

NATURAL RESOURCES EVALUATION

Florida Department of Transportation

Florida's Turnpike Enterprise

Central Polk Parkway East PD&E Study

From US 17/92 to Poinciana Connector (SR 538)

Polk County, Florida

Financial Management Number: 451419-1

ETDM Number: 14524

October 2025

DRAFT

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Executive Summary

The Florida Department of Transportation (FDOT) Florida's Turnpike Enterprise (Enterprise) is conducting a Project Development and Environment (PD&E) Study to evaluate an approximately eight-mile new tolled, multi-lane, limited access highway referred to as the Central Polk Parkway (CPP) East. The PD&E study area extends from US 17/92, south of the Power Line Road extension, to the future Poinciana Connector (State Road (SR) 538), with the CSX railroad delineating the western study area boundary. The Poinciana Connector, under development by FDOT, will be a new tolled limited access highway extending from CR 532 to Interstate 4 (I-4) and SR 429. Once completed it will provide a regional link between the Poinciana Parkway in Osceola County, currently under design by the Central Florida Expressway Authority (CFX) and I-4 at the SR 429 interchange. Access points to/from CPP East will be evaluated at US 17/92, the future Poinciana Connector, and at a potential intermediate location. Multi-modal transportation improvements including a shared use path will be evaluated. Most of the study area is located in northeast Polk County, with a small section extending into Osceola County as shown on **Figure 1.1.1**.

The Preferred alternative is anticipated to require an Environmental Resource Permit from the South Florida Water Management District and/or Southwest Florida Water Management District (depending on project segmentation and the location of improvements/impacts) for impacts to wetlands and Other Surface Waters as well as for project improvements. A US Army Corps of Engineers Section 404 permit will be required for any impacts to wetlands and Other Surface Waters under Federal jurisdiction at the time of permitting.

Protected Species and Habitat

The 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 Part 2, Chapter 16 of the PD&E Manual. The following sections summarize the effect determinations that have been made for each federal- and state-managed/protected species based upon their probability ranking and the implementation measures and/or commitments to offset any potential impacts to each species and potential impacts to wetlands and other surface waters. The Enterprise will initiate technical assistance with the USFWS to confirm these effect determinations.





Table ES-1 lists the federally listed wildlife and plant species known to occur within Polk and Osceola Counties that could potentially occur near the study area based on potential availability of suitable habitat and known ranges. Table ES-2 lists the state listed wildlife and plant species.

Table ES-0-1: Federally Listed Species with the Potential to Occur

Species	Common Name	USFWS Status	Effect Determination
<i>Caracara plancus</i>	Crested Caracara	T	May affect, but not likely to adversely affect
<i>Laterallus jamaicensis ssp. Jamaicensis</i>	Eastern Black Rail	T	May affect, but not likely to adversely affect
<i>Rostrhamus sociabilis plumbeus</i>	Everglade snail kite	E	May affect, but not likely to adversely affect
<i>Aphelocoma coerulescens</i>	Florida scrub-jay	T	May affect, but not likely to adversely affect
<i>Picoides borealis</i>	Red-cockaded woodpecker	T	May affect, but not likely to adversely affect
<i>Mycteria americana</i>	Wood stork	T	May affect, but not likely to adversely affect
<i>Danaus plexippus</i>	Monarch butterfly	C	--
<i>Eumops floridanus</i>	Florida bonneted bat	E	May affect, but not likely to adversely affect
<i>Perimyotis subflavus*</i>	Tri-colored bat	E	May affect, but not likely to adversely affect
<i>Alligator mississippiensis</i>	American Alligator	T (S/A)	No effect
<i>Eumeces egregius lividus</i>	Blue-tailed Mole Skink	T	May affect
<i>Drymarchon couperi</i>	Eastern indigo snake	T	May affect, but not likely to adversely affect
<i>Neoseps reynoldsi</i>	Sand skink	T	May affect
<i>Crotalaria avonensis</i>	Avon park harebells	E	No effect
<i>Nolina brittoniana</i>	Britton's beargrass	E	No effect
<i>Warea carteri</i>	Carter's mustard	E	No effect
<i>Ziziphus celata</i>	Florida ziziphus	E	No effect
<i>Hypericum cumulicola</i>	Highlands scrub hypericum	E	No effect
<i>Polygala lewtonii</i>	Lewton's polygala	E	No effect
<i>Paronychia chartacea</i>	Papery whitlow-wort	T	No effect
<i>Chionathus pygmaeus</i>	Pygmy fringe-tree	E	No effect
<i>Polygonella myriophylla</i>	Sandlace	E	No effect
<i>Liatris ohlingerae</i>	Scrub blazingstar	E	No effect
<i>Eriogonum longifolium</i> var. <i>gnaphalifolium</i>	Scrub buckwheat	T	No effect
<i>Dicerandra frutescens</i>	Scrub mint	E	No effect



Table ES-1: Federally Listed Species with the Potential to Occur (Continued)

Species	Common Name	USFWS Status	Effect Determination
<i>Conradina brevifolia</i>	Short-leaved rosemary	E	No effect
<i>Polygonella basiramia</i>	Wireweed	E	No effect

Ranking: E – endangered, T – threatened, C – candidate, T (S/A) – threatened by Similarity of Appearance* - Proposed species for federal listing as Endangered

Sources:

- (1) USFWS – U.S. Fish and Wildlife Service status, Official lists of Threatened and Endangered species, 50 CFR 17.11
 (2) Federally Listed Species in Polk County and Osceola County, Florida | <https://ecos.fws.gov/ecp/species-reports>

Table ES-2: State Listed Species with the Potential to Occur

Species	Common Name	FWC/FDACS Status	Effect Determination
<i>Athene cunicularia floridana</i>	Florida burrowing owl	T	NAEA
<i>Egretta caerulea</i>	Little blue heron	T	NAEA
<i>Egretta tricolor</i>	Tricolored heron	T	NAEA
<i>Falco sparverius paulus</i>	Southeastern American kestrel	T	NAEA
<i>Grus canadensis pratensis</i>	Florida sandhill crane	T	NAEA
<i>Platalea ajaja</i>	Roseate spoonbill	T	NAEA
<i>Gopherus poluphemus</i>	Gopher tortoise	T	NAEA
<i>Lampropeltis extenuata</i>	Short-tailed snake	T	NAEA
<i>Pituophis melanoleucus mugitus</i>	Florida pine snake	T	NAEA
<i>Agrimonia incisa</i>	Incised groove-bur	T	NAEA
<i>Arnoglossum diversifolium</i>	Variable- leaved Indian-plantain	T	NAEA
<i>Calamintha ashei</i>	Ashe's savory	T	NAEA
<i>Calopogon multiflorus</i>	Many- flowered grass-pink	E	NAEA
<i>Carex chapmanii</i>	Chapman's sedge	T	NAEA
<i>Centrosema arenicola</i>	Sand butterfly pea	E	NAEA
<i>Coelorachis tuberculosa</i>	Piedmont jointgrass	T	NAEA
<i>Hartwrightia floridana</i>	Hartwrightia	T	NAEA
<i>Illicium parviflorum</i>	Star anise	E	NAEA
<i>Lechea cernua</i>	Nodding pinweed	T	NAEA
<i>Litsea aestivalis</i>	Pondspice	E	NAEA
<i>Matelea floridana</i>	Florida spiny-pod	E	NAEA



Table ES-2: State Listed Species with the Potential to Occur (Continued)

Species	Common Name	FWC/FDACS Status	Effect Determination
<i>Nemastylis floridana</i>	Celestial lily	E	NAEA
<i>Nolina atopocarpa</i>	Florida beargrass	T	NAEA
<i>Panicum abscissum</i>	Cutthroat grass	E	NAEA
<i>Paronychia chartacea</i>	Paper-like nailwort	E	NAEA
<i>Pteroglossaspis ecristata</i>	Giant orchid	T	NAEA
<i>Salix floridana</i>	Florida willow	E	NAEA
<i>Schizachyrium niveum</i>	Scrub bluestem	E	NAEA

Ranking: E – endangered, T – threatened, NAEA= No Adverse Effect Anticipated

Wetland Evaluation

Wetlands and other surface water habitat types anticipated to be impacted by the proposed construction include natural wetlands and manmade waterways, streams, lakes, reservoirs, mixed wetland hardwoods, exotic wetland hardwoods, wetland forested mixed, wetland scrub, and freshwater marshes. Alternative 1 (Co-Located) would impact 66.3-acres of wetlands and surface waters and Alternative 2 (New Alignment) would impact 73.32-acres of wetlands and surface waters. Wetland impacts which result from the construction of the build alternative 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 the build alternative will be completed through the use of mitigation banks and other mitigation options that satisfy state and federal requirements.

Essential Fish Habitat

This project will have no effect on Essential Fish Habitat.



1.0 Project Summary

1.1 Project Description

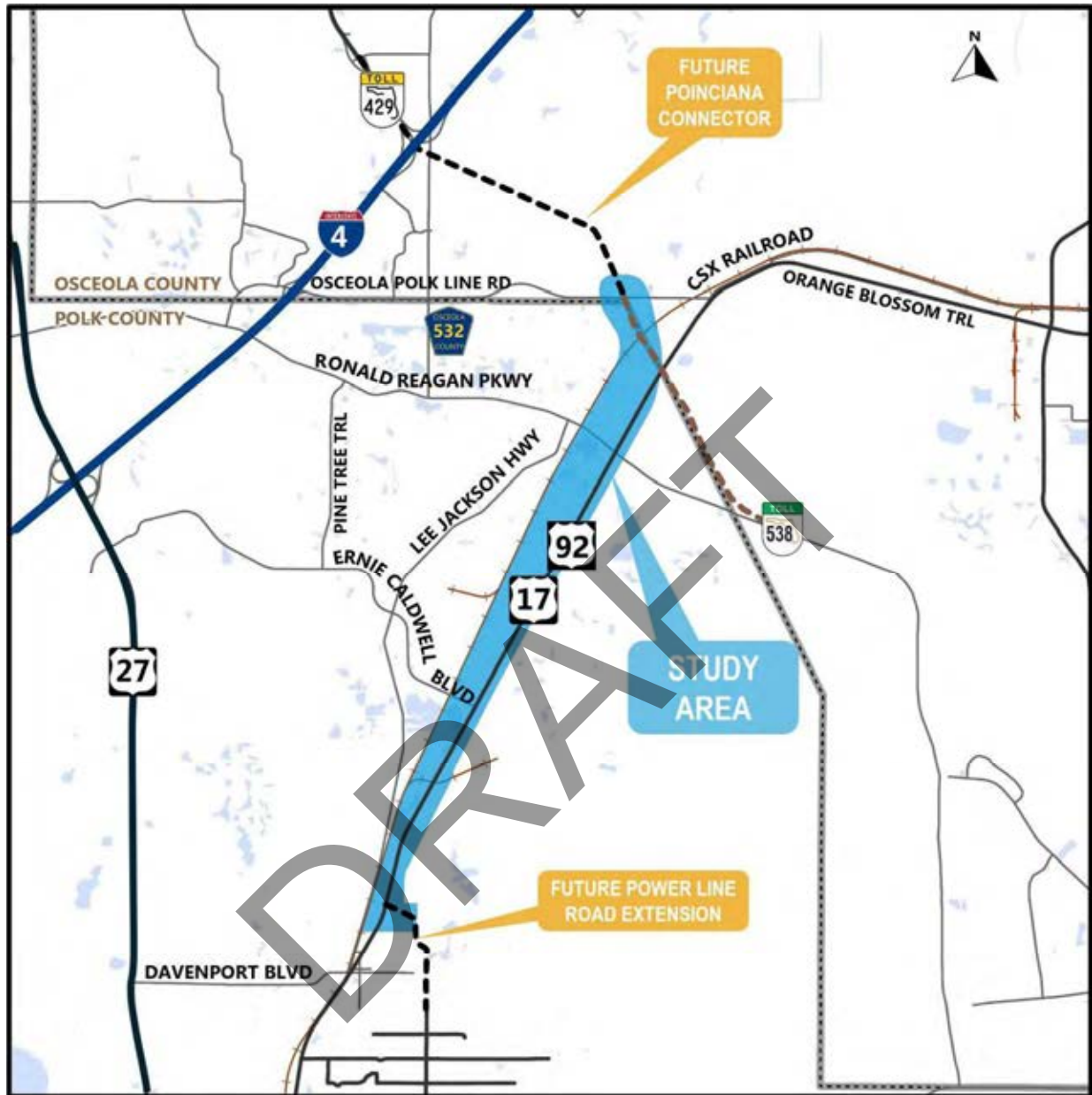
The Florida Department of Transportation (FDOT) Florida's Turnpike Enterprise (Enterprise) is conducting a Project Development and Environment (PD&E) Study to evaluate an approximately eight-mile new tolled, multi-lane, limited access highway referred to as the Central Polk Parkway (CPP) East. The PD&E study area extends from US 17/92, south of the Power Line Road extension, to the future Poinciana Connector (State Road (SR) 538), with the CSX railroad delineating the western study area boundary. The Poinciana Connector, under development by FDOT, will be a new tolled limited access highway extending from CR 532 to Interstate 4 (I-4) and SR 429. Once completed it will provide a regional link between the Poinciana Parkway in Osceola County, currently under design by the Central Florida Expressway Authority (CFX) and I-4 at the SR 429 interchange. Access points to/from CPP East will be evaluated at US 17/92, the future Poinciana Connector, and at a potential intermediate location. Multi-modal transportation improvements including a shared use path will be evaluated. Most of the study area is located in northeast Polk County, with a small section extending into Osceola County as shown on **Figure 1.1.1**.

