE	E
Sceloporus woodi Florida Scrub Lizard	G2G3	S2S3	N	N
Scrub	G2	S2	N	N

4 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Mesic flatwoods	G4	S4	N	N
Mycteria americana Wood Stork	G4	S2	LT	FT
Sandhill	G3	S2	N	N
Stenacron floridense A Mayfly	G3G4	S3S4	N	N

Matrix Unit ID: 42909

1 **Documented** Element Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Scrub	G2	S2	N	N

6 **Documented-Historic** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Aphelocoma coerulescens Florida Scrub-Jay	G2	S2	LT	FT
Gopherus polyphemus Gopher Tortoise	G3	S3	C	ST
Lechea cernua Nodding Pinweed	G3	S3	N	T
Plestiodon egregius lividus Blue-tailed Mole Skink	G5T2	S2	LT	FT
Plestiodon reynoldsi Sand Skink	G2	S2	LT	FT

Polygonella myriophylla Small's Jointweed	G3	S3	LE	E

4 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Chionanthus pygmaeus Pygmy Fringe Tree	G2G3	S2S3	LE	E
Mesic flatwoods	G4	S4	N	N
Mycteria americana Wood Stork	G4	S2	LT	FT
Polygala lewtonii Lewton's Polygala	G2G3	S2S3	LE	E

Matrix Unit ID: 42910

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

5 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Aphelocoma coerulescens Florida Scrub-Jay	G2	S2	LT	FT
Chionanthus pygmaeus Pygmy Fringe Tree	G2G3	S2S3	LE	E
Mesic flatwoods	G4	S4	N	N
Mycteria americana Wood Stork	G4	S2	LT	FT
Scrub	G2	S2	N	N

Matrix Unit ID: 43282

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

8 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Aphelocoma coerulescens Florida Scrub-Jay	G2	S2	LT	FT
Chionanthus pygmaeus Pygmy Fringe Tree	G2G3	S2S3	LE	E
Mesic flatwoods	G4	S4	N	N
Mycteria americana Wood Stork	G4	S2	LT	FT
Plestiodon egregius lividus Blue-tailed Mole Skink	G5T2	S2	LT	FT
Plestiodon reynoldsi Sand Skink	G2	S2	LT	FT
Polygonella myriophylla Small's Jointweed	G3	S3	LE	E
Scrub	G2	S2	N	N

Matrix Unit ID: 43283

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

4 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Aphelocoma coerulescens Florida Scrub-Jay	G2	S2	LT	FT
Mesic flatwoods	G4	S4	N	N
Mycteria americana Wood Stork	G4	S2	LT	FT
Scrub	G2	S2	N	N

Matrix Unit IDs: 42537 , 42538 , 42909 , 42910 , 43282 , 43283

64 **Potential** Elements Common to Any of the 6 Matrix Units

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Andropogon arctatus Pine-woods Bluestem	G3	S3	N	T
Aphelocoma coerulescens Florida Scrub-Jay	G2	S2	LT	FT
Athene cunicularia floridana Florida Burrowing Owl	G4T3	S3	N	SSC
Bird Rookery	G5	SNR	N	N
Bonamia grandiflora Florida Bonamia	G3	S3	LT	E
Calamintha ashei Ashe's Savory	G3	S3	N	T
Calopogon multiflorus Many-flowered Grass-pink	G2G3	S2S3	N	T
Carex chapmanii Chapman's Sedge	G3	S3	N	T
Centrosema arenicola Sand Butterfly Pea	G2Q	S2	N	E
Chionanthus pygmaeus Pygmy Fringe Tree	G2G3	S2S3	LE	E
Cladonia perforata Perforate Reindeer Lichen	G1	S1	LE	E
Clitoria fragrans Scrub Pigeon-wing	G3	S3	LT	E
Coelorachis tuberculosa Piedmont Jointgrass	G3	S3	N	T
Conradina brevifolia Short-leaved Rosemary	G2Q	S2	LE	E
Corynorhinus rafinesquii Rafinesque's Big-eared Bat	G3G4	S2	N	N
Crotalaria avonensis Avon Park Rabbit-bells	G1	S1	LE	E
Dicerandra christmanii Garrett's Scrub Balm	G1	S1	LE	E
Dicerandra frutescens Scrub Mint	G1	S1	LE	E
Drymarchon couperi Eastern Indigo Snake	G3	S3	LT	FT
Egretta tricolor Tricolored Heron	G5	S4	N	SSC
Eriogonum longifolium var. gnaphalifolium Scrub Buckwheat	G4T3	S3	LT	E
Falco sparverius paulus Southeastern American Kestrel	G5T4	S3	N	ST
Gopherus polyphemus Gopher Tortoise	G3	S3	C	ST
Grus canadensis pratensis Florida Sandhill Crane	G5T2T3	S2S3	N	ST

Gymnopogon chapmanianus Chapman's Skeletongrass	G3	S3	N	N
Hartwrightia floridana Hartwrightia	G2	S2	N	T
Heterodon simus Southern Hognose Snake	G2	S2	N	N
Hypericum cumulicola Highlands Scrub Hypericum	G2	S2	LE	E
Illicium parviflorum Star Anise	G2	S2	N	E
Lechea cernua Nodding Pinweed	G3	S3	N	T
Lechea divaricata Pine Pinweed	G2	S2	N	E
Liatris ohlingerae Florida Blazing Star	G2	S2	LE	E
Lithobates capito Gopher Frog	G3	S3	N	SSC
Lupinus aridorum Scrub Lupine	G1	S1	LE	E
Matelea floridana Florida Spiny-pod	G2	S2	N	E
Mustela frenata peninsulae Florida Long-tailed Weasel	G5T3	S3	N	N
Nemastylis floridana Celestial Lily	G2	S2	N	E
Neofiber alleni Round-tailed Muskrat	G3	S3	N	N
Nolina atopocarpa Florida Beargrass	G3	S3	N	T
Nolina brittoniana Britton's Beargrass	G3	S3	LE	E
Notophthalmus perstriatus Striped Newt	G2G3	S2	C	N
Panicum abscissum Cutthroat Grass	G3	S3	N	E
Paronychia chartacea ssp. chartacea Paper-like Nailwort	G3T3	S3	LT	E
Peucaea aestivalis Bachman's Sparrow	G3	S3	N	N
Picoides borealis Red-cockaded Woodpecker	G3	S2	LE	FE
Pituophis melanoleucus mugitus Florida Pine Snake	G4T3	S3	N	SSC
Plestiodon egregius lividus Blue-tailed Mole Skink	G5T2	S2	LT	FT
Plestiodon reynoldsi Sand Skink	G2	S2	LT	FT
Podomys floridanus Florida Mouse	G3	S3	N	SSC
Polygala lewtonii Lewton's Polygala	G2G3	S2S3	LE	E
Polygonella basiramia Florida Jointweed	G3	S3	LE	E
Polygonella myriophylla Small's Jointweed	G3	S3	LE	E
Prunus geniculata Scrub Plum	G3	S3	LE	E
Pteroglossaspis ecristata Giant Orchid	G2G3	S2	N	T
Puma concolor coryi Florida Panther	G5T1	S1	LE	FE
Rostrhamus sociabilis Snail Kite	G4G5	S2	LE	N
Salix floridana	G2	S2	N	E

Florida Willow				
Sceloporus woodi Florida Scrub Lizard	G2G3	S2S3	N	N
Schizachyrium niveum Scrub Bluestem	G1G2	S1S2	N	E
Sciurus niger shermani Sherman's Fox Squirrel	G5T3	S3	N	SSC
Ursus americanus floridanus Florida Black Bear	G5T2	S2	N	N
Warea amplexifolia Clasping Warea	G1	S1	LE	E
Warea carteri Carter's Warea	G3	S3	LE	E

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Florida Natural Areas Inventory

Biodiversity Matrix Query Results

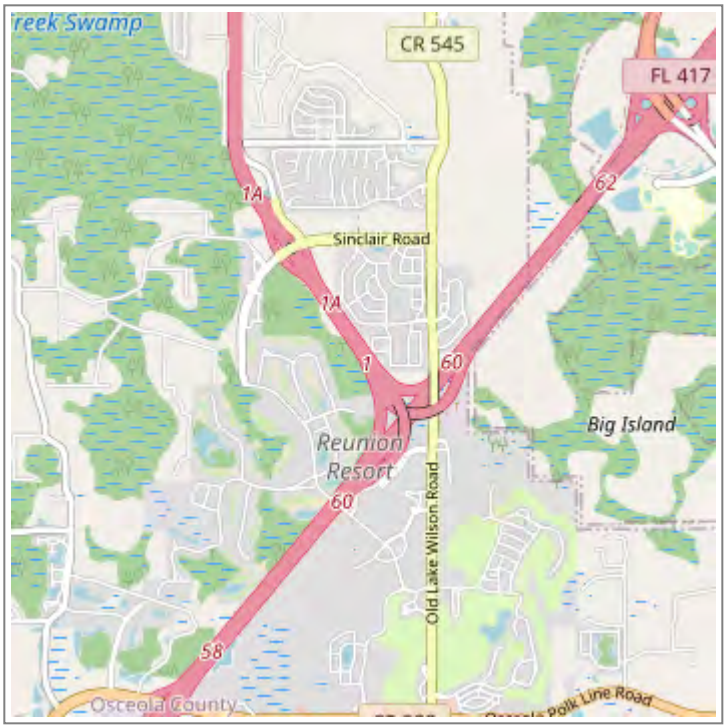
UNOFFICIAL REPORT

Created 2/22/2022

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

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

Report for 4 Matrix Units: 42167 , 42168 , 42538 , 42539



Descriptions

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

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

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

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

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

Matrix Unit ID: 42167

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

3 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Mesic flatwoods	G4	S4	N	N
Mycteria americana Wood Stork	G4	S2	LT	FT
Sandhill	G3	S2	N	N

Matrix Unit ID: 42168

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

4 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Eriogonum longifolium var. gnaphalifolium Scrub Buckwheat	G4T3	S3	LT	E
Mycteria americana Wood Stork	G4	S2	LT	FT
Sandhill	G3	S2	N	N
Sceloporus woodi Florida Scrub Lizard	G2G3	S2S3	N	N

Matrix Unit ID: 42538

0 **Documented** Elements Found

6 **Documented-Historic** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Bonamia grandiflora Florida Bonamia	G3	S3	LT	E
Chionanthus pygmaeus Pygmy Fringe Tree	G2G3	S2S3	LE	E
Gopherus polyphemus Gopher Tortoise	G3	S3	C	ST
Nolina brittoniana Britton's Beargrass	G3	S3	LE	E
Sceloporus woodi Florida Scrub Lizard	G2G3	S2S3	N	N
Scrub	G2	S2	N	N

4 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Mesic flatwoods	G4	S4	N	N
Mycteria americana Wood Stork	G4	S2	LT	FT
Sandhill	G3	S2	N	N
Stenacron floridense A Mayfly	G3G4	S3S4	N	N

Matrix Unit ID: 42539

1 **Documented** Element Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Gopherus polyphemus Gopher Tortoise	G3	S3	C	ST

0 **Documented-Historic** Elements Found

6 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Chionanthus pygmaeus Pygmy Fringe Tree	G2G3	S2S3	LE	E
Mesic flatwoods	G4	S4	N	N
Mycteria americana	G4	S2	LT	FT

Wood Stork				
Sandhill	G3	S2	N	N
Sceloporus woodi Florida Scrub Lizard	G2G3	S2S3	N	N
Scrub	G2	S2	N	N