1.2 Purpose and Need

The purpose of this project is to meet existing and future regional travel demands by providing an additional north-south facility that will enhance mobility and increase accessibility to the regional roadway network and improve emergency evacuation and response times.

The need for the CPP East includes accommodating population growth and the associated travel demands, improving regional connectivity and overall system linkage, enhancing freight mobility and economic competitiveness, and enhancing safety, emergency evacuation and response.

Figure 1.1.1: Project Location Map





1.3 Alternatives Analysis

A No-Build and two Build Alternatives were developed and evaluated to meet the project's purpose and need.

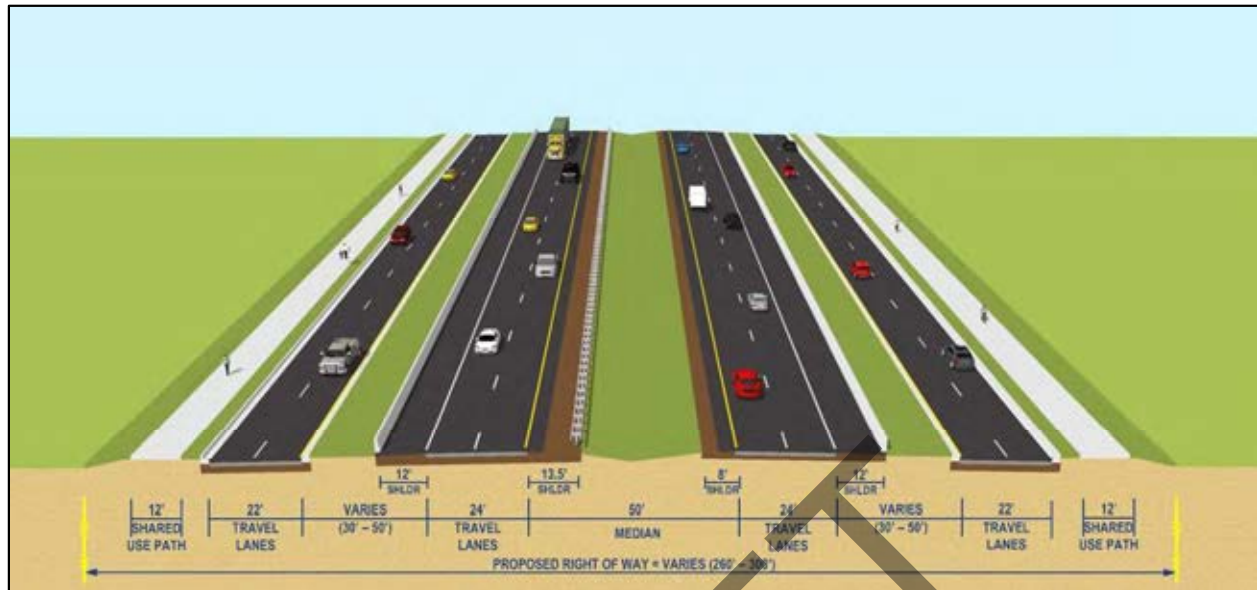
The No-Build Alternative retains the existing roadways and intersections in the study area. Under this scenario, CPP East would not be constructed. This alternative represents forecasted conditions in the project's design year (2050) if the project is not implemented, but other transportation improvements that are planned and programmed are completed. Due to the area's existing and future traffic demands, the No-Build Alternative does not meet the project's purpose and need and therefore is considered neither viable nor a practical alternative, but it will be considered throughout the PD&E Study.

Two viable Build Alternatives were evaluated for this PD&E Study: **Alternative 1: Co-Located** and **Alternative 2: New Alignment**. Project roll plots for both Build Alternatives are provided in Appendix A.

1.3.1 Alternative 1: Co-Located

The proposed typical section shown in **Figure 1.3.1** features a four-lane limited access facility (CPP East) flanked by two-lane, at-grade frontage roads (US 17/92). CPP East consists of two 12-foot-wide travel lanes in each direction separated by a 50-foot-wide median. In the northbound direction there is an eight-foot-wide inside shoulder and 12-foot-wide outside shoulder with barrier wall. In the southbound direction there is a 13.5-foot-wide inside shoulder with guardrail and 12-foot-wide outside shoulder with barrier wall. A 30- to 50-foot-wide buffer, measured from edge-of-travel to edge-of-travel separates the limited access facility (CPP East) from the frontage roads. The frontage roads feature two 11-foot-wide travel lanes in each direction with curb and gutter. A 6.5-foot buffer separates the outside frontage road travel lane from the 12-foot-wide shared use path. The proposed right-of-way width for this alternative varies from 260 feet to 300 feet.

Figure 1.3.1: Typical Section – Alternative 1: Co-located



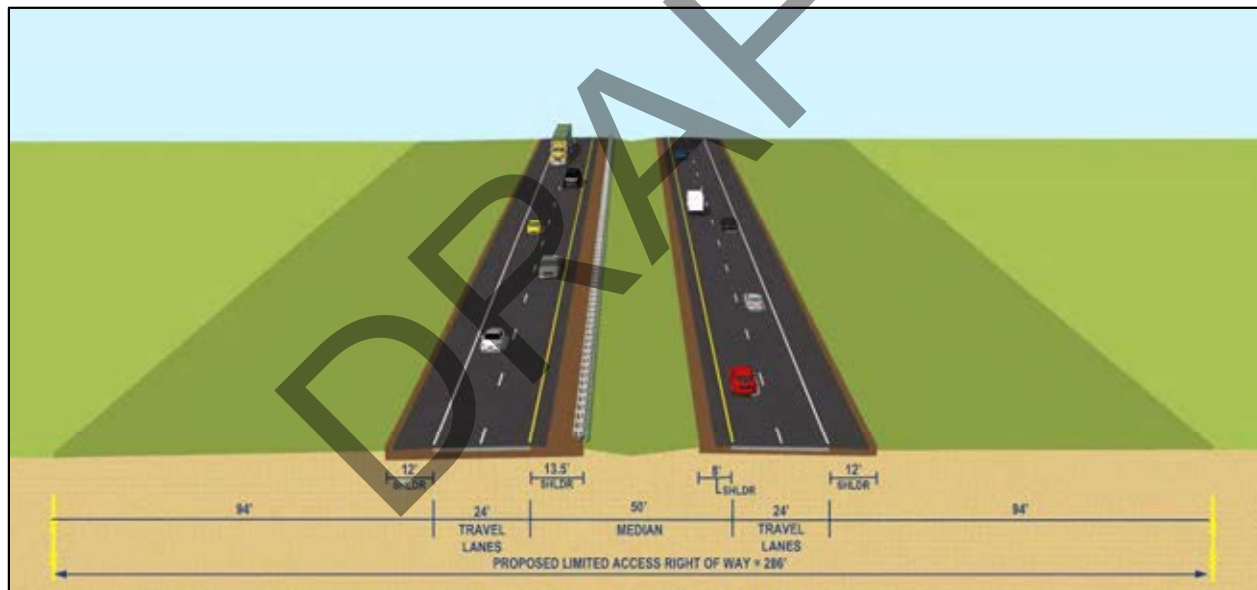
Alternative 1: Co-located begins near the Power Line Road extension intersection with US 17/92 and extends approximately 7.1 miles along US 17/92 to the Poinciana Connector. The southern terminus is an at-grade connection to US 17/92. The limited access facility begins/ends approximately 0.7 miles north of the Power Line Road extension intersection with US 17/92. In the northbound direction, a third lane is developed on US 17/92 at the Power Line Road intersection. CPP East is created through a slip ramp with the inside two lanes, the middle lane is a "choice" lane for vehicles to either enter the limited access highway or continue onto US 17/92. The outer lane and middle "choice" lane continue to the relocated northbound US 17/92. In the southbound direction, the limited access highway tapers into the southbound US 17/92 lanes to create four travel lanes.

The northern terminus consists of direct ramp connections tying into the outside lanes of the Poinciana Connector in the vicinity of the CR 532 overpass.

1.3.2 Alternative 2: New Alignment

The proposed typical section for Alternative 2: New Alignment, shown on **Figure 1.3.2**, features a four-lane limited access facility (CPP East). CPP East is comprised of two 12-foot-wide travel lanes in each direction separated by a 50-foot-wide median, including the inside shoulders. In the northbound direction there is an eight-foot-wide inside shoulder and 12-foot-wide outside shoulder. In the southbound direction there is a 13.5-foot-wide inside shoulder with guardrail and 12-foot-wide outside shoulder. The proposed limited access right-of-way is 286 feet, including 94 feet of border width on either side. A 12-foot-wide shared use path is being evaluated between the US 17/92 and Power Line Road intersection and Ernie Caldwell Boulevard. An additional 50 feet of right-of-way is required for the shared use path footprint.

Figure 1.3.2: Typical Section – Alternative 2: New Alignment



The total length of Alternative 2: New Alignment is 7.4 miles. The alternative begins at US 17/92 near the Power Line Road extension as described for Alternative 1. Alternatives 1 and 2 are identical for approximately 0.8 miles from Power Line Road to 0.7 miles south of Ernie Caldwell Boulevard. At this point, the New Alignment Alternative curves to the west, and the alignment follows the CSX railroad line for approximately 1.4 miles before curving back towards US 17/92. The alignment crosses over US 17/92 near the Providence neighborhood and parallels US 17/92



on the east side until after Ronald Reagan Parkway. The alternative ends with a connection to the future Poinciana Connector. North of Ronald Reagan Parkway, CPP East is located along the east side of US 17/92. Approximately 2,000 feet north of Ronald Reagan Parkway, CPP East curves to the north, crossing over US 17/92 and then the northbound and southbound lanes diverge. Northbound CPP East crosses over the future Poinciana Connector to tie into the outside lanes in the vicinity of the CR 532 overpass and CPP East southbound is created with a ramp that forms just south of CR 532 and crosses over US 17/92.

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2.0 Existing Environmental Conditions

This section presents a description of existing conditions within the study area, including soils and land use cover types. **Section 3.0** presents a description of the potential impacts to federal- and state-protected species and habitats. **Section 4.0** presents a description of wetland and other surface water impacts that would result from the construction of each alternative and a discussion of the mitigation options to offset these impacts.

2.1 Methodology

In addition to reviewing the Efficient Transportation Decision Making (ETDM) Summary Report comments, a literature search of agency records was conducted, focusing on known occurrences of listed species near the study area, which includes a 300-foot buffer surrounding the proposed right of way. Literature reviews were used to determine the current federal and state listed status of all protected flora and fauna species having the potential to occur in the vicinity of the project. Field investigations were conducted by environmental scientists familiar with central Florida natural communities in January 2025. These site visits focused on the remaining natural communities within 300 feet of the existing and proposed right of way; in particular, on natural communities known to support listed plant and wildlife species.

Project biologists researched publicly accessible databases of the federal, state, and local government agencies to gather information on known sightings of listed species and important habitats in Polk and Osceola Counties. These agencies included the U.S. Fish and Wildlife Service (USFWS), Florida Fish and Wildlife Conservation Commission (FWC), Florida Natural Areas Inventory (FNAI), South Florida Water Management District (SFWMD), Southwest Florida Water Management District (SWFWMD), Polk County, and Osceola County. Other sources of area-specific information included the Environmental Screen Tool (EST), Florida's Turnpike Enterprise, and the Florida Native Plant Society.

In order to assess the approximate locations and boundaries of existing wetland and upland communities within the study area, the following site-specific data was collected and reviewed:



- Aerial photographs, (scale 1" = 200') ESRI 2022 and Osceola County and Polk County Property Appraiser 2023;
- Florida Association of Environmental Soil Scientists, Hydric Soils of Florida Handbook, 4th ed., (Hurt et al. 2007);
- FDOT, Florida Land Use Cover, and Forms Classification System (FLUCFCS) Handbook, 3rd ed., January 1999.
- Florida State Owned Land and Record Information System (FL-SOLARIS), Land Inventory Tracking System (LITS). GIS database, October 2024.
- SFWMD, Florida Land Use, Cover and Forms Classification System GIS Database, (SFWMD 2023).
- SFWMD, Florida Land Use, Cover and Forms Classification System GIS Database, (SFWMD 2020)
- U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS), Soil Survey of Polk County and Osceola County, Florida, 1989;
- USDA, NRCS Web Soil Survey, (January 2025);
- USFWS, National Wetlands Inventory (NWI), Wetlands Online Mapper (January 2025); and
- USFWS, Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979).
- USFWS Information for Planning and Consultation (IpaC) (IpaC: Getting Started – Draw on Map (fws.gov));
- FNAI Biodiversity Matrix Report (<http://www.fnai.org/biointro.cfm>);
- FWC
 - Wading bird rookeries locator (1999);
 - Florida scrub-jay habitat and observations (1992-1993);
 - Cooperative Land Cover (CLC), Version 3.5 (2021)
- Audubon Florida Eagle Watch public nest application (2024 nesting data);
- USFWS – <https://www.fws.gov/northflorida/>
 - Critical Habitat for threatened and endangered species;
 - Wood stork active colonies (2010-2019) (USFWS, 2020);



- Central Florida wood stork (*Mycteria americana*) core foraging areas (CFA) (15-mile radius);
- Consultation Areas for federally listed species; and
- U.S. Army Corps of Engineers (USACE) Effect Determination Keys for the wood stork and eastern indigo snake.

2.2 Soils

Based on the Soil Survey of Polk County and Osceola County, Florida (USDA, 1989), the study area is comprised of 31 soil types within the 300-foot right of way buffer of the project limits (study area). **Appendix B** provides an aerial map depicting the boundaries of each soil type within the study area. Open water comprises approximately 5.45 percent of the study area. **Table 2-1** lists the soil types within the study area with the approximate acreage and percentage of each type within the study area.

Table 2-1: NRCS Soil Types within Study Area

Map Unit Symbol	Map Unit Name	Acres in Study Area	Percent of Study Area
Polk County Soils in Study Area			
3	Candler sand, 0 to 5 percent slopes	45.29	2.2
12	Neilhurst sand, 1 to 5 percent slopes	186.07	9.0
13	Samsula muck, frequently ponded, 0 to 1 percent slopes	140.25	6.8
15	Tavares fine sand, 0 to 5 percent slopes	197.37	9.6
16	Urban land, 0 to 2 percent slopes	0.30	0.0
17	Smyrna and Myakka fine sands	140.78	6.8
19	Floridana mucky fine sand, frequently ponded, 0 to 1 percent slopes	1.30	0.1
21	Immokalee sand	145.73	7.1
22	Pomello fine sand	14.00	0.7
23	Ona-Ona, wet, fine sand, 0 to 2 percent slopes	18.50	0.9
25	Placid and Myakka fine sands, depressional	135.59	6.6
30	Pompano fine sand	82.13	4.0
31	Adamsville fine sand, 0 to 2 percent slopes	33.05	1.6



Table 2-1: NRCS Soil Types within Study Area (Continued)

Map Unit Symbol	Map Unit Name	Acres in Study Area	Percent of Study Area
35	Hontoon muck, frequently ponded, 0 to 1 percent slopes	34.30	1.7
36	Basinger mucky fine sand, frequently ponded, 0 to 1 percent slopes	141.32	6.9
37	Placid fine sand, frequently flooded	37.79	1.8
46	Astatula sand, 0 to 5 percent slopes	178.58	8.7
47	Zolfo fine sand, 0 to 2 percent slopes	10.78	0.5
58	Udorthents, excavated	4.84	0.2
59	Arents-Urban land complex, 0 to 5 percent slopes	3.22	0.2
70	Duette fine sand	18.48	0.9
74	Narcoossee sand	33.11	1.6
77	Satellite sand, 0 to 2 percent slopes	78.57	3.8
88	Astatula sand, 5 to 12 percent slopes	77.97	3.8
89	Astatula sand, 12 to 20 percent slopes	4.92	0.2
99	Water	111.41	5.4
Total Polk County Soils in Study Area		1,875.67	91

Map Unit Symbol	Map Unit Name	Acres in Study Area	Percent of Study Area
Osceola County Soils in Study Area			
5	Basinger fine sand, 0 to 2 percent slopes	2.41	0.1
12	Floridana fine sand, frequently ponded, 0 to 1 percent slopes	7.03	0.3
16	Immokalee fine sand, 0 to 2 percent slopes	68.86	3.3
21	Malabar-Pineda complex	34.46	1.7
22	Myakka fine sand, 0 to 2 percent slopes	5.02	0.2
25	Nittaw muck	1.06	0.1
32	Placid fine sand, frequently ponded, 0 to 1 percent slopes	27.24	1.3
38	Riviera fine sand, 0 to 2 percent slopes	3.65	0.2
39	Riviera fine sand, frequently ponded, 0 to 1 percent slopes	1.23	0.1
41	Satellite sand, 0 to 2 percent slopes	31.30	1.5
99	Water	1.04	0.1
Total Osceola County Soils in Study Area		183.29	9

Source: Web Soil Survey National Cooperative Soil Survey



2.3 Land Use

Land uses within the study area were evaluated utilizing GIS data from the SFWMD and SWFWMD Land Cover Land Use data. Each land use type within the study area have been classified using the Florida Land Use, Cover and Forms Classification System (FLUCFCS; FDOT 1999). A total of 19 upland, ten (10) wetland, and three (3) other surface water land use types were mapped within the study area. Aerial maps depicting existing land uses and habitats within the study area are provided in **Appendix C**.

Table 2-2 provides land use and habitat types, their classifications, total acreage, and percent coverage within the study area. Upland communities comprise 1,475.19 acres (72.1 percent) of the study area. Developed uplands include residential development, commercial and services, industrial areas, institutional, and recreational facilities. Undeveloped uplands of the study area consist of open land, cropland and pastureland, other lands, herbaceous, shrub and brushland, mixed rangeland, upland coniferous forest, pine flatwoods, upland hardwood forests, and upland hardwoods – coniferous mix. Infrastructure within the study area consists of transportation and utilities.

Wetland and other surface water communities comprise 562.32 acres (27.9 percent) of the study area. Based on collected field data and in-house reviews, a total of 13 wetland and other surface water habitat types, including ten (10) wetland and three (3) other surface water types were identified within the study area. Other surface waters are defined as open water bodies and manmade drainage features. Wetland and other surface water habitats include wetland hardwood forests, stream and lake swamps, cypress, mixed forested wetland, vegetated non-forested wetlands, freshwater marshes, wet prairies, emergent aquatic vegetation, non-vegetated, intermittent ponds, streams and waterways, lakes, and reservoirs. **Appendix D** provides aerial maps depicting the location of wetland and other surface water habitats within the study area.



Table 2-2: Land Use Types

Land Use Type	FLUCFCS Code*	FLUCFCS Description	Acreage in Study Area	Percent of Study Area
Developed	110	RESIDENTIAL LOW DENSITY < 2 DWELLING UNITS PER ACRE	286.52	13.9
	120	RESIDENTIAL MED DENSITY 2 TO 5 DWELLING UNITS PER ACRE	117.45	5.7
	130	RESIDENTIAL HIGH DENSITY	65.78	3.2
	140	COMMERCIAL AND SERVICES	80.62	3.9
	150	INDUSTRIAL	28.41	1.4
	160	EXTRACTIVE	97.48	4.9
	170	INSTITUTIONAL	12.34	0.6
Undeveloped	190	OPEN LAND	99.03	4.8
	210	CROPLAND AND PASTURELAND	146.21	7.1
	260	OTHER OPEN LANDS	117.06	5.7
	310	HERBACEOUS	9.74	0.5
	320	SHRUB AND BRUSHLAND	32.33	1.6
	330	MIXED RANGELAND	93.02	4.6
	410	UPLAND CONIFEROUS FOREST	3.13	0.2
	411	PINE FLATWOODS	156.09	7.6
	420	UPLAND HARDWOOD FORESTS – PART 1	6.12	0.3
	434	UPLAND HARDWOOD – CONIFEROUS MIX	21.67	1.1
Infrastructure	810	TRANSPORTATION	32.63	1.6
	830	UTILITIES	69.56	3.4
Total Upland Land Uses			1,475.19	72.1
Surface Waters	510	STREAMS AND WATERWAYS	0.41	0.1
	520	LAKES	82.50	4.1
	530	RESERVOIRS	44.51	2.2
Wetlands	610	WETLAND HARDWOOD FORESTS	1.94	0.1
	615	STREAM AND LAKE SWAMPS (BOTTOMLAND)	156.82	7.7
	621	CYPRESS	1.51	0.1
	630	WETLAND FORESTED MIXED	106.94	5.2
	640	VEGETATED NON-FORESTED WETLANDS	15.28	0.8
	641	FRESHWATER MARSHES	140.79	6.9
	643	WET PRAIRIES	5.13	0.3
	644	EMERGENT AQUATIC VEGETATION	2.86	0.2
	650	NON-VEGETATED	2.02	0.1
	653	INTERMITTENT PONDS	1.61	0.1
Totals for Wetland Land Uses			562.32	27.9
*FDOT FLUCFCS, January 1999				



The study area was also evaluated using the CLC. The CLC is produced by a partnership between the FWC and FNAI to develop ecologically based statewide land cover from existing sources and expert review of aerial photography. The CLC follows the Florida Land Cover Classification System. Aerial maps depicting existing CLC land uses and habitats within the study area are provided in **Appendix C**.