Matrix Unit IDs: 42167 , 42168 , 42538 , 42539

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

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Andropogon arctatus Pine-woods Bluestem	G3	S3	N	T
Aphelocoma coerulescens Florida Scrub-Jay	G2	S2	LT	FT
Athene cunicularia floridana Florida Burrowing Owl	G4T3	S3	N	SSC
Bonamia grandiflora Florida Bonamia	G3	S3	LT	E
Calamintha ashei Ashe's Savory	G3	S3	N	T
Calopogon multiflorus Many-flowered Grass-pink	G2G3	S2S3	N	T
Carex chapmanii Chapman's Sedge	G3	S3	N	T
Centrosema arenicola Sand Butterfly Pea	G2Q	S2	N	E
Chionanthus pygmaeus Pygmy Fringe Tree	G2G3	S2S3	LE	E
Cladonia perforata Perforate Reindeer Lichen	G1	S1	LE	E
Clitoria fragrans Scrub Pigeon-wing	G3	S3	LT	E
Coelorachis tuberculosa Piedmont Jointgrass	G3	S3	N	T
Conradina brevifolia Short-leaved Rosemary	G2Q	S2	LE	E
Corynorhinus rafinesquii Rafinesque's Big-eared Bat	G3G4	S2	N	N
Crotalaria avonensis Avon Park Rabbit-bells	G1	S1	LE	E
Dicerandra christmanii Garrett's Scrub Balm	G1	S1	LE	E
Dicerandra frutescens Scrub Mint	G1	S1	LE	E
Drymarchon couperi Eastern Indigo Snake	G3	S3	LT	FT
Egretta tricolor Tricolored Heron	G5	S4	N	SSC
Eriogonum longifolium var. gnaphalifolium Scrub Buckwheat	G4T3	S3	LT	E
Falco sparverius paulus Southeastern American Kestrel	G5T4	S3	N	ST
Gopherus polyphemus Gopher Tortoise	G3	S3	C	ST
Grus canadensis pratensis Florida Sandhill Crane	G5T2T3	S2S3	N	ST
Gymnopogon chapmanianus Chapman's Skeletongrass	G3	S3	N	N
Hartwrightia floridana Hartwrightia	G2	S2	N	T
Heterodon simus Southern Hognose Snake	G2	S2	N	N
Hypericum cumulicola	G2	S2	LE	E

Highlands Scrub Hypericum				
Illicium parviflorum Star Anise	G2	S2	N	E
Lechea cernua Nodding Pinweed	G3	S3	N	T
Lechea divaricata Pine Pinweed	G2	S2	N	E
Liatris ohlingerae Florida Blazing Star	G2	S2	LE	E
Lithobates capito Gopher Frog	G3	S3	N	SSC
Lupinus aridorum Scrub Lupine	G1	S1	LE	E
Matelea floridana Florida Spiny-pod	G2	S2	N	E
Mustela frenata peninsulae Florida Long-tailed Weasel	G5T3	S3	N	N
Nemastylis floridana Celestial Lily	G2	S2	N	E
Neofiber alleni Round-tailed Muskrat	G3	S3	N	N
Nolina atopocarpa Florida Beargrass	G3	S3	N	T
Nolina brittoniana Britton's Beargrass	G3	S3	LE	E
Notophthalmus perstriatus Striped Newt	G2G3	S2	C	N
Panicum abscissum Cutthroat Grass	G3	S3	N	E
Paronychia chartacea ssp. chartacea Paper-like Nailwort	G3T3	S3	LT	E
Peucaea aestivalis Bachman's Sparrow	G3	S3	N	N
Picoides borealis Red-cockaded Woodpecker	G3	S2	LE	FE
Pituophis melanoleucus mugitus Florida Pine Snake	G4T3	S3	N	SSC
Plestiodon egregius lividus Blue-tailed Mole Skink	G5T2	S2	LT	FT
Plestiodon reynoldsi Sand Skink	G2	S2	LT	FT
Podomys floridanus Florida Mouse	G3	S3	N	SSC
Polygala lewtonii Lewton's Polygala	G2G3	S2S3	LE	E
Polygonella basiramia Florida Jointweed	G3	S3	LE	E
Polygonella myriophylla Small's Jointweed	G3	S3	LE	E
Prunus geniculata Scrub Plum	G3	S3	LE	E
Pteroglossaspis ecristata Giant Orchid	G2G3	S2	N	T
Puma concolor coryi Florida Panther	G5T1	S1	LE	FE
Rostrhamus sociabilis Snail Kite	G4G5	S2	LE	N
Salix floridana Florida Willow	G2	S2	N	E
Sceloporus woodi Florida Scrub Lizard	G2G3	S2S3	N	N
Schizachyrium niveum Scrub Bluestem	G1G2	S1S2	N	E
Sciurus niger shermani Sherman's Fox Squirrel	G5T3	S3	N	SSC

Ursus americanus floridanus Florida Black Bear	G5T2	S2	N	N
Warea amplexifolia Clasping Warea	G1	S1	LE	E
Warea carteri Carter's Warea	G3	S3	LE	E

APPENDIX F

PROTECTED SPECIES POTENTIAL FOR OCCURRENCE AND MAP

Species	Designated Status			Habitat Preference	Potential for Occurrence
	Federal	State	FDACS		
Flora					
Ashe's savory (*Calamintha ashei*)	-	-	T	Open areas of pine scrub habitat, sandhills, and scrub and disturbed areas such as abandoned fields, roadsides, and fire lanes.	None
Avon Park rabbit-bells (*Crotalaria avonensis*)	E	-	-	Bare patches of white sand in Lake Wales Ridge scrub and occasionally in disturbed areas or partial shade	None
Britton's beargrass (*Nolina brittoniana*)	E	-	-	Scrub, sandhill, scrubby flatwoods, and xeric hammock.	Moderate
Carter's warea (*Warea carteri*)	E	-	-	Scrub and sandhills with longleaf pine and wiregrass.	Low
Celestial lily (*Nemastylis floridana*)	-	-	E	Wet flatwoods, prairies, marshes, and cabbage palm hammocks edges.	Low
Chapman's sedge (*Carex chapmanni*)	-	-	T	Hammocks/floodplains of blackwater streams with intermittent floods.	None
Clasping warea (*Warea amplexifolia*)	E	-	-	Sunny openings with exposed sand in longleaf pine/turkey oak/wiregrass sandhills	None
Cutthroat grass (*Panicum abscissum*)	-	-	E	Dry prairies, mesic flatwoods, wet flatwoods, depressional marshes, and seepage slopes.	Low
Florida beargrass (*Nolina atopocarpa*)	-	-	T	Pine flatwoods, scrubby flatwoods.	None
Florida blazing star (*Liatris ohlingerae*)	E	-	-	Open or disturbed areas in white sand scrub on central Florida ridges that include scrub oaks, sand pine, and lichens	Low

Species	Designated Status			Habitat Preference	Potential for Occurrence
	Federal	State	FDACS		
Florida bonamia (Bonamia grandiflora)	T	-	-	Open and disturbed areas in white sand scrub on central Florida ridges that include scrub oaks, sand pine, and lichens.	None
Florida jointweed (Polygonella basiramia)	E	-	-	Open, sandy areas within sand pine scrub.	None
Florida spiny-pod (Matelea floridana)	-	-	E	Occurs on a variety of wooded habitats from fairly moist woods to upland hardwood forests.	Low
Florida willow (*Salix floridana*)	-	-	E	Springheads, edges of spring runs, hydric hammocks, and floodplains.	Low
Garrett's scrub balm (*Dicerandra christmanii*)	E	-	-	openings in oak scrub on Lake Wales Ridge	None
Giant orchid (*Pteroglossaspis ecristata*)	-	-	T	Sandhill, scrub, pine flatwoods, and pine rocklands.	Low
Hartwrightia (*Hartwrightia floridana*)	-	-	T	Seepage slopes, edges of baygalls and springheads, wet prairies, and flatwoods with wet peaty soils.	None
Highlands scrub hypericum (*Hypericum cumulicola*)	E	-	-	White sand scrub, rosemary balds, scrubby flatwoods, and oak scrubs	Low
Incised groove-bur (*Agrimonia incisa*)	-	-	T	Dry to moist longleaf pine-oak woods, oak-hickory slopes, roadsides, sand or shell maritime thickets	None
Lewton's polygala (*Polygala lewtonii*)	E	-	-	Oak scrub, sandhill, and transition zones between high pine and turkey oak barrens.	Low
Many-flowered grass-pink (*Calopogon multiflorus*)	-	-	T	Dry to moist flatwoods with longleaf pine, wiregrass, and saw palmetto.	Low
Nodding pinweed (*Lechea cernua*)	-	-	T	Deep sands, usually ancient dunes, on which the most common forest is a mixture of evergreen scrub oaks.	None

Species	Designated Status			Habitat Preference	Potential for Occurrence
	Federal	State	FDACS		
Papery nailwort (*Paronychia chartacea ssp. chartacea*)	T	-	-	White sand clearings in sand scrub of ancient dunes.	Low
Perforate reindeer lichen (*Cladonia perforate*)	E	-	-	Rosemary scrub on the Panhandle coasts, Lake Wales Ridge, and Atlantic Coast Ridge	None
Piedmont jointgrass (*Coelorachis tuberculosa*)	-	-	T	Margins of lakes and ponds or in wet savanna swales.	None
Pine pinweed (*Lechea divaricate*)	-	-	E	scrub and scrubby flatwoods	Low
Pine-woods bluestem (*Andropogon arctatus*)	-	-	T	Open flatwoods, savanna, sand pine scrub, and can be found in seepage bogs	Low
Pygmy fringe tree (*Chionanthus pygmaeus*)	E	-	-	Scrub, sandhills, and xeric hammocks.	None
Sand butterfly pea (*Centrosema arenicola*)	-	-	E	Sandhill, scrubby flatwoods, and dry upland woods.	Low
Scrub bluestem (*Andropogon arctatus*)	-	-	E	White sand patches in rosemary scrub, and in sand pine scrub and oak scrub	Low
Scrub buckwheat (*Eriogonum longifolium var. gnaphalifolium*)	T	-	-	Sandhill, oak hickory scrub, high pinelands, and turkey oak barrens with wiregrass, blue jack, and turkey oak.	None
Scrub lupine (*Lupinus aridorum*)	E	-	-	Openings in sand pine and rosemary scrub	None
Scrub mint (*Dicerandra frutescens*)	E	-	-	Sand pine scrub and sandhill on the Lake Wales Ridge	None
Scrub pigeon-wing (*Clitoria fragrans*)	T	-	-	Turkey oak barrens with wire grass or scrub/scrubby high pine.	None
Scrub plum (*Prunus geniculata*)	E	-	-	Sandhill and oak scrub	Low
Short-leaved rosemary (*Conradina brevifolia*)	E	-	-	Florida scrub habitat on white sand substrates among sand pines and oaks.	None
Small's jointweed (*Polygonella myriophylla*)	E	-	-	open, sandy areas within scrub	Moderate

Species	Designated Status			Habitat Preference	Potential for Occurrence
	Federal	State	FDACS		
Star anise (*Illicium parviflorum*)	-	-	E	Banks of seepage stream, bottomland forest, hydric hammock, or baygall	Low
Reptilian					
American alligator (*Alligator mississippiensis*)	T (S/A)	-	-	Prefer freshwater lakes, slow-moving rivers, and associated wetlands, but they can be found in brackish water	Low
Blue-tailed mole skink (*Plestiodon egregius lividus*)	T	-	-	Sandhill, Scrub, and longleaf pine-turkey oak habitats.	High (sand skink track observed)
Eastern indigo snake (*Drymarchon couperi*)	T	-	-	Mesic flatwoods, upland pine forests, swamps, wet prairies, xeric pinelands, and scrub habitats.	Low
Florida pine snake (*Pituophis melanoleucus mugitus*)	-	T	-	Pine hammocks, turkey oak hammocks, scrub, sandhill, and abandoned agricultural fields	Low
Gopher tortoise (*Gopherus polyphemus*)	C	T	-	Typically found in dry upland habitats including sandhills, scrub, xeric oak hammock, and dry pine flatwoods; also commonly uses disturbed habitats such as pastures, old fields, and road shoulders	Moderate
Sand skink (*Plestiodon reynoldsi*)	T	-	-	Sandhill, scrub, and longleaf pine-turkey oak habitats.	High (observed)
Avian					
Bald eagle (*Haliaeetus leucocephalus*)	NL1	NL2	-	Large open water bodies, saltwater marshes, dry prairies, mixed pine, hardwood forests, wet prairies, marshes, pine flatwoods, and sandhills.	Moderate

Species	Designated Status			Habitat Preference	Potential for Occurrence
	Federal	State	FDACS		
Crested caracara (*Caracara cheriway*)	T	-	-	Open country such as dry prairie and pasture lands with scattered cabbage palm, cabbage palm/live oak hammocks, and shallow ponds and sloughs. Cabbage palms or live oaks with low-growing surrounding vegetation are required for nesting.	None
Everglade snail kite (*Rostrhamus sociabilis plumbeus*)	E	-	-	Freshwater marshes, swamps, lagoons, ponds, tidal creeks, flooded pastures, and ditches	None
Florida burrowing owl (*Athene cunicularia floridana*)	-	T	-	Areas of short, herbaceous groundcover; including prairies, sandhills, and farmland.	None
Florida grasshopper sparrow (*Ammodramus savannarum floridanus*)	E	-	-	Requires large areas of frequently burned dry prairie habitat with patchy open areas sufficient for foraging. May persist in pasture lands that have not been intensively managed so as to remove all vegetation.	None
Florida sandhill crane (*Antigone canadensis pratensis*)	-	T	-	Wet and dry prairies, marshes, and marshy lake edges.	Low
Florida scrub-jay (*Aphelocoma coerulescens*)	T	-	-	Typically found in early successional stages of fire-dominated xeric oak communities located on well-drained, sandy soils; preferred habitat consists of scrub oaks between 3 and 10 feet tall, with open sand and scattered clumps of herbaceous vegetation.	Moderate
Little blue heron (*Egretta caerulea*)	-	T	-	Freshwater marshes, coastal beaches, mangrove swamps, cypress swamps, hardwood swamps, wet prairies and bay swamps.	Low

Species	Designated Status			Habitat Preference	Potential for Occurrence
	Federal	State	FDACS		
Red-cockaded woodpecker (*Picoides borealis*)	E	-	-	Mature pine woodlands that have a diversity of grass, forb, and shrub species. Longleaf and slash pine flatwoods.	None
Roseate spoonbill (*Platalea ajaja*)	-	T	-	Freshwater marshes, coastal beaches, mangrove swamps, cypress swamps, hardwood swamps, wet prairies and bay swamps.	Low
Southeastern American kestrel (*Falco sparverius paulus*)	-	T	-	Nest in cavities in open pine habitats, woodland edges, prairies, and pastures; sandhill preferred but observed in flatwoods	Low
Tricolored heron (*Egretta tricolor*)	-	T	-	Freshwater marshes, coastal beaches, mangrove swamps, cypress swamps, hardwood swamps, wet prairies and bay swamps.	Low
Wood stork (*Mycteria americana*)	T	-	-	Fresh and saltwater habitats such as fresh and saltwater marshes, tidal flats, wet prairies, cypress swamps, and agricultural environments.	Low

Notes:

E = endangered, T = threatened, SSC = species of special concern, T(S/A) = Federal Threatened due to similarity of appearance, C = candidate, NL = not listed

1 While not listed under the ESA, the Bald Eagle is federally protected under the Bald and Golden Eagle Protection Act.

2 While not listed under Chapter 68A-27 FAC, the Bald Eagle is state protected under the FWC Bald Eagle Management Plan (2008).

0 3,300 6,600 13,200 Feet

N

Nest ID: OS151

Nest ID: OS231

Nest ID: PO172

Legend

- Project Site
- One Mile Project Buffer
- Preferred Alternative
- Bald Eagle Nests
- Sand Skink Observation

Suitable Sand Skink Soils within Study Area

- BASINGER
- CANDLER
- IMMOKALEE
- PAOLA
- PLACID
- POMELLO
- POMPANO
- SAMSULA
- SATELLITE
- SMYRNA
- ST. LUCIE
- TAVARES

*Project site is within the following USFWS Consultation Areas: sand and blue-tail mole skink, Florida grasshopper sparrow, Florida scrub-jay, crested caracara, Everglade snail kite, and red-cockaded woodpecker.

K:\TAM_GIS\049652001 - PPE PD&E\GIS\MXD\Species Map.mxd

Source: Areial courtesy of ESRI

FLORIDA'S TURNPIKE

Protected Species Map

Poinciana Parkway Extension PD&E Study
From CR 532 to north of I-4/SR 429 Interchange
FPID: 446581-1-22-01
Osceola and Polk Counties, Florida

PROJECT NUMBER: 049652001	*APPENDIX E*	1 INCH = 3,300 FEET	*OCTOBER 2022*

APPENDIX G

SPECIES DETERMINATION KEY PATHS AND STANDARD PROTECTION MEASURES 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

May 18, 2010

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

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

Dear Mr. Kinard:

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

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

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

Wood stork

Habitat

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

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

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

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

Conservation Measures

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

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

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

The Key is as follows:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Monitoring and Reporting Effects

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

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

Sincerely yours,

Paul Souza
Field Supervisor
South Florida Ecological Services Office

Enclosures

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

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United States Department of the Interior

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

August 1, 2017

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

Subject: Consultation Key for the Eastern Indigo Snake – Revised

Dear Mr. Kinard:

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

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

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

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

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

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

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

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

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

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

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

Scope of the Key

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

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

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

Habitat

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

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

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

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

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

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

Even though thermal stress may not be a limiting factor throughout the year in south Florida, eastern indigo snakes still seek and use underground refugia. On the sandy central ridge of central Florida, eastern indigo snakes use gopher tortoise burrows more (62 percent) than other underground refugia (Layne and Steiner 1996). Other underground refugia used include armadillo (*Dasypus novemcinctus*) burrows near citrus groves, cotton rat (*Sigmodon hispidus*) burrows, and land crab (*Cardisoma guanhumi*) burrows in coastal areas (Layne and Steiner 1996; Wilson and Porras 1983). Natural ground holes, hollows at the base of trees or shrubs, ground litter, trash piles, and crevices of rock-lined ditch walls are also used (Layne and Steiner 1996). These refugia are used most frequently where tortoise burrows are not available, principally in low-lying areas off the central and coastal ridges.

Minimization Measures

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

Determinations

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

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

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

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

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

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

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

B. Permit will be conditioned for use of the Service's most current guidance for Standard Protection Measures For The Eastern Indigo Snake (currently 2013) during site preparation and project construction.....go to C

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

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

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

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

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

E. Any permit will be conditioned such that all gopher tortoise burrows, active or inactive, will be excavated prior to site manipulation in the vicinity of the burrow[1]. If an eastern indigo snake is encountered, the snake must be allowed to vacate the area prior to additional site manipulation in the vicinity. Any permit will also be conditioned such that holes, cavities, and snake refugia other than gopher tortoise burrows will be inspected each morning before planned site manipulation of a particular area, and, if occupied by an eastern indigo snake, no work will commence until the snake has vacated the vicinity of proposed work.....**NLAA**[2]

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

End Key

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

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

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

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

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

Sincerely,

Roxanna Hinzman
Field Supervisor
South Florida Ecological Services

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

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STANDARD PROTECTION MEASURES FOR THE EASTERN INDIGO SNAKE
U.S. Fish and Wildlife Service
August 12, 2013

The eastern indigo snake protection/education plan (Plan) below has been developed by the U.S. Fish and Wildlife Service (USFWS) in Florida 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). 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 17" 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. Although they have a preference for uplands, they also utilize some wetlands

and agricultural areas. 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. 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. "Take" is defined by the USFWS as an attempt to kill, harm, harass, pursue, hunt, shoot, wound, trap, capture, collect, or engage in any such conduct. Penalties include a maximum fine of $25,000 for civil violations and up to $50,000 and/or imprisonment for criminal offenses, if convicted.

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

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

- Cease clearing activities and allow the live eastern indigo snake sufficient time to move away from the site without interference;
- Personnel must NOT attempt to touch or handle snake due to protected status.
- Take photographs of the snake, if possible, for identification and documentation purposes.
- Immediately notify supervisor or the applicant's 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 applicant's 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

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 11" paper and then properly folded, is attached). Photos of eastern indigo snakes may be accessed on USFWS and/or FWC 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 applicant's 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 H

FLORIDA SCRUB-JAY SURVEY MEMORANDUM

FLORIDA SCRUB-JAY SURVEY

1.0 INTRODUCTION

Kimley-Horn and Associates (Kimley-Horn) conducted a Florida scrub-Jay (*Aphelocoma coerulescens*) survey within the proposed limits of the Poinciana Parkway Extension Connector, consisting of State Road (SR) 429 from Sand Hill Road to approximately Old Tampa Highway, approximately five (5) miles in length and Interstate-4 (I-4) from Osceola Polk Line Road to World Drive, approximately four (4) miles in length (see **Figure 1 – Project Location Map**). The project is located within Sections 21-23, 25-27, and 33-36, Township 25 South and Range 27 East; Section 31, Township 25 South and Range 28 East; Section 1, Township 26 South and Range 27 East; and Section 6, Township 26 South and Range 28 East in Osceola and Polk Counties, Florida. The purpose of this survey was to locate potentially occupied Florida scrub-jay (scrub-jay) habitat and estimate territory boundaries of scrub-jay units within the project limits. The survey was conducted utilizing the methods outlined in the *Florida Scrub-Jay General Survey Guidelines and Protocols* (2007) developed by the U.S. Fish and Wildlife Service (USFWS) South Florida Ecological Services Office. Kimley-Horn conducted field surveys on October 25-28 and 30, 2021.

2.0 FLORIDA SCRUB-JAY BACKGROUND

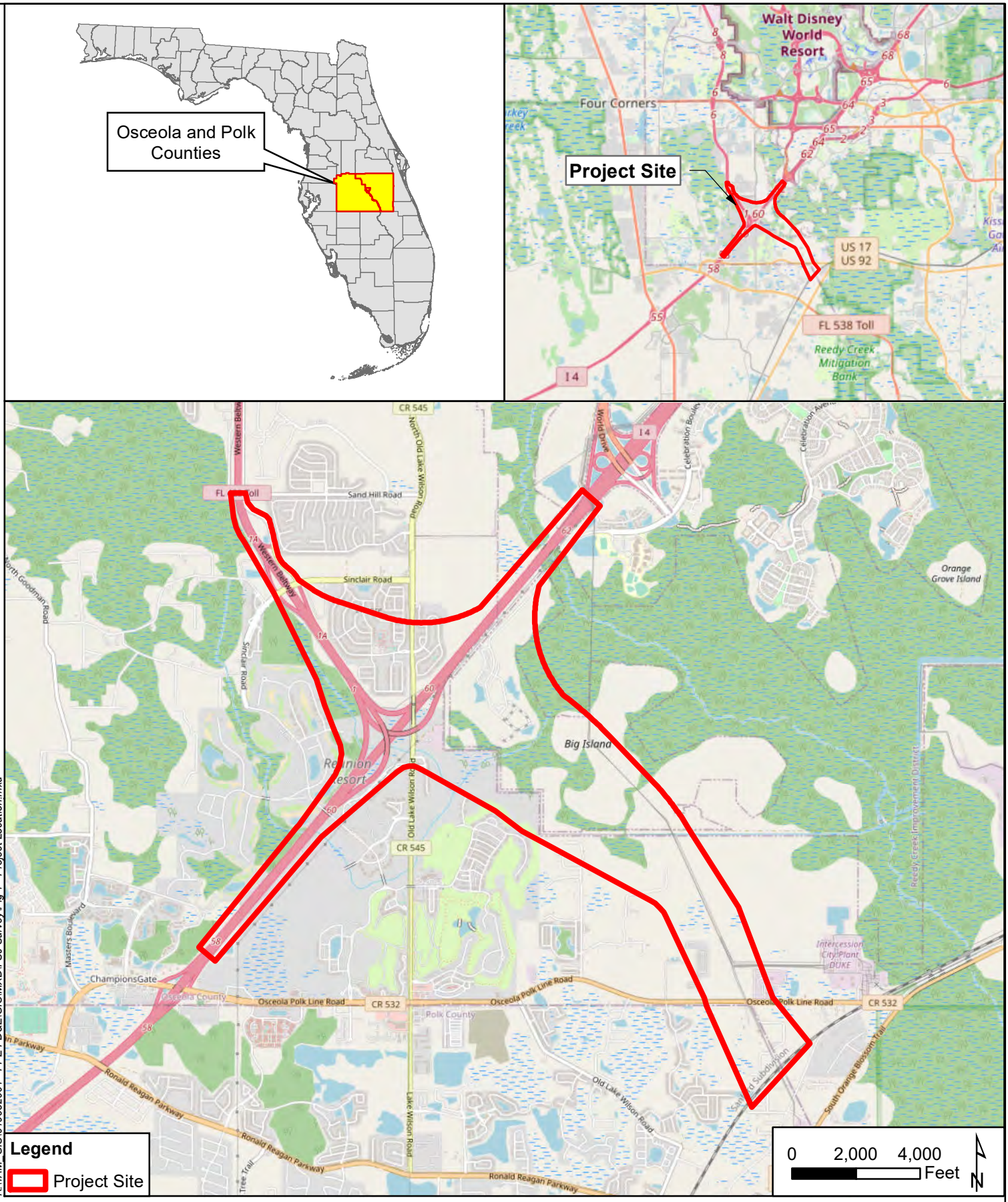
Scrub-jays are round headed blue and gray birds endemic to Florida, and have specific habitat requirements. Potential scrub-jay habitat was defined as any area containing greater than 15 percent coverage of one or more scrub oak species (Quercus geminata, Q. chapmanni, Q. inopina, Q. minima, or Q. myrtifolia). Additional potential habitats considered were palmetto dominated shrub and brushland, rural residential, improved, unimproved, and woodland pastures, coniferous forest, mixed hardwood/coniferous forest, hydric pine forest, vegetated non-forested wetlands, freshwater marshes, and transmission line right-of-way. Optimal habitat was any area dominated (>60% coverage) by one or more scrub oak species, averaging less than 3.5 meters (10.5 feet) in height and having internal or adjacent open sandy areas. Sub-optimal habitats were any scrub areas denser and/or taller than optimal habitats, and herbaceous prairies. Edges of mature scrub areas which are adjacent to open, sandy, or grassy areas were also considered to be sub-optimal habitat with potential for scrub-jay nesting or foraging activities.