DRAFT



3.0 Protected Species and Habitat

This project was evaluated for impacts to wildlife and habitat resources, including federally and state protected species. Species protections are afforded by Section 7 of the Endangered Species Act (ESA, 1973), as amended, and Chapter 68A-27, F.A.C. The project was also evaluated for plant species designated as endangered, threatened, or commercially exploited in accordance with 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. Evaluations were conducted in accordance with the FDOT PD&E Manual Part 2, Chapter 16 (2024), while using information from the USFWS, FWC, FDACS, FNAI, NRCS, and other databases.

The study area does not fall within USFWS-designated critical habitat (CH) for any species. The study area falls within the USFWS Consultation Areas (Cas) of the Florida scrub-jay (*Aphelocoma coerulescens*), Crested caracara (*Caracara plancus*), Red-cockaded woodpecker (*Picoides borealis*), Florida bonneted bat (*Eumops floridanus*), wood stork (*Mycteria americana*), sand skink (*Neoseps reynoldsi*), blue-tailed mole skink (*Eumeces egregius lividus*), and the Everglade snail kite (*Rostrhamus sociabilis plumbeus*). The Polk County Soil Survey, Osceola County Soil Survey, recent aerial imagery (2022), CLC, SFWMD and SWFWMD land use/land cover mapping have been reviewed to determine habitat types occurring within and adjacent to the project corridor.

The following sections discuss the existing habitat types and potentially occurring state and federal listed and otherwise protected species that may be affected by the proposed improvements. The evaluated corridor includes the existing right of way and 300 feet on each side.

3.1 Protected Species Evaluation

3.1.1 Existing Conditions

Based on desktop research and field reviews, tables of potentially occurring protected fauna and flora were developed. Further research for protected flora was conducted to determine the flowering season and form, in order to effectively schedule field efforts. Field reviews consisted of



vehicular surveys and general pedestrian surveys through natural areas and altered habitats with the potential to support protected species. In the absence of physical evidence of a protected species, evaluation of the appropriate habitat was conducted to determine the likelihood of a species being present. Appropriate habitat within 500 feet of the study area was visually scanned for evidence of listed species as well as general wildlife. The primary land use along the corridor is low density residential, with commercial areas established throughout, and several large wetland areas. Upland areas tend to be small, disturbed, and separated by development. **Appendix E** depicts field observations within the study area as well as historic species occurrences from database searches.

3.1.2 Remaining Habitats and Conservation Lands

The project team reviewed Florida State Owned Land and Record Information System (FL-SOLARIS), Land Inventory Tracking System (LITS) GIS database (October 2024). There is one state-owned parcel (Osceola County 06-26-28-0000-0030-0000) owned by the SFWMD. This parcel is located east of US 17/92 at the Osceola/Polk County line. This parcel is part of the Upper Reedy Creek Management Area and is located at the eastern edge of the study area, but is not located within the proposed right of way and this parcel would not be affected by either alternative.

The Lake Wales Ridge (LWR) is the remnant of an ancient dune that runs north and south through Florida's peninsula. The Lake Wales Ridge Ecosystem Florida Forever project consists of separate sites along the ridge, which are intended to be a part of a system of managed areas that conserve the character, biodiversity and ecosystem processes of the ancient scrubs. The 2024 Florida Forever Plan has identified essential parcels remaining to acquire located west of US 27. There are no target parcels located within 2.5 miles of the Central Polk Parkway East project area.

The Lake Wales Ridge National Wildlife Refuge (NWR) manages lands on both the Lake Wales and Winter Haven ridges of the Central Florida highlands. The NWR manages the Snell Creek unit, which is approximately three miles east of the Central Polk Parkway East project area.



3.1.3 Wildlife

State and federally protected species with the potential to occur along the corridor include 20 protected animals and 34 protected plants. Species status in Tables 3-1 through 3-3 below include the following USFWS and FWC abbreviations: "E" for endangered, "T" for threatened, or "N" for species that are not listed as endangered, threatened, or species of special concern, but are protected by various regulations. To summarize the results of the desktop and field data collection efforts, each potentially occurring species was assigned a likelihood for occurrence of "none", "low", "moderate", or "high" within habitats found on or immediately adjacent to the project corridor and an indicator of suitable habitat proximity to the study area of "distant", "near R/W (right of way)", or "within R/W". Definitions of probability of species presence/habitat proximity are provided below.

Likelihood of Species Presence Within the Project Corridor

None – Species has the potential to occur in Polk or Osceola Counties, but due to complete absence of suitable habitat, could not be naturally present within the project corridor.

Low – Species with a low likelihood of occurrence within the project corridor are defined as those species that are known to occur in Polk or Osceola Counties or the bio-region, but preferred habitat is limited in the project corridor, or the species is rare.

Moderate – Species with a moderate likelihood for occurrence are those species known to occur in Polk or Osceola Counties or nearby counties, and for which suitable habitat is well represented in the project corridor, but no observations or positive indications exist to verify presence.

High – Species with a high likelihood for occurrence are suspected within the project corridor based on known ranges and existence of sufficient preferred habitat on the corridor; are known to occur adjacent to the corridor; or have been previously and recently observed or documented in the vicinity.



Habitat Proximity

Distant – Appropriate habitat is more than 500 feet from the project footprint when accounting for the species' home range size and level of mobility.

Near R/W – Appropriate habitat is within 500 feet of the project footprint when accounting for the species' home range size and level of mobility.

Within R/W – Appropriate habitat occurs within the project footprint.

3.1.4 Federally Listed Species

Crested Caracara

The crested caracara (*Caracara plancus*) is listed as Threatened by the USFWS and Federally designated Threatened by the FWC. Pursuant to USFWS guidelines, if a Project Area falls within the crested caracara consultation area and contains potential habitat (i.e., dry or wet prairies, pastureland, or lightly wooded areas) the USFWS presumes the habitat is occupied and activities in that area may affect the crested caracara. This species primarily nests in isolated cabbage palms or clumps of cabbage palms in a foraging territory and generally use the same nest in consecutive nesting seasons.

The project corridor lies within the USFWS crested caracara consultation area and the hardwood – coniferous mixed (FLUCFCS 434) communities in the project corridor are considered potential nest habitat and the pastureland (FLUCFCS 210) communities are considered potential foraging habitat, as defined by the USFWS. While species occurrences have been documented in Polk and Osceola counties, potential habitats within the project corridor do not include a significant number of potential nesting trees (cabbage palms) within the pastureland communities. No crested caracara observations were documented during field reviews conducted between January 17th and 27th, 2025. No nesting surveys for the crested caracara were conducted. Additional surveys following USFWS protocols are anticipated during the design phase of any project segments that have potential nesting habitat within 4,920 feet. Crested caracaras are highly mobile and any foraging individuals are likely to relocate away from construction activities to other nearby and accessible habitats. Therefore, it is anticipated that the project *May Affect, Not Likely to*



Adversely Affect the crested caracara. The Enterprise will initiate technical assistance with the USFWS to confirm this effect determination.

Eastern Black Rail

The Eastern black rail (*Laterallus jamaicensis jamaicensis*) is listed as Threatened by the USFWS and Federally designated Threatened by the FWC. Black rails inhabit a variety of wetland habitats including salt, brackish, and freshwater marshes with dense vegetative cover. Along portions of the Gulf Coast of Florida, Eastern black rails can be found in higher elevations of wetland zones that contain shrubby vegetation. When shrubby vegetation becomes too dense, the habitat becomes less suitable for the species.

Existing habitat types that could potentially support the Eastern black rail along the project corridor are FLUCFCS codes 640 (vegetated non-forested wetlands) and 641 (freshwater marshes) (see Appendix D). The existing habitats are low quality that contain overgrowth of invasive species that create undesirable conditions, and no Eastern black rails were observed during the field reviews. Therefore, it is anticipated that the project *May Affect, Not Likely to Adversely Affect* the Eastern black rail and surveys for this species are recommended during the design phase. The Enterprise will initiate technical assistance with the USFWS to confirm this effect determination.

Everglade Snail Kite

The project falls within the CA of the snail kite (*Rostrhamus sociabilis*), a federally listed Endangered species. Everglade snail kite habitat consists of freshwater marshes and the shallow vegetated edges of lakes (natural and man-made) where apple snails can be found. Suitable foraging habitat for the Everglade snail kite is typically a combination of low marsh with an interdigitated matrix of shallow open water, which is relatively clear and calm. Everglade snail kites require foraging areas that are relatively clear and open in order to visually search for apple snails. Therefore, dense growth of herbaceous or woody vegetation is not conducive to efficient foraging.

The closest observation of this species has been located eight (8) miles east of the study area along Lake Tohopekaliga. Suitable habitat exists within the study area in the FLUCFCS code 520 (lakes) and 530 (reservoirs) communities. However, no individuals were observed during field



reviews nor were any apple snail shells observed. Therefore, it is anticipated that the project *May Affect, Not Likely to Adversely Affect* the Everglade snail kite. The Enterprise will initiate technical assistance with the USFWS to confirm this effect determination. Currently, no species-specific surveys are anticipated to be required.

Florida Bonneted Bat

The Florida bonneted bat (*Eumops floridanus*) is listed as Endangered by the USFWS and State-designated Endangered by the FWC. Habitat requirements are forests, wetlands, and other natural habitats. The USFWS reports that the species may be present in residential and urban areas. The USFWS defines roosting habitat to include forests and other areas with large or mature trees or areas with suitable roost structures. Natural roosting structure primarily includes mature or large live or dead trees, tree snags, and trees with cavities, hollows, or crevices. Foraging habitat includes open fresh water and permanent or seasonal freshwater wetlands, wetland and upland forests, and wetland and upland scrub.

The east side of the project corridor falls inside the USFWS consultation area for the Florida bonneted bat. The FLUCFCS code 420 (upland hardwood forests) and 434 (upland hardwood – coniferous mix) communities in the study area are considered potential Florida bonneted bat roosting habitat as defined by USFWS. The Florida Bonneted Bat Consultation Guidelines published by the USFWS on October 22, 2019, and updated in 2024, includes a consultation key to assist in avoiding and minimizing potential negative effects to roosting and foraging habitats. The consultation key indicates that a full acoustic/roost survey will be required since the proposed project falls within the consultation area, potential roosting habitat exists in the Project Area, and the project footprint is greater than five acres in size.

No records exist of the Florida bonneted bat occurring in the project area and none were detected during field surveys. The USFWS Effect Determination Key for this species requires field surveys that were beyond the scope of this PD&E Study. A survey will be conducted for the Florida bonneted bat within the limits of construction activities that are within the Florida bonneted bat Consultation Area. If any signs of the Florida bonneted bat are observed (e.g., tree cavities, new potential man-made roosting habitat), the Enterprise will initiate technical assistance with the



USFWS to confirm this effect determination and regarding the most updated survey protocols for the Florida bonneted bat. Following technical assistance with the USFWS, it is anticipated that the project *May Affect, Not Likely to Adversely Affect* the Florida bonneted bat.