Fitzpatrick, et al. (1991) defines three habitat types utilized by scrub-jays. They are detailed below:

TYPE I HABITAT: Any upland plant community in which percent cover of the substrate by scrub oak species is 15% or more.

TYPE II HABITAT: Any upland plant community, not meeting the definition of TYPE I habitat, in which one or more scrub oak species is represented.

TYPE III HABITAT: Any upland or seasonally dry wetland within one quarter mile of any designated TYPE I or TYPE II habitat.



K:\TAM_GIS\049652001 - PPE PD&E\GIS\MXD\FSJ Survey\Fig 1 - Project Location.mxd

FLORIDA'S TURNPIKE

Project Location Map

Poinciana Parkway Extension PD&E
Osceola and Polk Counties, Florida

1 INCH = 4,000 FEET	PROJECT NUMBER: 049652001	JUNE 2022	FIGURE 1

Based on the above scrub habitat definitions, the project limits were evaluated and considered by Kimley-Horn staff to be either TYPE I, TYPE II or TYPE III scrub habitat (see Figure 2 – Florida Scrub-Jay Habitat Map).

3.0 METHODOLOGY

The survey was conducted utilizing the methods outlined in the *Florida Scrub-Jay General Survey Guidelines and Protocols* (2007) and coordination with USFWS on October 21, 2021 for approval of survey station locations. The survey included six (6) survey call stations (Stations 1-6) in optimal TYPE I habitats (see **Figure 3 – Florida Scrub-Jay Stations Map**). No survey transects were established as the survey was segmented in nature. The survey was performed over five (5) days when winds were calm or relatively calm between approximately 8:30 AM and 10:30 AM.

4.0 RESULTS

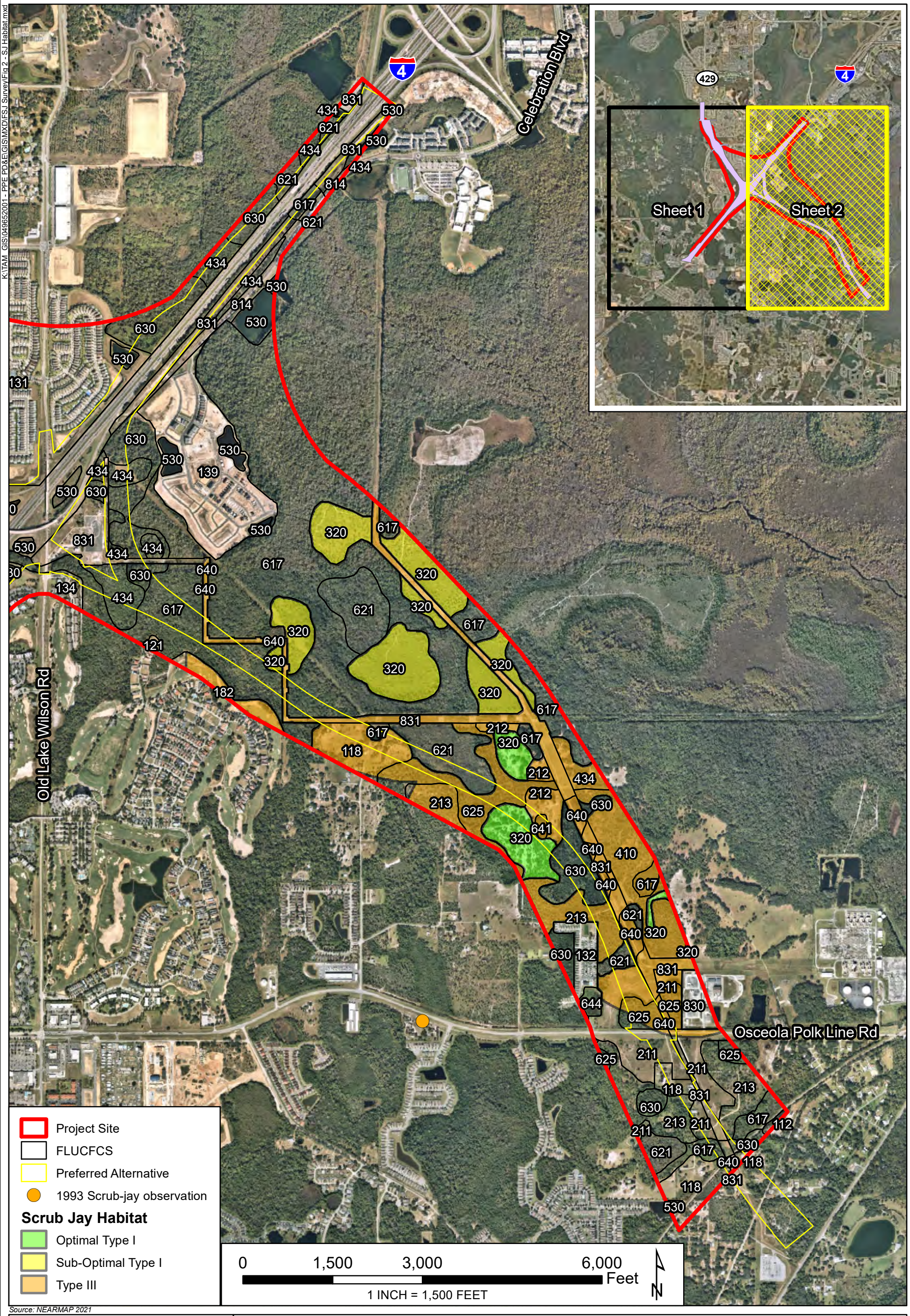
The majority of scrub habitat within the project limits was determined to meet the criteria of sub-optimal TYPE I habitat containing >60% of scrub oak species with dense understory and little to no open sandy areas. Optimal TYPE I habitat exists in three separate areas within the project limits. Survey efforts were focused on these areas. TYPE II habitat was not observed onsite. TYPE III habitat consisting of non-scrub uplands and seasonally dry wetlands were scattered throughout the project limits.

No scrub-jay return calls or sightings were documented during any of the five (5) survey days at any of the call stations. Other bird species observed included mourning dove (*Zenaida macroura*), common ground-dove (*Columbina passerina*), gray catbird (*Dumetella carolinensis*), American crow (*Corvus brachyrhynchos*), wild turkey (*Meleagris gallopavo*), eastern meadowlark (*Sturnella magna*), chipping sparrow (*Spizella passerina*), eastern towhee (*Pipilo erythrophthalmus*), brown-headed cowbird (*Molothrus ater*), Northern mockingbird (*Mimus polyglottos*), Carolina chickadee (*Poecile carolinensis*), white-eyed vireo (*Vireo griseus*), common yellowthroat (*Geothlypis trichas*), American robin (*Turdus migratorius*), northern cardinal (*Cardinalis cardinalis*), pileated woodpecker (*Dryocopus pileatus*), red-winged blackbird (*Agelaius phoeniceus*), common grackle (*Quiscalus quiscula*), eastern bluebird (*Sialia sialis*), blue jay (*Cyanocitta cristata*), house finch (*Haemorhous mexicanus*), turkey vulture (*Cathartes aura*), red-shouldered hawk (*Buteo lineatus*), wood stork (*Mycteria americana*), white ibis (*Eudocimus albus*), glossy ibis (*Plegadis falcinellus*), great egret (*Ardea alba*), little blue heron (*Egretta caerulea*), and roseate spoonbill (*Platalea ajaja*).

5.0 SUMMARY

TYPE I habitats and TYPE III habitats were observed within the project limits. TYPE II habitat was not observed. Optimal TYPE I habitat was surveyed in October 2021 in accordance with the Florida Scrub-Jay General Survey Guidelines and Protocols (USFWS, 2007). No scrub-jay return calls were heard, and no scrub-jays were observed during the survey period.

K:\TAM_GIS\049652001 - PPE PD&E\GIS\MXD\FSJ Survey\Fig 2 - SJ Habitat.mxd



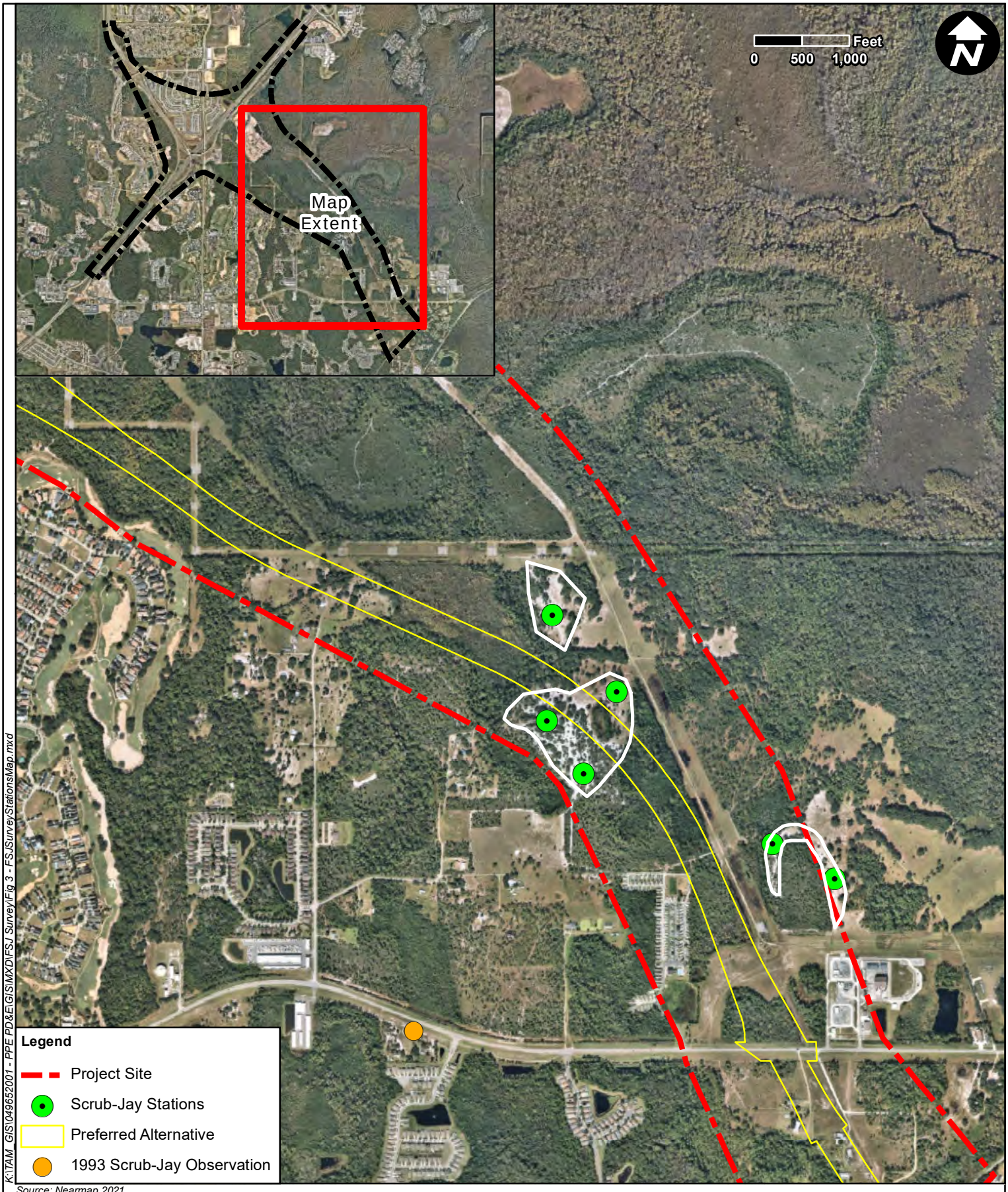
Source: NEARMAP 2021

FLORIDA'S TURNPIKE

Florida Scrub-Jay Habitat Map

Poinciana Parkway Extension PD&E

PROJECT NUMBER: 049652001	FIGURE 1	Osceola and Polk Counties, Florida	NOVEMBER 2021



K:\TAM_GIS\049652001 - PPE PD&E\GIS\MXD\FSJ Survey\Fig 3 - FSJSurveyStationsMap.mxd

Source: Nearmap 2021

FLORIDA'S TURNPIKE

Florida Scrub-Jay Survey Stations Map

Poinciana Parkway Extension PD&E
Osceola and Polk Counties, Florida

1 inch = 1,333 feet	PROJECT NUMBER: 049652001	NOVEMBER 2021	FIGURE 3

6.0 REFERENCES

Fitzpatrick, J.W., B. Pranty, and B. Stith. 1994. Florida Scrub Jay Statewide Map, 1992-1993. Archbold Biological Station. Lake Placid, Florida.

Fitzpatrick, J.W., G.E. Woolfenden and M.T. Kopeny. 1991. Ecology and Development-Related Habitat Requirements of the Florida Scrub-Jay (*Aphelocoma coerulescens*). Florida Game and Fresh Water Fish Commission, Non-game Wildlife Program Technical Report No. 8, Tallahassee, Florida.

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United States Fish and Wildlife Service. 1999. South Florida Multi-species Recover Plan, Florida Scrub-Jay, pp 4-261-4-290.

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Attachments:

Figure 1 – Florida Scrub-Jay Habitat Map

Figure 2 – Florida Scrub-Jay Stations Map

Appendix A – Florida Scrub-Jay Survey Data Sheets

Appendix B – Photographs

Scrub Jay Survey Data Sheet

Site Name: Poinciana Parkway Extension
Observer: Jeff Hemphill
Date: 10/25/2021
Project No. 049652001
Arrival Time: 9:00 AM
Departure Time: 10:12 AM
Weather Conditions: 75-80 F, 4-6 mph wind, 40-90% cloud coverage

Transect No.	Call Station Designation	Start Time	End Time	Observations
N/A	Station 5	9:00 AM	9:05 AM	Mockingbird, turkey
N/A	Station 6	9:15 AM	9:24 AM	Cardinal, mockingbird, finch. No calls heard
N/A	Station 3	9:37 AM	9:40 AM	Blue jay, sparrow, sandhill crane calls
N/A	Station 4	9:47 AM	9:52 AM	Eastern blue bird, mourning dove, chickadee?
N/A	Station 2	9:58 AM	10:03 AM	No calls no sjs. Heard bluejay
N/A	Station 1	10:08 AM	10:12 AM	American robin, finch, mockingbird

NOTES: Minor rain drizzle at station 3.

Scrub Jay Survey Data Sheet

Site Name: Poinciana Parkway Extension
Observer: Jeff Hemphill
Date: 10/26/2021
Project No. 049652001
Arrival Time: 9:05 AM
Departure Time: 9:54 AM
Weather Conditions: 78-79 F, 3-8 mph wind, 0-40% cloud coverage

Transect No.	Call Station Designation	Start Time	End Time	Observations
N/A	Station 1	9:05 AM	9:10 AM	Meadow lark Carolina wren Mockingbird Robin Wild turkey
N/A	Station 3	9:13 AM	9:18 AM	Mourning dove Mockingbird Grackle Turkey vulture
N/A	Station 2	9:21 AM	9:25 AM	No sjs no return calls. Mockingbird and grackle heard in distance
N/A	Station 4	9:29 AM	9:34 AM	No wildlife seen. Rwbb calls mockingbird calls. Woodpecker peck
N/A	Station 5	9:41 AM	9:47 AM	While driving to point observed wood stork, white ibis, black ibis, great egret, lbh, and roseate spoonbill
N/A	Station 6	9:49 AM	9:54 AM	Rwbb calls. Buzzards in distance. No sjs or return calls
NOTES:				

Scrub Jay Survey Data Sheet

Site Name: Poinciana Parkway Extension
Observer: Jeff Hemphill
Date: 10/27/2021
Project No. 049652001
Arrival Time: 8:51 AM
Departure Time: 10:03 AM
Weather Conditions: 63-74 F, 2-3 mph wind, 0-5% cloud coverage

Transect No.	Call Station Designation	Start Time	End Time	Observations
N/A	Station 1	8:51 AM	8:56 AM	Two pwp near station. Red shoulders calling back and forth. Stopped call after 2 minutes
N/A	Station 3	9:03 AM	9:08 AM	Chipping sparrow Carolina chickadee Mockingbird
N/A	Station 2	9:35 AM	9:40 AM	Cardinal Ground dove Finch
N/A	Station 4	9:41 AM	9:46 AM	Robin Chickadee
N/A	Station 5	9:52 AM	9:56 AM	Mockingbird and robin calls. No sjs
N/A	Station 6	9:58 AM	10:03 AM	Vireo Black throated sparrow? Yellowthroat Mockingbird
NOTES:				

Scrub Jay Survey Data Sheet

Site Name: Poinciana Parkway Extension
Observer: Jeff Hemphill
Date: 10/28/2021
Project No. 049652001
Arrival Time: 8:22 AM
Departure Time: 9:12 AM
Weather Conditions: 72-75 F, 3-8 mph wind, 100% cloud coverage

Transect No.	Call Station Designation	Start Time	End Time	Observations
N/A	Station 1	8:22 AM	8:27 AM	Chickadee Dove Meadow lark No sj obs or calls
N/A	Station 3	8:30 AM	8:35 AM	Mockingbird Towhee? Whitetail deer Dove
N/A	Station 2	8:37 AM	8:42 AM	No sjs no wildlife
N/A	Station 4	8:45 AM	8:50 AM	Vultures in the distance. No sjs no calls
N/A	Station 5	8:57 AM	9:02 AM	No wildlife
N/A	Station 6	9:04 AM	9:12 AM	Turkey Dove House sparrow Cowbird
NOTES:				

Scrub Jay Survey Data Sheet

Site Name: Poinciana Parkway Extension
Observer: Jeff Hemphill
Date: 10/30/2021

Project No. 049652001
Arrival Time: 8:29 AM
Departure Time: 9:16 AM

Weather Conditions: 64-66 F, 1-6 mph wind, 100% cloud coverage

Transect No.	Call Station Designation	Start Time	End Time	Observations
N/A	Station 1	8:29 AM	8:34 AM	Turkey No sjs
N/A	Station 3	8:38 AM	8:43 AM	Mourning dove White tail deer Turkey vulture in distance
N/A	Station 2	8:45 AM	8:50 AM	Meadow lark Gray catbird Crows Red shoulder hawk flew in stopped call after 3 minutes.
N/A	Station 4	8:52 AM	8:57 AM	Mourning dove fly over. No other wildlife
N/A	Station 5	9:05 AM	9:10 AM	No wildlife
N/A	Station 6	9:11 AM	9:16 AM	Dove Catbird Crow
NOTES:				

Station 1 looking north.

Station 1 looking east.

Station 1 looking south.

Station 1 looking west.

Station 2 looking north.

Station 2 looking east.

Station 2 looking south.

Station 2 looking west.

Station 3 looking north.

Station 3 looking east.

Station 4 looking north.

Station 4 looking east.

Station 4 looking south.

Station 4 looking west.

Station 5 looking north.

Station 5 looking east.

Station 5 looking south.

Station 5 looking west.

Station 6 looking north.

Station 6 looking east.

Station 6 looking south.

Station 6 looking west.

APPENDIX I

WOOD STORK FORAGING ASSESSMENT MEMORANDUM

WOOD STORK FORAGING HABITAT ASSESSMENT

1.0 INTRODUCTION

The Florida's Turnpike Enterprise (FTE) is conducting a Project Development and Environment (PD&E) study to evaluate two (2) alternatives for a new tolled expressway, which includes a 2.5-mile extension of the Poinciana Parkway from Interstate 4 (I-4) to County Road 532 (CR 532) in Polk and Osceola County, Florida. The purpose of this PD&E Study is to evaluate engineering and environmental data and document information that will support FTE in determining the type, preliminary design, and location of the proposed improvements. The selected preferred alternative is Alternative 2. The study was conducted in order to meet the requirements of the FDOT, the National Environmental Policy Act (NEPA), and other related federal and state laws, rules, and regulations.

2.0 WOOD STORK NESTING AND SUITABLE FORAGING HABITAT

The wood stork (*Mycteria americana*) is primarily associated with freshwater and estuarine habitats that are used for nesting, roosting, and foraging. Wood storks typically nest colonially in medium to tall trees that occur in stands located in swamps or on islands surrounded by relatively broad expanses of open water. Successful breeding sites are those that have limited human disturbance and low exposure to land-based predators. Nesting sites protected from land-based predators are characterized as areas 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.

In addition to limited human disturbance and land-based predation, successful nesting depends on the availability of suitable foraging habitat. Because of their specialized feeding behavior, wood storks forage most effectively in shallow-water areas with highly concentrated prey. Typical foraging sites for the wood stork include freshwater marshes, depressions in cypress heads, swamps sloughs, managed impoundments, stock ponds, shallow-seasonally flooded roadside or agricultural ditches, and narrow tidal creeks or shallow tidal pools. Suitable foraging habitat is described as wetland or open water areas that are relatively calm, uncluttered by dense thickets of aquatic vegetation and have a water depth between 5 and 15 inches. Preferred foraging habitat includes wetlands exhibiting a mosaic of submerged and/or emergent aquatic vegetation, and shallow, open-water areas subject to hydraulic regimes that exhibit short and long hydroperiods. The vegetative component provides nursery habitat for small fish, crayfish, frogs, and other aquatic prey, and the shallow open-water areas provide sites for concentration of the prey during daily or seasonal low water periods. In Osceola and Polk County, suitable wetland and open water habitats within 18.6 miles of a wood stork nesting colony are considered Core Foraging Areas (CFA) by the U.S. Fish and Wildlife Service (USFWS).

The loss of wetland habitats, or wetland function, has been the primary cause of the wood stork population decline in the United States. The alteration of wetlands and the manipulation of wetland hydroperiods to suit human needs have also reduced the amount of available habitat to wood storks

and affected prey base availability. The altered hydrology of these systems has also enhanced the invasion of these systems by exotic plant species. These exotic plants can produce a dense understory and closed canopy, limiting suitability of these wetland systems for foraging by wood storks, although a sufficient prey base may be present in the wetlands.

Four (4) variables are indicative of the necessities and functions of optimal or suitable foraging habitat required by the wood stork:

1. Vegetation Density: the density of vegetation within habitats suitable for wood stork foraging;
2. Wetland Hydroperiods: the hydroperiod of the wetland, which includes two (2) subcomponents; (1) the fish and crayfish density per hydroperiod; and (2) the fish and crayfish biomass per hydroperiod;
3. Prey Size Suitability: the suitability of prey size for the wood stork, which provides an adjustment to the fish and crayfish biomass per hydroperiod and is referenced hereafter as the "wood stork suitability prey base"; and
4. Competition with other wading bird species: the likelihood that the wood stork is the wading bird species that actually consumes the concentrated prey.

3.0 SUITABLE FORAGING HABITATS WITHIN THE PROJECT STUDY AREA

The proposed project study area contains wood stork foraging habitat and is located within the 18.6-mile CFA of three (3) active wood stork nesting colonies: Eagle Nest Park, Gatorland, and Lake Russell. There are approximately 141.71 acres of wetlands that could be utilized by the wood stork for foraging in Alternative 1. There are approximately 133.27 acres of wetlands that could be utilized by the wood stork for foraging in Alternative 2. There are no surface waters in either alternative. These wetlands were grouped by similar habitat types and evaluated relative to exotic species density and hydroperiod.

Exotic Vegetation Density

Wood stork habitat quality can be adversely affected by the level of exotic species infestation within wetlands and surface waters. The availability of the prey base for wood storks and other foraging wading birds is reduced by the restriction of access caused from dense and thick exotic vegetation. **Table 1** provides the foraging suitability value (FSV) percentages used in the Wood Stork Biomass Analysis.

The wetland habitats within the Poinciana Parkway project study area vary in the percentage of exotic vegetation. As a result, FSVs of 100, 64, 37, and 3 were assigned to the potential foraging habitat available to wood storks within the project study area.

Table 1 – Exotic Vegetation Cover Percentage Foraging Suitability Value

PERCENTAGE OF EXOTIC VEGETATION	FSV (PERCENT)
Between 0 and 25 Percent Exotics	**100**
Between 25 and 50 Percent Exotics	**64**
Between 50 and 75 Percent Exotics	**37**
Between 75 and 90 Percent Exotics	**3**
Between 90 and 100 Percent Exotics	**0**

Hydroperiod

Hydroperiod of the wetlands potentially affected by a project is an important consideration in determining effects on wood stork foraging habitat due to the dependency of fish and crayfish (potential foraging biomass) on hydroperiod. Wetlands and surface waters within the project area were grouped according to hydroperiod class.