Tricolored Bat

The tricolored bat (*Perimyotis subflavus*) is one of the smallest bats native to North America and utilizes trees in forested habitats and structures such as bridges and culverts for roosting. The tricolored bat is a proposed species for federal listing. Due to impacts to suitable habitat, the anticipated effect determination is *May Affect, Not Likely to Adversely Affect* the tricolored bat. As the timeline for construction is better defined, FDOT will adhere to the applicable commitment for the tricolored bat below:

- Upon listing of the tricolored bat, if the project contains suitable habitat and requires tree trimming and/or clearing, FDOT will not conduct tree trimming/clearing activities during the tricolored bat pup season (May 1st to July 15th) and when bats may be in torpor (when temperatures are below 45 degrees Fahrenheit).
- Upon listing of the tricolored bat, if the project contains suitable habitat and FDOT needs to trim or clear trees or perform work on bridges/culverts during the maternity season and/or when the temperature is below 45 degrees Fahrenheit, then FDOT will survey the project area for evidence of the tricolored bat. The Indiana Bat and Northern Long-eared Bat Survey Guidance (USFWS), appendix J acoustic survey protocol in the year-round range (mist netting is not being conducted in Florida at this time), will be used for areas with tree trimming/clearing. For bridges and culverts, the Indiana Bat and Northern Long-eared Bat Survey Guidance, appendix K, Assessing Bridges and Culverts for Bats, will be used.

a. if the surveys result in no tricolored bats detected, then FDOT can proceed with the project activities. Negative results from bridge/culvert surveys are valid for 2 years. Negative results for acoustic surveys are valid for 5 years. However, negative results for either survey may be invalidated if additional tricolored bat survey data is submitted to FWS showing presence of the species within the vicinity of the project area. Additional survey work by FDOT, or application of the avoidance and minimization measures noted



in #4, may be required if updated detections are reported, and may result in reinitiation of consultation with FWS.

b. If the surveys result in positive detections of the tricolored bat, FDOT will implement conservation measures such as: not conducting tree trimming/clearing activities during the tricolored bat pup season (May 1st to July 15th) when pups are not volant and not able to escape disturbance; similarly avoid tree trimming/clearing activities when the temperatures are below 45 degrees Fahrenheit when bats may be in torpor and unresponsive to disturbance.

Florida Scrub-jay

The project falls within the CA of the federally listed Threatened Florida scrub-jay (*Aphelocoma coerulescens*), and potential habitat is documented to occur within the study area. The closest historical observation was located seven (7) miles southwest in 1992-1993 (Florida Scrub-Jay Umbrella Habitat Conservation Plan, 2007). The ideal habitat conditions for scrub-jays consist of xeric areas dominated by scrub oaks growing on excessively well-drained sandy soils. In these habitats, bare sand patches are dominant, with sparse groundcover consisting of various short grasses and shrubs. Sand pines are typically scattered with less than 10% cover and high-intensity fires maintain the habitat. Florida scrub-jays may also live in less desirable areas like pine flatwoods, oak-dominated communities, or orange groves that are not well maintained. Existing habitat types that could potentially support the scrub-jay along the project corridor are FLUCFCS codes 320 (shrub and brushland), 411 (pine flatwoods), and 434 (upland hardwood – coniferous mix).

In Florida, scrub-jay habitat is broken down into three (3) types, defined by its quality to scrub-jays. These habitat types are used to determine areas of occupancy under Section 7 consultation, as well as when restoring areas for the species. The types of scrub-jay habitat are defined by Fitzpatrick et al. (1991) as follows:

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



- Type II Habitat: Any plant community, not meeting the definition of Type I habitat, in which one or more scrub oak species is represented.
- Type III: Any upland or seasonally dry wetland within ¼ mile of any area designated as Type I or Type II habitat.

Suitable habitat for scrub-jays exists in the project corridor. However, these areas that provide potential habitat along the corridor are disturbed by fire suppression and either agricultural land use or surrounding urban land use. Therefore, bare sand patches are sparse (ground cover is more continuous), scrub oaks in some areas are dense with significant underbrush, and pines are denser than 10% cover. Since likelihood of scrub-jay presence within the study area is low, it is anticipated that the project *May Affect, Not Likely to Adversely Affect* the Florida scrub-jay. The Enterprise will initiate technical assistance with the USFWS to confirm this effect determination.

Red-cockaded Woodpecker

The red-cockaded woodpecker (*Picoides borealis*) is listed Threatened by the USFWS and Federally designated Threatened by the FWC. Red-cockaded woodpeckers occupy mature, open pine forests consisting of either longleaf pine from 80 to 120 years old, or loblolly pine from 70 to 100 years old. Cooperative breeding groups need about 200 acres of forest for foraging. Suitable foraging habitat includes pine forests that have a low density of small pines, no hardwood, or pine mid-story, and usually have abundant native grasses and forbs as groundcover.

The northern portion of the project corridor falls inside of the USFWS consultation area for the red-cockaded woodpecker. Suitable habitat is present in the study area in the FLUCFCS code 410 (upland coniferous forest) and 411 (pine flatwoods) communities. Habitat conditions are poor due to fire suppression and high tree densities. The likelihood of red-cockaded woodpecker presence within the study area is considered low; it is anticipated that the project *May Affect, Not Likely to Adversely Affect* the red-cockaded woodpecker. The Enterprise will initiate technical assistance with the USFWS to confirm this effect determination. Currently, no species-specific surveys are anticipated to be required.



Wood Stork

The project is within the 15-mile Core Foraging Area (CFA) of two (2) wood stork nesting colonies (Gatorland and Lake Russell). This federally listed Threatened wading bird prefers freshwater and estuarine habitats for nesting, roosting, and foraging. Typical foraging sites for the wood stork include freshwater marshes and ponds, shallow, seasonally flooded roadside or agricultural ditches, narrow tidal creeks or shallow tidal pools, managed impoundments, and depressions in cypress heads and swamp sloughs. Because of their specialized feeding behavior, wood storks forage most effectively in shallow-water areas (2-15 inches of water). During the design and permitting phase of this project, a Wood Stork Foraging Analysis will be conducted to determine the amount of biomass lost from surface water and wetland impacts in accordance with USFWS methodology. Impacts to wetlands within the study area 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. Based on the implementation and Wood Stork Determination of Effect Key (A>B>C>D>E "MANLAA"), it has been determined that the project it is anticipated that the project *May Affect, Not Likely to Adversely Affect* the the wood stork (Appendix F).

American Alligator

The American alligator (*Alligator mississippiensis*) is listed as Threatened by the USFWS due to similarity of appearance to the American crocodile (*Crocodylus acutus*) and Federally designated Threatened due to similarity of appearance by the FWC. This species inhabits swampy areas, rivers, streams, lakes, and ponds.

No American alligators were observed on-site; however, marginal habitat is present. Alligators are highly mobile, and it is likely that they would leave areas of disturbance or if habitat impacts occur. It is anticipated that the Project will have *No Effect* on the American alligator.

Eastern Indigo Snake

The Eastern indigo snake (*Drymarchon couperi*), federally listed as Threatened, inhabits pine flatwoods, hardwood forests, moist hammocks, and areas that surround cypress swamps. This species could occur in many habitat types throughout the corridor but is often found in habitats



containing gopher tortoises. Therefore, it is more likely to be found in the upland locations. The FWC Rare Snake Sightings GIS database was reviewed for Eastern indigo snake sightings. No sightings have been documented within the study area. The Enterprise will implement the Standard Protection Measures for the Eastern Indigo Snake and based on the Eastern Indigo Snake Determination of Effect Key (A>B>C>D>E “MANLAA”), it has been determined that the project it is anticipated that the project *May Affect, Not Likely to Adversely Affect* the Eastern indigo snake (**Appendix F**). The Enterprise will initiate technical assistance with the USFWS to confirm this effect determination.

Sand and Blue-tailed Mole Skink

The project falls within the CA of the federally listed Threatened sand skink (*Neoseps reynoldsi*) and blue-tailed mole skink (*Eumeces egregious lividus*). These species require habitat that contains sandy soils (USFWS has identified 28 soils that could support the species) and an elevation above 82 feet NAVD. Potentially suitable habitat based on these criteria are shown in **Appendix G**; however, many areas within the suitable habitat contain extensive rooted vegetation or are otherwise disturbed such that there is no potential to support skinks. Preferred skink habitat is dominated by xeric vegetation such as oak-dominated scrub, turkey oak barrens, high pine, and xeric hammocks. Skinks typically occur in habitats that contain a mosaic of open sandy patches interspersed with forbs, shrubs, and trees.

Potential habitat exists throughout the corridor, where suitable soil type and elevation overlap. They are generally the same areas as the potential scrub-jay habitat areas, plus the addition of several areas of residential and commercial development. The Enterprise will initiate technical assistance with the USFWS to confirm this effect determination. This project *May Affect* the sand skink and blue-tailed mole skink and surveys for these species are recommended during the design phase.



Monarch Butterfly

The monarch butterfly (*Danaus plexippus*) is a candidate species for federal listing under the Endangered Species Act throughout the United States. Monarchs can be found throughout Florida with a preferred habitat that includes wildflowers and specifically milkweeds.

Monarch butterflies were not detected during field surveys, but they are highly mobile and potential exists for monarch butterflies to occupy vegetated areas within the project limits. If the Monarch butterfly is listed by USFWS as Threatened or Endangered and the project may affect the species, the Enterprise will initiate technical assistance with the USFWS to confirm this effect determination.

Federally Protected Plants

All plants listed in **Table 3-1** are known to require the conditions of high pine and/or scrub habitat types. While these habitats are not present along the corridor, these species could potentially be found in the communities identified by FLUCFCS codes 320, 411, and 434. In addition, certain areas mapped as FLUCFCS codes 190 (open land), 210 (cropland and pastureland), 310 (herbaceous), and 330 (mixed rangeland), have a low likelihood of supporting the species. No federally protected plant species were observed during the field review.

Table 3-1 lists the federally listed wildlife and plant species known to occur within Polk and Osceola Counties that could potentially occur near the study area based on potential availability of suitable habitat and known ranges.



Table 3-1: Federally Listed Species with the Potential to Occur

Species	Common Name	USFWS Status	Habitat Proximity	Potential for Occurrence	Effect Determination	Comments
Avian						
<i>Caracara plancus</i>	Crested caracara	T	Within R/W	Low	May affect, but not likely to adversely affect	Suboptimal foraging habitat is present and potential nesting habitat limited.
<i>Laterallus jamaicensis ssp. Jamaicensis</i>	Eastern black rail	T	Within R/W	Moderate	May affect, but not likely to adversely affect	Suitable habitat is present.
<i>Rostrhamus sociabilis plumbeus</i>	Everglade snail kite	E	Within R/W	Moderate	May affect, but not likely to adversely affect	Suitable habitat is present.
<i>Aphelocoma coerulescens</i>	Florida scrub-jay	T	Within R/W	Low	May affect, but not likely to adversely affect	Suboptimal habitat is present.
<i>Picoides borealis</i>	Red-cockaded woodpecker	T	Within R/W	Low	May affect, but not likely to adversely affect	Suboptimal foraging habitat is present
<i>Mycteria americana</i>	Wood stork	T	Within R/W	Moderate	May affect, but not likely to adversely affect	Suitable habitat is present.
Insect						
<i>Danaus plexippus</i>	Monarch butterfly	C	Within R/W	Moderate	--	Suitable habitat is present.