4.0 IMPACTS

Alternative 2 (preferred alternative) extends SR 538 (Poinciana Parkway) from south of CR 532 to north of Sand Hill Road. From CR 532 to I-4, the PPE proposes a 6-lane typical section, expandable to eight (8) lanes. From I-4 to Sinclair Road the proposed typical section consists of four (4) lanes with southbound and northbound Collector-Distributor (CD) systems to provide the connections from I-4 to Sinclair Road. North of the Sinclair Road interchange the northbound and southbound CD systems merge with the SR 429 main lanes and connect with the proposed eight (8) lane expansion of SR 429 extending northward. Fragmentation of habitat will also occur as a result of project construction. This section analyzes the impacts of the proposed project on the wood stork and wood stork foraging habitat.

For assessment purposes, this wood stork biomass analysis addresses the loss of wetlands within the proposed right-of-way of alternatives 1 and 2. For the assessment of the Alternative 1, 141.70 acres of wetlands were analyzed. For the assessment of the Alternative 2, 133.27 acres of wetlands were analyzed.

The analysis determined that Alternative 1 will result in the net loss of 618.58 kg total (fish and crayfish) biomass. Of the 618.58 kg, 4.94 kg of total biomass are from short hydroperiod wetlands and 613.64 kg of total biomass are from long hydroperiod wetlands. The analysis determined that Alternative 2 will result in the net loss of 581.56 kg total (fish and crayfish) biomass. Of the 581.56 kg, 4.79 kg of total biomass are from short hydroperiod wetlands and 576.77 kg of total biomass are from long hydroperiod wetlands. **Table 2** presents the analysis of the impacts to wood stork foraging habitat and forage for both Alternative 1 and Alternative 2 (Preferred Alternative).

Table 2 - Alternative 1 Wood Stork Foraging Analysis Summary

Wood Stork Foraging Analysis Summary – Total Biomass (including Crayfish and Fish)							
Impact Area							
Hydroperiods	**Acres**	**% exotics**	**FSV**	**m^2**	**m^2 suitable**	**Crayfish & fish biomass g/m^2**	**Biomass loss (kg)**
Short Hydroperiod (Class 3)	2.85	0-25	1	11,533.95	11,533.95	1.32	4.95
Long Hydroperiod (Class 6)	138.86	0-25	1	561,925.95	561,925.95	3.36	613.65
Total	**141.71**			**573,459.9**	**573,459.9**		**618.60**

Table 3 - Alternative 2 Wood Stork Foraging Analysis Summary

Wood Stork Foraging Analysis Summary – Total Biomass (including Crayfish and Fish)							
Impact Area							
Hydroperiods	**Acres**	**% exotics**	**FSV**	**m^2**	**m^2 suitable**	**Crayfish & fish biomass g/m^2**	**Biomass loss (kg)**
Short Hydroperiod (Class 3)	2.76	0-25	1	11,169.37	11,169.37	1.32	4.79
Long Hydroperiod (Class 6)	130.51	0-25	1	528,155.23	528,155.23	3.36	576.77
Total	**133.27**			**539,324.60**	**539,324.60**		**581.56**

5.0 MITIGATION

Impacts to wetlands within the preferred alternative will be mitigated for within the CFA of one or more of the affected rookeries or at a regional mitigation bank that has been approved by the USFWS or pursuant to Section 373.4137, F.S. Wetland mitigation will include compensation for the loss of wood stork foraging habitat and prey resulting from construction of the proposed project. Compensation for the loss of wetlands, as well as wood stork habitat and foraging area (short and long term hydroperiod wetlands), will be provided at a state and federal approved mitigation bank.

6.0 SUMMARY

The proposed project study area contains wood stork foraging habitat and is located within the 18.6-mile CFA of three (3) active wood stork nesting colonies: Eagle Nest Park, Gatorland, and Lake Russell. There are 141.71 acres of wetlands that could be utilized by the wood stork for foraging in Alternative 1 and 133.27 acres of wetlands that could be utilized by the wood stork for foraging in Alternative 2. Wood stork foraging biomass productivity is calculated based on hydroperiods of class of affected wetlands. Alternative 1 will impact 2.85 acres of short hydroperiod wetlands and 138.86 acres of long hydroperiod wetlands. Alternative 2 will impact 2.76 acres of short hydroperiod wetlands and 130.51 acres of long hydroperiod wetlands (**Table 2**). Analysis results concluded that the Alternative 1 will result in the net loss of 618.60 kg total (fish and crayfish) biomass and Alternative 2 will result in the net loss of 581.56 kg total (fish and crayfish) biomass. Loss of potential wood stork foraging habitat attributable to the project will be offset by providing the equivalent credits at a USFWS-approved mitigation bank.

7.0 REFERENCES

Deepwater Habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service, Office of Biological Services. Technical Publication FWS/OBS-79/31. 131 pp.

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APPENDIX J
AGENCY COORDINATION

Florida Department of Transportation

RON DESANTIS
GOVERNOR

Florida's Turnpike Enterprise
P.O. Box 613069, Ocoee, FL 34761
407-532-3999

KEVIN J. THIBAULT, P.E.
SECRETARY

FDOT, Office of Environmental Management/Florida's Turnpike Enterprise/U.S. Fish and Wildlife Service Coordination Meeting Minutes

FPID 446581-1-22-01 (Turnpike)
Poinciana Parkway Extension from CR 532 to north of I-4/SR 429 Interchange PD&E
Osceola and Polk Counties

Date: October 27, 2020
Time: 1:00 pm
Venue: TEAMS Meeting

Attendees:
John Wrublik – USFWS
Brittany Bianco – FDOT OEM
Henry Pinzon, PE – FTE
Rax Jung, PhD, PE – FTE
Philip Stein – FTE
Annemarie Hammond – FTE
Stephanie Underwood, PE – HNTB
Doug Zang, AICP – Atkins
Fred Gaines, PWS – Atkins

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1. Introductions

All attendees introduced themselves.

2. Project Overview (map provided)

FTE indicated that the intent of the meeting is to utilize available information including the various agencies' ETDM input to develop the project PD&E scope. This PD&E project will result in a federal environmental document as the project ties in with Interstate 4. FTE provided the overall project description from the ETDM/AN process: "*CFX's Poinciana Parkway currently terminates at the intersection of US 17/92 and County Road 54 (CR 54). As part of a separate CFX effort, the Poinciana Parkway is being extended approximately 1.75 miles north to CR 532. Therefore, this project would complete the remaining 2.5-mile gap in the Poinciana Parkway between CR 532 and I-4 / SR 429.*"

FTE went over the ETDM/AN provided Purpose and Need Statement: "*The purpose of this project is to complete the missing link in the Poinciana Parkway between the planned terminus at County Road 532 (CR 532) to the Interstate 4 (I-4) / State Road 429 (SR 429) interchange. The project will also address future congestion on SR 429 from the I-4 / SR 429 interchange to the SR 429 / Sinclair Road interchange.*"

FTE provided a brief history of the project resulting in various similar projects:

1980/1990 Central Florida Beltway studies
2005 Osceola Co. Comp. Plan – New corridors (Poinciana Parkway Extension /I-4 Connector)
2012 Osceola County Expressway Authority (OCX)) – 2040 Master Plan
2016 FDOT designated Poinciana Pkwy as SR 538. Poinciana Pkwy connected to US 17/92

Mar. 2018 CFX Concept Feasibility Study Completed
July 2018 CFX Poinciana Parkway Ext. PD&E Study (state) from US 17/92 to CR 532 – NTP
Aug. 2019 FTE takes lead on Poinciana Parkway Ext./I-4 PD&E Study per FDOT Secretary direction
Oct. 2019 CFX advanced their Poinciana Parkway Ext. project (design & construction funded)
Spring 2020 CFX Design NTP for Poinciana Parkway Extension, from US 17/92 to CR 532, with Construction in 2022
Dec. 2020 FTE Poinciana Parkway Extension, from CR 532 to I/4/SR 429 Interchange will be under contract to begin the federal PD&E Study (FPID 446581-1).

FTE generally presented pertinent details from ETDM No. 14445 published on September 10, 2020

- Follow NEPA process for environmental document
- USFWS Consultation Area/concerns included potential impacts to the following federal listed species:
  - Wood stork (*Mycteria americana*)
  - Eastern indigo snake (*Drymarchon corais couperi*)
  - Audubon's crested caracara (*Caracara cheriway*)
  - Florida scrub-jay (*Aphelocoma coerulescens*)
  - Skinks
    - Blue-tailed mole skink (*Plestiodon egregius lividus*)
    - Sand skink (*Plestiodon reynoldsi*)
  - Red-cockaded woodpecker (*Leuconotopicus borealis*)
  - Florida grasshopper sparrow (*Ammodramus savannarum floridanus*)
  - Everglade snail kite (*Rostrhamus sociabilis plumbeus*)
  - Federal listed plants (such as but may not be limited to)
    - Britton's bear grass (*Nolina brittoniana*)
    - Lewton's polygala (*Polygala lewtonia*)
    - Florida bonamia (*Bonamia grandiflora*)
    - Scrub buckwheat (*Eriogonum longifolium* var. *gnaphalifolium*)
  - Bald eagle (*Haliaeetus leucocephalus*)

FTE next went over each federally listed species with the proposed PD&E approach.

3. Wood Stork

FTE presented that the project is assumed to be within several wood stork rookeries' Core Foraging Area. FTE is not proposing specific surveys but will document opportunistic observations. FTE will utilize the USFWS Wood Stork Key and recommend suitable mitigation for the preferred alternative as required. USFWS concurred with approach.

4. Eastern Indigo Snake

FTE indicated that the historical records for eastern indigo snake and historical records do not appear to indicate a recent observation within 1 mile of the project. More research will be conducted during the PD&E. FTE is not proposing specific surveys but will document opportunistic observations. FTE will utilize the USFWS Eastern Indigo Snake Key and recommend suitable protection measures for the preferred alternative as required. USFWS concurred with approach.

5. Audubon's Crested Caracara

FTE indicated that research of the available Biological Opinions for surrounding developments and historical records do not appear to reference caracara observations. FTE is not proposing specific surveys but will document opportunistic observations. FDOT/FTE will coordinate with USFWS on this species

relative to the preferred alternative. USFWS concurred with approach.

6. Florida Scrub-jay

FTE indicated that research indicates recent projects in the vicinity have identified scrub jay observations near the southern end of the project area. FTE proposes one seasonal event according to scrub jay guidelines limited to the best habitat within the study area. FDOT/FTE will coordinate with USFWS after the survey is conducted to address the results relative to the preferred alternative. USFWS concurred with approach.

7. Skinks

FTE indicates that the majority of the project area uplands are within the anticipated sand skink soil and elevation criteria requiring consultation. Assuming that most of the developed area has addressed skinks previously, FTE proposes assuming sand/blue-tailed mole skink presence for the purposes of the PD&E and proposes no surveys at this point. The preferred alternative skink involvement will be coordinated with USFWS. USFWS concurred with this approach.

8. Red-cockaded Woodpecker

FTE indicated that research of the available Biological Opinions for surrounding developments and historical records do not appear to reference red-cockaded woodpecker observations. FTE is not proposing specific surveys but will document opportunistic observations. FDOT/FTE will coordinate with USFWS on this species relative to the preferred alternative. USFWS concurred with approach.

9. Florida Grasshopper Sparrow

FTE indicated that research of the available Biological Opinions for surrounding developments and historical records do not appear to reference Florida grasshopper sparrow observations. There is no apparent habitat for the species in the study area, and it appears the closest observations are relatively distant from the study area. FTE is not proposing specific surveys but will document opportunistic observations. FDOT/FTE will coordinate with USFWS on this species relative to the preferred alternative. USFWS concurred with approach.

10. Everglade Snail Kite

FTE indicated that research of the available Biological Opinions for surrounding developments and historical records do not appear to reference everglade snail kite observations. There is no apparent habitat for the species in the study area, and it appears the closest observations are relatively distant from the study area. FTE is not proposing specific surveys but will document opportunistic observations. FDOT/FTE will coordinate with USFWS on this species relative to the preferred alternative. USFWS concurred with approach.

11. Florida Bonneted Bat

FTE indicated that the project not in FBB Consultation Area and the species will not be addressed as part of the project. USFWS concurred with approach.

12. Federal Protected Plants

FTE will conduct opportunistic surveys for federal listed plant species while in the study area. FDOT/FTE will coordinate results with USFWS relative to the preferred alternative. USFWS concurred with approach.

13. Bald Eagle

FTE indicated that research into the current and historical bald eagle nest database will be reviewed. Any

potential impacts identified relative to the preferred alternative will be coordinated with USFWS Bald Eagle group. USFWS concurred with approach.

14. Wildlife Habitat Connectivity

FTE noted that there is significant planned and constructed development in the study area. There are conservation easements to SFWMD associated with some uplands and most wetland systems on the middle and western portion of the study area (Reunion and Celebration/RCID). More detailed permit research will be conducted to identify the conservation easement holders within the preferred alternative. Bridging of more substantial wetland systems will be considered for hydrologic concerns, but since the systems are not under state/federal resource agency control the potential for wildlife crossings is limited according to FDOT wildlife corridor guidelines. FTE will consider wildlife enhancements at any preferred alternative wetland bridge crossings. USFWS concurred with approach indicating that no specific wildlife crossings are requested at this time and agreed that wildlife enhancements be considered at the wetland bridge crossings.

15. Roundtable/Questions/Comments

There were no additional discussion items.

MEETING MINUTES
USFWS/FDOT COORDINATION MEETING

FPID: 446581-1-22-01 Poinciana Parkway Extension
from CR 532 to North of I-4/SR 429 Interchange
Osceola and Polk Counties, Florida
Contract Number CAB30

PROJECT MANAGER:	Stephanie Underwood, PE
PD&E CONSULTANT:	RS&H
CONSULTANT PM:	Doug Reed, PE
SUBCONSULTANTS:	American Acquisition Group, Cotleur & Hearing, Diversified Professional Services Corp, ECHO UES, Florida Transportation Engineering, IF Rooks, Janus Research, Kimley-Horn & Associates, Inc. (KHA), Patel, Greene & Associates, Tierra, Inc.
DATE:	Thursday, October 21, 2021, 8:30 am TEAMS Meeting
MEETING LOCATION:	Microsoft Teams Meeting

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1. **Attendees**

Fred Gaines (FTE)	Annemarie Hammond (FTE)	Tiffany Crosby (FTE)	Doug Reed (RS&H)
Philip Stein (FTE)	Doug Zang (FTE)	John Wrublik (USFWS)	Ramon Breton (KHA)

2. **PPE Project Summary**
   After introductions, Fred Gaines showed the Project Location Map (attached) and briefly explained the Poinciana Parkway Extension (PPE) PD&E Study project, noting that this is not yet in permitting phase.

   Previous discussions with USFWS resulted in the decision to assume sand skink presence and perform a survey for scrub jays in the Type 1 (prime) habitat areas near or potentially affected by the proposed improvements.

3. **Potential Scrub Jay Habitat**
   Fred Gaines displayed Figure 1 (attached) showing a map of the original study area in red, the proposed alignment footprint in yellow, and FLUCFCS land use codes within the study area, including Type 1 Optimal and Sub-Optimal scrub-jay habitat and Type III Habitat. The 1993 scrub-jay observation location along CR 532 within a mile of the project was also shown on the map. Fred explained that the alignment location was developed to minimize or avoid the existing Reunion and Celebration developments and the planned development of Mattamy Homes. In doing so, areas of Optimal and Sub-Optimal Type 1 habitat (FLUCFCS 320) would be within the proposed roadway footprint.

4. **Proposed Survey Stations**
   Fred then presented Figure 2 (attached) showing six survey stations proposed for survey within three areas of Optimal Type 1 Habitat within and near the proposed alignment. It was noted that Reunion had surveyed the area in the past and not found any scrub-jays. That data will be requested and referenced in the PD&E study. John Wrublik agreed that the survey approach was acceptable. Fred also noted that we are in the PD&E phase. Should a build alternative be recommended, a different process may be proposed for the permitting phase.

5. **Other Discussion – None**

RON DESANTIS
GOVERNOR

Florida Department of Transportation
Florida's Turnpike Enterprise
P.O. Box 613069, Ocoee, FL 34761
407-532-3999

KEVIN J. THIBAULT, P.E.
SECRETARY

MEETING MINUTES
FTE/FDEP PRE-APP COORDINATION MEETING
Poinciana Parkway Extension PD&E Study from CR 532 to North of I-4
FPID No.: 446581-1-22-01
Western Beltway (SR 429) Widening PD&E Study from North of I-4 to Seidel Road
FPID No.: 446164-1-22-01

Osceola and Orange Counties County, Florida
Monday, April 11, 2022, 9:00 am

I. Attendees:

FTE
Henry Pinzon (PD&E)
Rax Jung (Project Dev. Engineer/EMO)
Philip Stein (Environmental)
Annemarie Hammond (Environmental Permits Coordinator)
Erin Yao (Drainage Engineer)

FDEP
Teayann Duclos (Environmental Manager)
Jennipher Walton (Env. Specialist)
Leo Anglero (ERP/Stormwater)
Allan Popak (Environmental Specialist)
Lindsay Furr (Environmental Consultant)
Jill Farris (Environmental Consultant)

FTE/GEC
Stephanie Underwood (PM/HNTB GEC)
Fred Gaines (Permitting/Atkins GEC)
Adriana Kirwan (Drainage/HNTB GEC)
Tiffany Crosby (Senior Scientist/Atkins GEC)

RS&H Team
Douglas Reed (RS&H PM)
Erik Scott (RS&H Drainage)
Sarah Johnson (KHA/Environmental)

FDOT Central Office
Jonathan Turner (Project Delivery Coordinator)

FDOT District 5
Casey Lyon (Env. Permits Coordinator)

II. Introductions

The meeting started with FDOT District 5 discussed their projects with FDEP. After attendees were introduced, Stephanie Underwood explained the purpose of the meeting was to initiate pre-application coordination with the Florida Department of Environmental Protection for the two Project Development and Environment (PD&E) studies.

III. PowerPoint presentation

Erik Scott explained the two projects with a PowerPoint presentation and separate exhibits (attached). Discussion is summarized below.

Widen Western Beltway PD&E Study:

- The PD&E study was summarized, including existing conditions and the proposed widening of SR

429 from four to eight-lanes from north of I-4 to Seidel Road. Improvements are also proposed at the existing interchanges at Sinclair Road, US 192, Western Way, and Seidel Road. A new interchange is proposed at Livingston Road. It was noted that this is early in the process in the PD&E phase, and not the Design phase, so a permit application is not imminent.

- FDEP and Reedy Creek Improvement District (RCID) permitted SR 429 in 2001. FTE is coordinating with RCID.
- The existing water quality volume was calculated based on the criteria of 1-inch over the contributing basin or 2.5-inches over the impervious area. For most of the basins the 1-inch over the contributing area was the controlling factor for the required water quality. This is due in part because the existing corridor was in located within a rural corridor and offsite areas were included in the contributing basin calculation. Since 2001, some of the offsite areas have been developed with new, offsite ponds. Therefore, when adding the additional pavement along SR 429 for the eight-lane configuration, most of the basins still have sufficient water quality volume provided in the existing ponds. For any basins lacking the required water quality volume within the existing permitted ponds, the difference will be accommodated by adjusting the existing control structures or providing additional pond area.
- Basin boundaries will be revised to reflect the development adjacent to SR 429.
- The project study area is located within two impaired WBIDs, Davenport Creek for bacteria and Whittenhorse Creek for dissolved oxygen. In addition, the project study is located within the Lake Okeechobee Subwatershed BMAP. FTE believes that additional treatment is not required given FDOT BMPs include a series of treatment trains and their facilities do not directly discharge into the impaired waterbodies. FDEP stated that additional treatment considerations may not be necessary because they are moving away from the 50% additional treatment volume but will need to be discussed further during the design phase.
- Attenuation will be provided per FDEP criteria for open and closed basins, with consideration for RCID requirements.
- FDEP agreed this stormwater approach is reasonable.
- The corridor has floodplains associated with Boggy Creek and Whittenhorse Creek. There is one existing Floodplain Compensation site located north of Indian Creek Boulevard adjacent to the southbound lanes. Though encroachments are anticipated, they will be minimal. Encroachments will be mitigated by compensation sites or by using the importer/exporter method.
- FTE confirmed with FDEP that the Environmental Resource Permit (ERP) for widening of Western Beltway (SR 429) will be handled by FDEP. This includes the 404 permit.
- Wetland lines from the previous permit will be used as much as possible in areas that are not new interchanges. Direct wetland impacts are approximately 10 acres.
- Conservation easements are located within the project study area.
- Wetlands and conservation easements impacts will be avoided and minimized as much as possible. Some minimization methods considered include bridging or MSE walls.
- Impacts to most species is minimal along the existing roadway; however, there is suitable sand skink habitat to be considered especially within the new interchange area.
- Mitigation banks are located within the available service area for this project to offset any unavoidable wetland impacts.
- Coordination with USFWS for species involvement occurred in 2021.
- There were no questions, but if any questions arise, additional coordination can occur.

Poinciana Parkway Extension PD&E Study:

- The PD&E study was summarized, including existing conditions; the proposed new six-lane expressway on new alignment; and interchanges at CR 532, I-4, and Sinclair Road. The new

alignment crosses Davenport Creek on bridge structure.

- There are two alternatives, but the worst-case Alternative 1 was discussed.
- FTE clarified with FDEP that they anticipated that SFWMD would be responsible for issuing the ERP and FDEP would be responsible for reviewing and issuing the 404 permit.
- The team depicted the wetlands and conservation areas within the study area.
- Wetland lines from the previous permits will be used as much as possible in existing roadway areas; new wetland lines will be set in the new alignment area. Direct wetland impacts range from 131 acres to 141 acres for the alternatives. Approximately 130 acres of direct impacts will be minimized with bridges and MSE walls.
- Conservation easements for RCID and Reunion are present within and adjacent to the project study area.
- Wetlands and conservation easements impacts will be avoided and minimized as much as possible. Some minimization methods considered include bridging or MSE walls.
- FTE has already met with USFWS in October 2020 and again in October 2021. A scrub jay survey was completed in October 2021, however; there were no observations of scrub-jays as a result of the survey. Suitable sand skink habitat is located within the project study area and sand skink tracks were observed during pedestrian transects.
- We will coordinate with FWC for state-listed species.
- Mitigation banks are located within the available service area for this project to offset any unavoidable wetland impacts. FDEP confirmed with FTE that mitigation banks should be utilized for wetland mitigation as the 1st priority and followed by other options after this measure. Impacts to conservation easements should be a last resort. Should the release of a Conservation Easement or an impact to a Conservation Easement be necessary, FDEP has asked that FTE coordinate with FDEP early in the design development given the process is different than that of mitigation banks.
- FTE indicated that the avoidance and minimization measures mentioned previously is standard and considered adequate; FDEP indicated that FTE is on the right track

MEETING MINUTES
FTE/RCID AGENCY COORDINATION MEETING
Poinciana Parkway Extension PD&E Study from CR 532 to North of I-4
FPID No.: 446581-1-22-01
Western Beltway (SR 429) Widening PD&E Study from North of I-4 to Seidel Road
FPID No.: 446164-1-22-01

Osceola and Orange Counties County, Florida
Wednesday, May 19, 2021, 1:00 pm

I. Attendees:

Henry Pinzon (FTE PD&E)	Erin Yao (FTE/Drainage)	Rax Jung (FTE Project Dev. Eng./EMO)	Douglas Reed (RS&H PM)
Stephanie Underwood (FTE PM)	Doug Zang (FTE/Environmental)	Annemarie Hammond (FTE/Env. Permit Coordinator)	Erik Scott (RS&H Drainage)
Ramon Breton (KHA, DPM 446581)	Fred Gaines (FTE/Permitting)	Clif Tate (KHA/Engineering)	Sarah Johnson (KHA/Environmental)
Adriana Kirwan (FTE/Drainage)		Kate Kolbo (RCID Planning/Engineering)	

II. Introductions

Stephanie introduced the Florida Turnpike Enterprise (FTE) staff and explained the purpose of the meeting was to coordinate with the Reedy Creek Improvement District (RCID). RS&H team staff was introduced followed by the RCID staff. John Classe (RCID District Administrator and Sam Dewes (RCID Roadway) were not in attendance.

III. PowerPoint presentation

Doug Reed went through a PowerPoint presentation (attached), which was sent to RCID after the meeting. Discussion is summarized below.

a. Slide 7: Kate Kolbo explained that there are no set procedures if the Wildlife Management Conservation Area (WMCA) is impacted. It was set up in 1966 as a major floodway to never be impacted. Although two crossings were anticipated, including I-4. Poinciana Parkway would also be an exemption. However, there cannot be any adverse impacts to the existing flow rates. Most flows are north to south, except for Reunion which flows south to north. Major cross drains will be required along the utility "stair step" area to maintain flows.