Table 3-2: Federally Listed Species with the Potential to Occur (Continued)

Species	Common Name	USFWS Status	Habitat Proximity	Potential for Occurrence	Effect Determination	Comments
Mammals						
<i>Eumops floridanus</i>	Florida bonneted bat	E	Within R/W	Low	May affect, but not likely to adversely affect	Suboptimal foraging habitat is present and potential nesting habitat limited.
<i>Perimyotis subflavus</i> *	Tri-colored bat	E	Within R/W	Moderate	May affect, but not likely to adversely affect	Suboptimal foraging and nesting habitat is present.
Reptiles						
<i>Alligator mississippiensis</i>	American alligator	T (S/A)	Within R/W	Moderate	No effect	Suitable habitat is present.
<i>Eumeces egregius lividus</i>	Blue-tailed mole skink	T	Within R/W	Moderate	May affect	Suitable habitat is present.
<i>Drymarchon couperi</i>	Eastern indigo snake	T	Within R/W	Moderate	May affect, but not likely to adversely affect	Suitable habitat is present.
<i>Neoseps reynoldsi</i>	Sand skink	T	Within R/W	Moderate	May affect	Suitable habitat is present.
Plants						
<i>Crotalaria avonensis</i>	Avon Park harebells	E	Within R/W	Low	No effect	None observed. Suboptimal habitat is present.
<i>Nolina brittoniana</i>	Britton's beargrass	E	Within R/W	Low	No effect	None observed. Suboptimal habitat is present.



Table 3-3: Federally Listed Species with the Potential to Occur (Continued)

Species	Common Name	USFWS Status	Habitat Proximity	Potential for Occurrence	Effect Determination	Comments
Plants						
<i>Warea carteri</i>	Carter's mustard	E	Within R/W	Low	No effect	None observed. Suboptimal habitat is present.
<i>Ziziphus celata</i>	Florida Ziziphus	E	Within R/W	Low	No effect	None observed. Suboptimal habitat is present.
<i>Hypericum cumulicola</i>	Highlands scrub hypericum	E	Within R/W	Low	No effect	None observed. Suboptimal habitat is present.
<i>Polygala lewtonii</i>	Lewton's Polygala	E	Within R/W	Low	No effect	None observed. Suboptimal habitat is present.
<i>Paronychia chartacea</i>	Papery Whitlow-wort	T	Within R/W	Low	No effect	None observed. Suboptimal habitat is present.
<i>Clitoria fragrans</i>	Pigeon wings	T	Within R/W	Low	No effect	None observed. Suboptimal habitat is present.
<i>Chionathus pygmaeus</i>	Pygmy fringe-tree	E	Within R/W	Low	No effect	None observed. Suboptimal habitat is present.



Table 3-4: Federally Listed Species with the Potential to Occur (Continued)

Species	Common Name	USFWS Status	Habitat Proximity	Potential for Occurrence	Effect Determination	Comments
Plants						
<i>Polygonella myriophylla</i>	Sandlace	E	Within R/W	Low	No effect	None observed. Suboptimal habitat is present.
<i>Liatris ohlingerae</i>	Scrub blazingstar	E	Within R/W	Low	No effect	None observed. Suboptimal habitat is present.
<i>Eriogonum longifolium</i> var. <i>gnaphalifolium</i>	Scrub buckwheat	T	Within R/W	Low	No effect	None observed. Suboptimal habitat is present.
<i>Dicerandra frutescens</i>	Scrub mint	E	Within R/W	Low	No effect	None observed. Suboptimal habitat is present.
<i>Conradina brevifolia</i>	Short-leaved Rosemary	E	Within R/W	Low	No effect	None observed. Suboptimal habitat is present.
<i>Polygonella basiramia</i>	Wireweed	E	Within R/W	Low	No effect	None observed. Suboptimal habitat is present.

Ranking: E – endangered, T – threatened, C – candidate, T (S/A) – threatened by Similarity of Appearance * - Proposed species for federal listing as Endangered

Sources:

- (1) USFWS – U.S. Fish and Wildlife Service status, Official lists of Threatened and Endangered species, 50 CFR 17.11
 (2) Federally Listed Species in Polk County and Osceola County, Florida | <https://ecos.fws.gov/ecp/species-reports>

Note: In accordance with Florida Administrative Code (FAC) Title 68A-27.0012, Procedures for Listing and Removing Species from Florida's Endangered and Threatened Species List, federally endangered or threatened species under the Endangered Species Act will be listed by the FWC by their federal designation.



Section 7 of this report summarizes the effect determinations that have been made for each federal- and state-managed/protected species. In summary for federally listed plant species, suitable native habitats have been fragmented over time by land development and what remains are patches too small and altered to reasonably support the species. In addition, the existing right of way is generally not conducive to supporting these listed plants given regular maintenance activities including mowing and nuisance/exotic species management. These species have not been observed in the project corridor during field reviews. Given this information, and that it is unlikely that the fragments of disturbed habitat available within the project corridor could support these species, the project will have *No Effect* on federally listed plant species.

3.1.5 State Listed Species

Florida Burrowing Owl

The Florida burrowing owl (*Athene cunicularia floridana*) is state-listed as Threatened and is known to inhabit open upland prairies in Florida that have very little understory vegetation. Burrowing owls may also use golf courses, airports, pastures, agriculture fields, and vacant lots. Although no burrows were observed that appeared to be indicative of burrowing owl presence, potentially suitable habitat exists within the study area.

The Enterprise will initiate technical assistance during the project's design phase to determine the need and extent for pre-construction surveys pursuant to the FWC Imperiled Species Management Plan and Permitting Guidelines for the Florida burrowing owl. If burrowing owls are found, technical assistance with the FWC will establish avoidance, minimization, and permitting options. With the implementation of these measures, it has been determined that the project will have *No Adverse Effect Anticipated* on the Florida burrowing owl.

Wading Birds

State-protected wading birds with potential to occur in the study area include the little blue heron (*Egretta caerulea*), tricolored heron (*Egretta tricolor*), and roseate spoonbill (*Platalea ajaja*). These birds are state-listed as Threatened and prefer shallow wet areas for foraging. A rookery was documented in 1999 1.4-miles north of the project limits. No wading bird rookeries have been



documented or observed within the study area, but there are several areas that could provide suitable foraging habitat; these areas include wetlands and the shallow edges of surface waters.

All wetland impacts will be mitigated to prevent a net loss of wetland functions and values. Based on the implementation of these measures, it has been determined that the proposed project will have *No Adverse Effect Anticipated* on the little blue heron, tricolored heron, and roseate spoonbill.

Southeastern American Kestrel

The southeastern American kestrel (*Falco sparverius 3-18pdate*), a state-listed Threatened non-migratory subspecies of kestrel, favors open pine savannahs, sandhills, dry flatwoods, prairies, fields, and pastures. Several of these habitat types exist within the study area. This species typically nests in cavities created by woodpeckers in large dead trees. No individuals were observed during field reviews, and there are no records of occurrences near the project limits.

The Enterprise will initiate technical assistance during the project's design phase to determine the need and extent for pre-construction surveys pursuant to the FWC Imperiled Species Management Plan and Permitting Guidelines for the southeastern American kestrel. If southeastern American kestrel nests are found, technical assistance with the FWC will establish avoidance, minimization, and permitting options. With the implementation of these measures, it has been determined that the proposed project will have *No Adverse Effect Anticipated* on the southeastern American kestrel.

Florida Sandhill Crane

The Florida sandhill crane (*Grus canadensis pratensis*) is a state-listed Threatened non-migratory bird that prefers freshwater marshes, prairies, and pastures for breeding but can be found foraging in almost any habitat type. Several wetland communities within the corridor offer foraging habitat and potential nesting habitat for this species.

The Enterprise will survey areas of suitable nesting habitat prior to construction if construction activities take place during the nesting season (January through July) and will initiate technical assistance with the FWC if active nests are identified within 400 feet of the project's construction



limits. With the implementation of these measures, it has been determined that the proposed project will have *No Adverse Effect Anticipated* on the Florida sandhill crane.

Gopher Tortoise

The gopher tortoise (*Gopherus polyphemus*) is a state-listed Threatened species. Gopher tortoises prefer well-drained, sandy soils found in habitats such as longleaf pine sandhills, xeric oak hammocks, scrub, pine flatwoods, dry prairies, and coastal dunes. They are also found in a variety of disturbed habitats including pastures and urban areas. Active gopher tortoise burrows were observed during the field reviews and several upland communities within the study area are considered suitable habitat.

The FWC Gopher Tortoise Permitting Guidelines (FWC, 2023) will be implemented for gopher tortoise burrows found within 25 feet of the limits of construction. Pursuant to the guidelines, development activity on a Project must avoid impacts to potentially occupied gopher tortoise burrows by 25 feet in all directions from the mouth of all burrows.

The Enterprise will secure an FWC Gopher Tortoise Relocation Permit to relocate the tortoises and associated commensal species if the gopher tortoise burrows cannot be avoided. With the implementation of these measures, it has been determined that the proposed project will have *No Adverse Effect Anticipated* on the gopher tortoise.

Short-tailed Snake

The short-tailed snake (*Lampropeltis extenuata*) is a state-listed Threatened species that can primarily be found burrowed in sandy soils, particularly longleaf pine and xeric oak sandhills, but may also be found in scrub and xeric hammock habitats. Sub-optimal habitats exist within the corridor, specifically communities identified by FLUCFCS codes 320, 411, 420, and 434.

The Enterprise will survey the Preferred Alternative for gopher tortoise burrows prior to construction and will initiate technical assistance with the FWC to secure a Gopher Tortoise Relocation Permit to relocate gopher tortoises and associated commensal species, such as the short-tailed snake, prior to construction. With the implementation of these measures, it has been



determined that the proposed project will have *No Adverse Effect Anticipated* on the short-tailed snake.

Florida Pine Snake

The Florida pine snake (*Pituophis melanoleucus mugitus*) is a state-listed Threatened species that inhabits areas that feature well-drained sandy soils with a moderate to open canopy. Such habitats exist within the corridor, specifically areas coded as FLUCFCS codes 410, 411, 420, and 434. The pine snake often coexists with pocket gophers and gopher tortoises.

The Enterprise will survey the Preferred Alternative for gopher tortoise burrows prior to construction and will initiate technical assistance with the FWC to secure a Gopher Tortoise Relocation Permit to relocate gopher tortoises and associated commensal species, such as the Florida pine snake, prior to construction. With the implementation of these measures, it has been determined that the proposed project will have *No Adverse Effect Anticipated* on the Florida pine snake.

State Protected Plants

The plants listed in **Table 3-2** are classified below according to preferred habitat type. No state-protected plants have been documented within the study area. Some appropriate habitat exists within and adjacent to the right of way for all of these species. However, the existing right of way is generally not conducive to supporting these listed plants given regular maintenance activities including mowing and nuisance/exotic species management. Per Florida Statutes Title 35 Section 581.185, the FDACS is to be notified prior to highway construction that may affect state-listed species, to allow for the coordination and preservation of any plants on the regulated plant index, such as via seed harvesting or relocation.

Wetland Plants – State-listed plants that favor wetland habitat types include the following species:

- Many-flowered grass-pink (*Calopogon multiflorus*)
- Chapman's sedge (*Carex chapmanii*)
- Piedmont jointgrass (*Coelorachis tuberculosa*)
- Hartwrightia (*Hartwrightia floridana*)



- Star anise (*Illicium parviflorum*)
- Pondspice (*Litsea aestivalis*)
- Celestial lily (*Nemastylis floridana*)
- Cutthroat grass (*Panicum abscissum*)
- Florida willow (*Salix floridana*)

These plants have the potential to occur in wetlands and the edges of surface waters. These habitat types include FLUCFCS codes 617 (mixed wetland hardwood), 630 (wetland forested mixed), 631 (wetland shrub), 641 (freshwater marsh), 643 (wet prairies), 644 (emergent aquatic vegetation), 520 (lakes), and 530 (reservoirs); these wetlands and surface waters can be found scattered throughout the project corridor. However, no individuals were observed during field reviews. Given that wetland communities are protected by state and federal regulations, land management activities in wetlands tend to be of more limited scope as compared to upland areas. Therefore, the potential for these wetland-dependent state-listed species to occur in the project corridor was deemed to be higher than that of the following state-listed species that depend on upland conditions.

High Pine and Scrub Plants – State-listed plants that favor high pine and scrub habitat types, such as sandhill, scrubby flatwoods, scrub, oak scrub, and pine flatwoods, include the following species:

- Variable-leaved Indian-plantain (*Arnoglossum diversifolium*)
- Incised groove-bur (*Agrimonia incisa*)
- Ashe's savory (*Calamintha ashei*)
- Sand butterfly pea (*Centrosema arenicola*)
- Nodding pinweed (*Lechea cernua*)
- Paper nailwort (*Paronychia chartacea*)
- Giant orchid (*Pteroglossaspis ecristata*)
- Scrub bluestem (*Schizachyrium niveum*)

These species have the potential to occur in high pine and scrub habitat types (FLUCFCS code 411), as well as certain disturbed areas (FLUCFCS code 210). No individuals were observed, and upland areas are subject to routine maintenance including mowing, nuisance/exotic vegetation



control, and other land management activities that can preclude establishment of native plant communities.

To summarize potential involvement with state-listed plant species, there are several areas along the corridor that could provide habitat. As needed, during the design and permitting phases of this project, the Enterprise will conduct a general plant survey and if any protected plant species are found within 25 feet of construction limits, coordination will occur with the FDACS to secure any necessary permits. In an effort to mitigate impacts to protected plant species within the study area, the Enterprise will coordinate with the FDACS prior to construction for possible relocation of protected plants. Therefore, the project will have no effect anticipated on state listed plant species that occur in uplands and *No Adverse Effect Anticipated* on state listed plant species that occur in wetlands.

Table 3-2 lists the state protected wildlife and plant species known to occur within Polk and Osceola Counties that could potentially occur near the study area based on potential availability of suitable habitat and known ranges.

Table 3-5: State Listed Species with the Potential to Occur

Species	Common Name	FWC Status	Potential for Occurrence	Comments	Effect Determination
Avian					
<i>Athene cunicularia floridana</i>	Florida burrowing owl	T	Moderate	No known presence nearby but could occur in open upland areas.	NAEA
<i>Egretta caerulea</i>	Little Blue Heron	T	Moderate	Prefers wetlands/surface waters.	NAEA
<i>Egretta tricolor</i>	Tricolored Heron	T	Moderate	Prefers wetlands/surface waters.	NAEA



Table 3-2: State Listed Species with the Potential to Occur (Continued)

Species	Common Name	FWC Status	Potential for Occurrence	Comments	Effect Determination
<i>Falco sparverius paulus</i>	Southeastern American kestrel	T	Moderate	Several disturbed uplands and open areas present that could provide habitat.	NAEA
<i>Grus canadensis pratensis</i>	Florida sandhill crane	T	Moderate	Foraging habitat varies among many habitat types; prefers sparse canopy or open land.	NAEA
<i>Platalea ajaja</i>	Roseate Spoonbill	T	Moderate	Prefers wetlands/surface waters.	NAEA
Reptiles					
<i>Gopherus poluphemus</i>	Gopher tortoise	T	High	Burrows observed within and adjacent to R/W.	NAEA
<i>Lampropeltis extenuata</i>	Short-tailed snake	T	Low	Potential habitat limited to FLUCFCS codes 411 and 421.	NAEA
<i>Pituophis melanoleucus mugitus</i>	Florida pine snake	T	Low	Prefers pine-dominated uplands (such as FLUCFCS codes 411 and 441)	NAEA
Species	Common Name	FDACS Status	Potential for Occurrence	Comments	Effect Determination
Plants					
<i>Agrimonia incisa</i>	Incised groove-bur	T	Low	Potential habitat limited to FLUCFCS codes 411 and 420.	NAEA



Table 3-2: State Listed Species with the Potential to Occur (Continued)

Species	Common Name	FDACS Status	Potential for Occurrence	Comments	Effect Determination
<i>Arnoglossum diversifolium</i>	Variable-leaved Indian-plantain	T	Low	Potential habitat includes sandhill.	NAEA
<i>Calamintha ashei</i>	Ashe's savory	T	Low	Potential habitat limited to FLUCFCS codes 411 and 420.	NAEA
<i>Calopogon multiflorus</i>	Many-flowered grass-pink	E	Moderate	Potential habitat includes wetlands.	NAEA
<i>Carex chapmanii</i>	Chapman's sedge	T	Moderate	Potential habitat includes wetlands.	NAEA
<i>Centrosema arenicola</i>	Sand butterfly pea	E	Low	Potential habitat limited to FLUCFCS codes 411 and 420.	NAEA
<i>Coelorachis tuberosa</i>	Piedmont jointgrass	T	Moderate	Potential habitat includes wetlands.	NAEA
<i>Hartwrightia floridana</i>	Hartwrightia	T	Moderate	Potential habitat includes wetlands.	NAEA
<i>Illicium parviflorum</i>	Star anise	E	Moderate	Potential habitat includes wetlands.	NAEA
<i>Lechea cernua</i>	Nodding pinweed	T	Low	Potential habitat limited to FLUCFCS codes 411 and 420.	NAEA
<i>Litsea aestivalis</i>	Pondspice	E	Moderate	Potential habitat includes wetlands.	NAEA
<i>Matelea flordana</i>	Florida spiny-pod	E	Low	Potential habitat includes uplands.	NAEA



Table 3-2: State Listed Species with the Potential to Occur (Continued)

Species	Common Name	FDACS Status	Potential for Occurrence	Comments	Effect Determination
<i>Nemastylis floridana</i>	Celestial lily	E	Moderate	Potential habitat includes wetlands.	NAEA
<i>Nolina atopocarpa</i>	Florida beargrass	T	Low	Potential habitat includes uplands.	NAEA
<i>Panicum abscissum</i>	Cutthroat grass	E	Moderate	Potential habitat includes wetlands.	NAEA
<i>Paronychia chartacea</i>	Paper-like nailwort	E	Moderate	Previously documented near southern boundary of study area.	NAEA
<i>Pteroglossaspis ecristata</i>	Giant orchid	T	Low	Potential habitat limited to FLUCFCS codes 411 and 420.	NAEA
<i>Salix floridana</i>	Florida willow	E	Moderate	Potential habitat includes wetlands.	NAEA
<i>Schizachyrium niveum</i>	Scrub bluestem	E	Low	Potential habitat limited to FLUCFCS 411 and 420.	NAEA

Ranking: E – endangered, T – threatened, NAEA= No Adverse Effect Anticipated

Sources:

(1) FWC – Florida Fish and Wildlife Conservation Commission, Florida's Threatened and Endangered Species List, Updated December 2022.

<https://myfwc.com/media/1945/threatened-endangered-species.pdf> accessed February 2025

(2) FDACS – Florida Department of Agriculture and Consumer Services, Florida's Endangered, Threatened, and Commercially exploited Species

<https://www.fnai.org/BiodiversityMatrix/index.html> accessed February 2025

Note: In accordance with Florida Administrative Code (FAC) Title 68A-27.0012, Procedures for Listing and Removing Species from Florida's Endangered and Threatened Species List, federally endangered or threatened species under the Endangered Species Act will be listed by the FWC by their federal designation.



3.1.6 Managed and Protected Species

Bald Eagle

The bald eagle (*Haliaeetus leucocephalus*) is protected by the Bald and Golden Eagle Protection Act (BGEPA) and the Migratory Bird Treaty Act (MBTA). Habitat for this species includes estuaries, lakes, and reservoirs, near which they build nests in tall trees or other structures. No bald eagle nests have been documented within 660 feet of the study area and no bald eagle nests were observed during the field reviews. Three bald eagle nests have been documented within one mile of the project area; PO184, PO172, and PO172a. Each of these documented nests are located more than 1,000 feet east of the project area.

An updated survey will be completed during the final design and permitting phase of the project to evaluate the status of the currently documented nests and to identify potential new nests within 660 feet of the study area. If new nests are identified in the study area, work within 660 feet of nests will adhere to the criteria outlined by the USFWS, and the Enterprise will coordinate with USFWS should active nests be identified within 330 feet of proposed work.

Osprey

The osprey (*Pandion haliaetus*) is protected by the MBTA. Habitat for this species includes estuaries, lakes, and reservoirs, near which they build nests in trees or other structures. No osprey nests were observed during the field reviews. Since a permit is not required for the removal of inactive nests, any required nest removal can be scheduled to occur during times of non-nesting.

Florida Black Bear

Florida black bear (*Ursus americanus floridanus*) is no longer listed as a threatened species by the FWC. While it was removed from the state list of protected species in August 2012, it is still protected through the Florida Administrative Code 68A-4.009 Florida Black Bear Conservation. The project occurs within the primary range of the Ocala population within the South-Central Bear Management Unit, and bears are considered abundant in the study area. In total, two nuisance reports of Florida black bears occurred within the study area in 2023. Although suitable habitat occurs in pockets surrounding the study area, this project is not anticipated to result in an increase



in the chance for road-associated mortalities given the existing developed nature of the transportation corridor.

Bat Species

All bat species are protected in Florida per chapter 68A of the Florida Administrative Code. The following bat species are known to occur in the region: the Mexican free-tail (*Tadarida brasiliensis*), tri-colored (*Perimyotis subflavus*), evening (*Nycticeius humeralis*), big brown (*Eptesicus fuscus*), northern yellow (*Dasypterus intermedius*), and Rafinesque's big-eared (*Corynorhinus rafinesquii*). Bats utilize structures such as bridges as well as cavities in trees for roosting habitat. The eastern part of the study area falls within the CA for the Florida bonneted bat (*Eumops floridanus*), a federally endangered species, and potential habitat occurs on the study area. An updated evaluation and technical assistance with the USFWS will occur during the design phase of this project and agency coordination is expected. This project May Affect the Florida bonneted bat and surveys for these species are recommended during the design phase.

Table 3-3 lists the managed and protected species known to occur within Polk County and Osceola County that could potentially occur near the study area based on potential availability of suitable habitat and known ranges. Section 7 of this report summarizes the effect determinations that have been made for each federal- and state-managed/protected species.



Table 3-6: Managed and Protected Species with the Potential to Occur

Species	Common Name	USFWS Status	Habitat Proximity	Potential for Occurrence	Comments
Avian					
<i>Haliaeetus leucocephalus</i>	Bald eagle	N	Within R/W	Low	No nests within 660-feet of existing R/W; new nests could occur in tall trees or structures.
<i>Pandion haliaetus</i>	Osprey	N	Within R/W	Moderate	No nests observed.
Mammals					
<i>Ursus americanus floridanus*</i>	Florida black bear	N	Within R/W	Moderate	Known to occur within the project footprint.
<i>Myotis spp.</i>	Bat species	N	Within R/W	Low	No evidence under bridges; limited other structures to provide habitat.

Ranking: N – none

Sources:

- (1) USFWS – U.S. Fish and Wildlife Service status, Official lists of Threatened and Endangered species, 50 CFR 17.11
 (2) FWC – Florida Fish and Wildlife Conservation Commission, Florida's Threatened and Endangered Species List, Updated June 2021.