   Sarah Johnson pointed out the two graphics were slightly different and asked which one is correct. Kate Kolbo will send the CADD file for the correct WMCA limits to Stephanie Underwood, who will distribute it to the team. Kate mentioned that they use a different datum and they will convert it to NAVD88 before sending.

   Fred Gaines asked if any easements had been transferred to other owners. Kate responded that none had been transferred.

b. Slide 15: Kate indicated that the system is well defined. The cross section is fixed, canals cannot be widened, and drainage structures cannot be modified. Therefore, the flow cannot be increased. Any additional runoff must flow elsewhere. Stephanie Underwood suggested pre-post flows should be ok. Kate responded that it may not

be, depending on the definition off pre-post, but she will send the stipulations to Stephanie. The Reedy Creek system is based on 13 cfm/sq mile, and they are already exceeding that volume. Anything over that will require a fee. Kate mentioned that I-4 Beyond the Ultimate (BtU) project is attenuating to below the pre-post volume.

Fred Gaines mentioned that Turnpike had already paid a fee for SR 429 during the original construction.

Erik Scott asked about the permit process. Kate responded that a SFWMD permit application should be sent to RCID first for review and approval before being submitted to South Florida Water Management District (SFWMD). RCID will then send SFWMD a letter explaining the negotiation points and expressing support.

Kate mentioned that RCID uses a different rainfall distribution than SFWMD with a 50 yr/72 hr event. Erik asked about the unit hydrograph, and Kate will send Stephanie the RCID drainage person's contact information who can provide the information.

Erik mentioned we anticipate staying below the 290 cfs that was used previously. Kate will pull the permit and modifications can be worked through. Kate also mentioned they would require an initial 30-day review period to provide comments or questions. The Turnpike's team will provide information for RCID to feed into the model. Kate also mentioned they will review the projects even if outside the RCID boundary as long as it is within the watershed.

Erik asked if there were any other entities that were interested in taking additional water. Kate responded that there were none.

Fred asked if RCID can provide conceptual approval since this is PD&E and we are not submitting an actual permit until a later phase. Kate responded that conceptual approval can be granted.

The bottom line was reiterated:

- Stay out of the WMCA, and
- Do not discharge more flow into RCID

IV. Action Items

a. Doug Reed will prepare meeting minutes. (done)
b. Kate Kolbo will send the CADD files for the correct WMCA limits and flow stipulations. (done)

MEETING MINUTES
FTE/RCID AGENCY COORDINATION MEETING #2
Poinciana Parkway Extension PD&E Study from CR 532 to North of I-4
FPID No.: 446581-1-22-01
Western Beltway (SR 429) Widening PD&E Study from North of I-4 to Seidel Road
FPID No.: 446164-1-22-01

Osceola and Orange Counties County, Florida
Thursday, March 3, 2022, 10:00 am

I. Attendees:

Henry Pinzon (FTE PD&E)	Todd Rimmer (Walt Disney Planning)	Rax Jung (FTE Project Dev. Eng./EMO)	Douglas Reed (RS&H PM)
Stephanie Underwood (FTE PM)	Emam Emam (FTE/Planning/Traffic)	Philip Stein (FTE/Environmental)	Erik Scott (RS&H Drainage)
Ramon Breton (KHA, DPM 446581)	Fred Gaines (FTE/Permitting)	Clif Tate (KHA/Engineering)	Matt Betancourt (RS&H Public Inv.)
Katherine Luetzow (RCID)	Sarah Johnson (KHA/Env)	Kate Kolbo (RCID Planning/Eng)	Rick Langlass (RS&H DPM/Eng.)
Sandy Morales (RCID)			

II. Introductions

Stephanie introduced the Florida Turnpike Enterprise (FTE) staff and explained the purpose of the meeting was to continue coordination with the Reedy Creek Improvement District (RCID) on the two PD&E studies. The RS&H team and RCID was also introduced.

III. PowerPoint presentation

Doug Reed went through a PowerPoint presentation. Discussion is summarized below.

Poinciana Parkway Extension PD&E Study and Drainage Design:

Erik Scott outlined the anticipated worst—case encroachment into Whittenhorse Creek with the proposed 8-lane typical. Kate Kolbo requested the hydraulic model FTE is using to evaluate the HGL. RS&H does not anticipate any changes to the Boggy Creek culvert. Davenport Creek will be bridged

Kate Kolbo indicated that FTE is not required to use a specific hydraulic model, but all modeling (electronic executable files) would need to be submitted for RCID review.

Todd Rimmer indicated that the CADD files would be requested from Mattamy Homes for the Celebration Island Village site plan.

Erik Scott requested the RCID model for use. Kate Kolbo agreed to send it after the meeting.

Kate Kolbo suggested the permit request should be submitted to RCID before submitting to the South Florida Water Management District (SFWMD).

The fee structure of $4.15 per acre/csm is still applicable. The $200/acre is also still

applicable for the portion of the project located within the RCID boundary if runoff drains into RCID. The original permits will be reviewed and fees will be assessed based on the improvements.

It was noted that the easements are water management first and foremost, then wildlife conservation.

Todd Rimmer asked if the two Poinciana Parkway Extension alternatives operate similarly. The response was yes, the configuration differs, but operations are similar. Todd also suggested the relocation of utilities be included in the evaluation and footprint.

Historical storage must be preserved as this area serves a large area of Osceola and Orange counties. Flood storage is critical.

Kate Kolbo will send the latest GIS files for the most up to date information on the jurisdictional and water management conservation area limits. A separate meeting can be set up to go through the information.

<u>Widen Western Beltway PD&E Study:</u>
Todd Rimmer indicated they are looking at 2040 traffic models for Western Way due to its connection into Lake County. Emam Emam indicated he can share the Synchro files which have been coordinated with District 5 and FDOT Central Office.

Bike and pedestrian facilities can be removed from Western Way since other means (i.e. shuttles) are being incorporated by Disney for bike and pedestrian accommodations. This will ultimately be safer due to the free flow ramp movements.

RCID is evaluating widening Western Way to six lanes. Funding is included in the 10-year plan.

It was noted that Disney was not invited to the Reunion Coordination meeting scheduled for March 10, 2022.

In general, it was agreed that Poinciana Parkway Extension Alternative 2 has reduced direct and indirect impacts to RCID resources compared to Alternative 1.

IV. Action Items
   a. Doug Reed will prepare meeting minutes. (done)
   b. Kate Kolbo will send the RCID model.
   c. Stephanie Underwood will send the HEC-RAS and Synchro models.

RON DESANTIS
GOVERNOR

Florida Department of Transportation
Florida's Turnpike Enterprise
P.O. Box 613069, Ocoee, FL 34761
407-532-3999

KEVIN J. THIBAULT, P.E.
SECRETARY

MEETING MINUTES
FTE/SFWMD PRE-APP COORDINATION MEETING
Poinciana Parkway Extension PD&E Study from CR 532 to North of I-4
FPID No.: 446581-1-22-01

Osceola and Polk Counties County, Florida
Wednesday, April 13, 2022, 2:00 pm

I. Attendees

Florida's Turnpike Enterprise (FTE)
Henry Pinzon (Environmental Management Engineer)
Rax Jung (Project Dev. Engineer/EMO)
Annemarie Hammond (Environmental Permits Coordinator)
Erin Yao (District Drainage Engineer)

FTE/GEC
Stephanie Underwood (PM/HNTB GEC)
Fred Gaines (Permitting/Atkins GEC)
Adriana Kirwan (Drainage/HNTB GEC)
Doug Zang (Noise/Atkins GEC)

SFWMD
Patricia Therrien (Lead Eng/Env Review)
Richard Lott (Engineering)
Lisa Prather (Section Leader/Environmental)
Richard Walker (Reg. Information Specialist)

FDEP
Lee Anglero (ERP)

RS&H Team
Douglas Reed (RS&H PM)
Erik Scott (RS&H Drainage)
Sarah Johnson (KHA/Environmental)

II. Introduction

After introductions, Erik Scott went through the agenda (attached to meeting request) and explained this is a PD&E study, so no permit application is imminent. He then went through a PowerPoint presentation (attached) that started with an introduction to the Poinciana Parkway Extension (PPE) Project Development and Environment (PD&E) Study from CR 532 to north of the I-4/SR 429 interchange. The project is a new six-lane expressway with interchanges at CR 532, I-4, and SR 429/Sinclair Road. At the south end, PPE ties into the Central Florida Expressway Authority (CFX) Poinciana Parkway, which is currently in the Design Phase south of CR 532. At the north end, PPE ties into the SR 429/Western Beltway Widening PD&E Study from north of I-4 to Seidel Road. PPE has Independent Utility, so it provides benefits even if the Poinciana Parkway is not constructed and the Western Beltway is not widened.

III. Drainage Discussion

Erik Scott stated that treatment would be provided for the improvements utilizing the criteria of 1-inch over the developed area or 2.5-inches over the impervious, which ever is greater. It was noted that the interchange and SR 429 to the north are currently permitted by FDEP and RCID. New water quality volumes will be computed using the criteria and compared against permitted water quality volumes. Should there be a deficiency, additional water quality volume will be provided in new ponds or in existing ponds with modified control structures.

Erik Scott explained that the project was located within a WBID impaired for bacteria (fecal), as well as being within the Lake Okeechobee Watershed BMAP. FTE believes that additional treatment is not required given FDOT BMPs include a series of treatment trains and their facilities do not directly discharge into the impaired waterbodies. SFWMD stated that phosphorus should still be analyzed to ensure a net reduction. Fred Gaines indicated that this is consistent with what FTE has been doing. Additionally, if the implemented BMPs have a net reduction in phosphorus it is implied that other impairments such as bacteria will be sufficiently reduced. SFWMD recommended that an additional pre-application meeting be held during the design phase to verify the design criteria closer to the time of permitting.

The PD&E Team met with FDEP on 4/11/22, and Lee Anglero was invited to this meeting.

Erik Scott indicated that the Davenport Creek floodplain would be bridged so there would be no impacts, and improvements along SR 429 would have minimal floodplain impacts. Unavoidable floodplain impacts would be mitigated using floodplain compensation sites. SFWMD stated that they would accept the "cup-for-cup" methodology.

IV. Environmental Discussion

Sarah Johnson displayed a wetlands graphic (attached) and explained the blue color indicates wetlands, yellow indicates surface water/ditches. Wetland impacts will be minimized or avoided using MSE walls and bridges.

There are Conservation Easement areas managed by Reunion, SFWMD, and RCID within the project study area. SFWMD stated that it has been difficult to process the release of conservation easements and that currently they are not accepting mitigation credits as the mitigation option for releasing CEs. Fred Gaines asked if a "swap", impacting one area and providing an equal compensation area nearby for the same system, is a potential option. Lisa Prather stated that swaps are a release which is not guaranteed to gain approval through the SFWMD Board. SFWMD stated that it was their understanding that impacting a Reedy Creek Improvement District (RCID) conservation easement was not possible. Fred Gaines reminded attendees that the permit is still 2-3 years out. Bridging the conservation area may be another potential option, but the Board will review and make that decision. The Executive Director could be consulted for input in advance. Impacts should be minimized to the greatest extent possible. It was also noted that privately held (Reunion) conservation easements are not as big of a challenge. Lisa Prather suggested that any potential swap areas would need to be connected to the same site/wetland and have an equal or greater functional value.

FTE met with USFWS previously. A scrub jay survey was conducted in October 2021. The Team will coordinate with FWC for state-listed species.

V. Other Discussion

SFWMD stated that using the 10-yr/72-hr storm event is an option in Osceola County for water quantity. RS&H staff will review existing SR 429 permits and utilize the same storm event for the purposes of SFWMD permitting. *It should be noted that RCID has a more stringent water quantity requirement that will dictate the overall design.*

Patricia Therrien asked when the Bridge Hydraulic Report would be completed. Erik Scott responded that it is not done in the PD&E phase, it is done is Final Design. Some ramps need to at a higher elevation due to interchange profiles, so bridges are an option to maintain conveyance and keep flow rates and velocity rates similar to existing and avoid erosive velocities.

FTE asked if SFWMD would be responsible for permitting the new alignment and the I-4 Interchange improvements previously permitted by FDEP. FDEP will still be responsible for permitting the portions of the

existing SR 429 corridor and the I-4 interchange previously permitted by FDEP. An additional pre-application meeting can be held during the Design phase to determine the exact limits of the FDEP ERP and the SFWMD ERP.