<https://myfwc.com/media/1945/threatened-endangered-species.pdf> accessed February 2020

<http://www.fnai.org/bioticssearch.cfm> accessed February 2020

FWC Notations:

*The Florida black bear is no longer listed as threatened, however is still protected under the FWC Florida Black Bear Management Plan.

Note: In accordance with Florida Administrative Code (FAC) Title 68A-27.0012, Procedures for Listing and Removing Species from Florida's Endangered and Threatened Species List, federally endangered or threatened species under the Endangered Species Act will be listed by the FWC by their federal designation.

3.1.7 Peninsular Florida Plant Genera of Concern

As per the April 2021 FDOT Native Florida Plant Coordination Guidance, peninsular Florida non-listed plants of interest or concern were reviewed for this project. None of the genera were listed in the FNAI Elemental Occurrence Report as documented in the study area with the exception of the scrub lupine, member of the *Lupinus* genus. Plants of the genera of concern list considered as "potential" within the FNAI report include many-flowered grass- pink (member of the *Calopogon*





genus) and Lewton's polygala (member of the Polygala genus) are state or federal listed species previously evaluated. While plants of the genera of concern list were not specifically targeted with surveys, the genera with the greatest likelihood of occurring in the project footprint include Asclepias, Chamaecrista, Liatris, Linum, and Lupinus. As previously described, a design-phase survey will be conducted and any observed plants included in the genera of concern list can be reported to the FDACS. The agency may choose to forward the documentation to the Endangered Plant Advisory Council or similar organizations for plant preservation.

3.1.8 Wildlife Crossings

Roads have been documented to create both direct and indirect deleterious effects to wildlife by creating a barrier to movement and fragmenting natural habitats. As a result, the FDOT has prepared wildlife crossing guidelines (2023) in coordination with the USFWS and FWC to evaluate appropriateness of the inclusion of wildlife crossings for proposed projects on the State Highway System. Evaluation criteria include: a documented science-based need for a crossing supported by the USFWS and/or FWC; wildlife species documented within and using the study area; documented roadkill of species with high conservation value or within a known area where traversing the roadway creates a potential hazard to motorists and/or wildlife; presence within a documented range of the Florida panther and/or Florida black bear; project crossing of Critical Habitat, ecological greenway, or other landscape-level habitat linkage; presence of public conservation lands or lands under perpetual conservation easement necessary to achieve successful use of a crossing feature; compatibility of future land use and development patterns; and project location within area of critical conservation need. Section 259.1055, Florida Statutes, Florida Wildlife Corridor Act, was passed in 2021 to encourage the development of wildlife crossings for the protection of safety of wildlife and the traveling public.

While the study area is within a Florida black bear population range, there have not been any Florida black bear road kills since 2001 along the corridor. There are no documented Florida panther mortalities in this region and the corridor is far north of the Florida panther CA. There are Florida Ecological Greenways Network Priorities or Green Links along the corridor; Priority 2 areas cover scattered areas along the full length of the corridor. Conservation lands along the project



corridor include a portion of the Upper Lakes Basin Watershed and the Reedy Creek Mitigation Bank near the northeastern limits of the project. There are no locations along the corridor where conservation lands are present on both sides.

The Least-Cost Pathway (LCP) was developed for the USFWS Florida Panther Recovery Implementation Team, Transportation Sub-team (2022) to identify potential pathways and corridors that wildlife species are likely to utilize as a pathway between suitable large habitats (Identifying Least-Cost Paths and Corridors for Florida Panther within South-Central Florida, Summary Report; 2022). The Least Cost Path and Corridor Analysis identified Primary, Secondary, and Tertiary Corridors, based on existing land use. The corridors are intended to serve as links between protected conservation lands. Within the Central Polk Parkway East Project Area, large portions of the project area are covered by Primary and Secondary Corridors. Within the Central Polk Parkway East Project Area, these corridors are intended to link between Disney Preserve/Southport Ranch in the east to the Hilochee Wildlife Management Area (WMA) in the west. In June 2024, the FDOT completed construction of the I-4 at C.R. 557 wildlife crossing within the Hilochee WMA.

Within the Central Polk Parkway East project study area, two Least Cost Pathways (LCPs) were identified, a northern LCP and a southern LCP. Additionally, Horse Creek was identified as a Primary Corridor. Both LCPs and Horse Creek are shown on **Figure 3-1**.

The Southern LCP is located within improved pasture owned by Southern Silica. The Polk Future Land Use Map (2030) identifies a significant portion of this crossing located within land designated as the North Ridge Tourism Commercial Center. On October 6, 2025, the City of Davenport established the Sand and Silica Community Development District (CDD) by approval of Ordinance No. 1354. The CDD master plan identifies 1,700 future residential units in close proximity to the LCP. Due to future land use changes, the Southern LCP is not recommended for a wildlife feature.

The Northern LCP is located north of Parker Road. In the future, this LCP would need to cross the future Central Polk Parkway East, U.S. 17/92 and the future Poinciana Parkway, currently under design. The Northern LCP is located close to the planned U.S. 17/92 / Poinciana Parkway

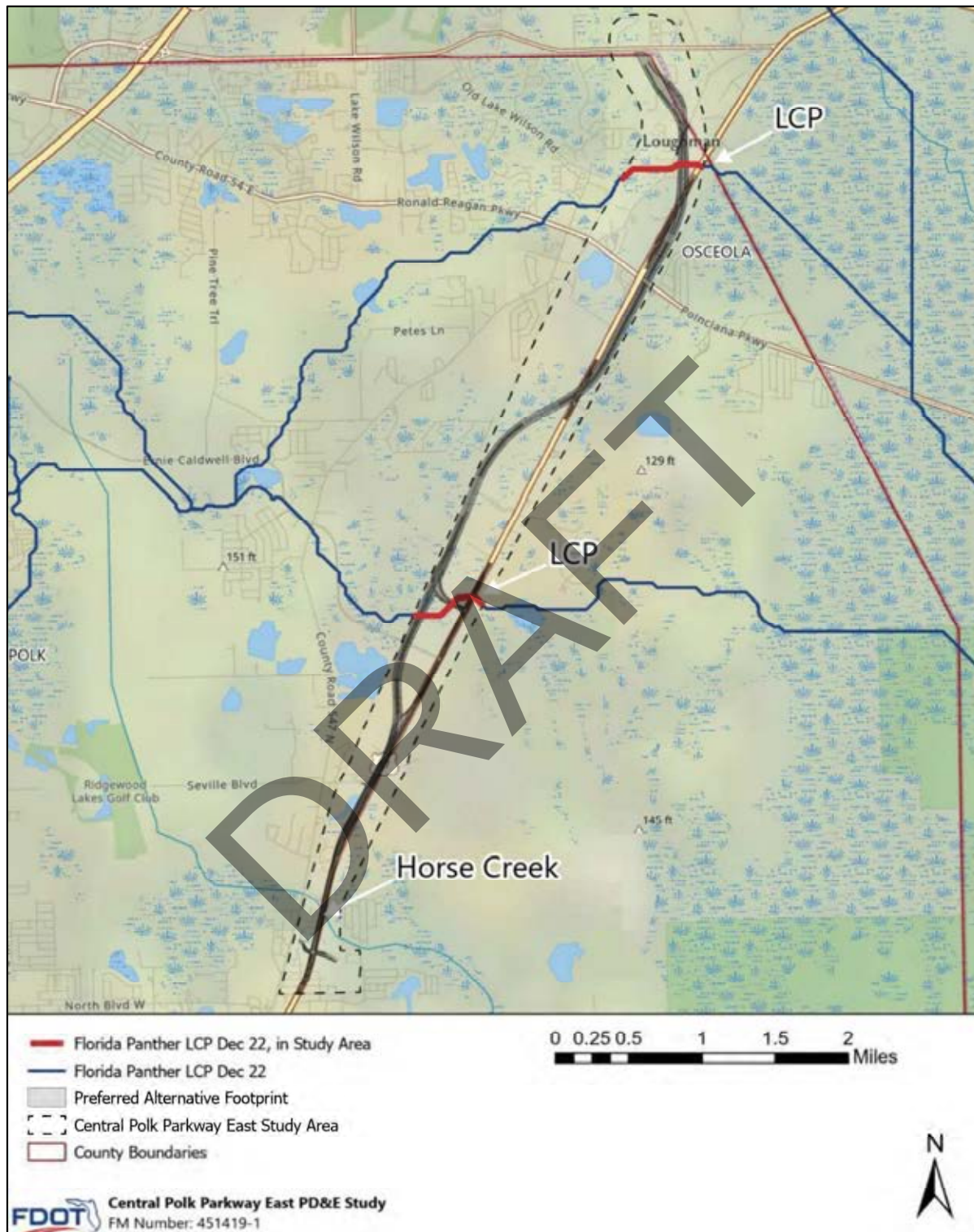


Interchange. Due to future land use changes, the Northern LCP is not recommended for a wildlife feature.

Horse Creek traverses US 17/92 near the Shady Oaks community. Horse Creek flows through an existing bridge culvert (160019), which was constructed in 1934. Undeveloped lands located east of US 17/92, the Horse Creek floodplain is under the ownership of the Standard Sand & Silica Company. Polk County's 2030 Future Land Use Map shows that the land east of US 17/92 is a mix of Residential Medium Density and City of Davenport. There is a portion of the Horse Creek floodplain west of US 17/92 which is designated as Preservation in Polk County's 2030 Future Land Use Map, but this area is under private ownership with no recorded conservation easement. There are no portions of the Horse Creek floodplain which are currently under public ownership.

During the replacement of bridge culvert 160019 at Horse Creek, The Enterprise commits to the implementation of wildlife features such bridges with shelves, specially designed culverts, enlarged culverts or drainage culverts and exclusionary devices such as fencing, walls or other barriers, or some combination of these features at Horse Creek.

Figure 3-1 LCP Locations Map





4.0 Wetland Evaluation

Approximate wetland boundaries were identified in accordance with the State of Florida Wetlands Delineation Manual (Chapter 62-340, Florida Administrative Code [F.A.C.]), 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), EO 11990, and Part 2, Chapter 9 -Wetlands and Other Surface Waters of the FDOT PD&E Manual. Attachment F shows the location of the wetlands evaluated within the study area. Formal wetland boundaries were not determined as part of this study and will be completed during the design and permitting phases of this project.

4.1 Wetland and Surface Water Communities

4.1.1 Wetlands

Wetland and surface waters within the study area were field verified by project scientists between January 17th and 27th, 2025. Preliminary wetland and surface water boundaries were determined, and habitat quality was assessed. There are numerous freshwater wetlands and surface waters within and adjacent to the project right of way. Wetland functional assessments were performed using the Uniform Mitigation Assessment Method (UMAM) and all wetlands are classified according to the following Florida Land Use Classification, Forms, and Covers (FLUCFCS) code subcategories:

- **610 – Wetland Hardwood Forests**

These communities are forested wetlands that contain 66 percent or more dominated by wetland hardwood species. Dominant wetland hardwood species observed in these communities include swamp bay (*Persea palustris*), red maple (*Acer rubrum*), swamp tupelo (*Nyssa sylvatica*), American elm (*Ulmus americana*), water oak (*Quercus nigra*), and laurel oak (*Quercus laurifolia*). The midstories mostly contained young trees and saplings while the understories were sparse with lightly scattered herbaceous species including ferns and vines. **Photo 1** shows Wetland 51, which is an example of a wetland hardwood forest.



Photo 1 – Wetland 51 (FLUCFCS 610)

- 615 – Streams and Lake Swamps

The communities included in this category are often referred to as bottomland or stream hardwoods, and are usually found on but not restricted to river, creek, and lake flood plain or overflow areas. A lake swamp is located north of Ronald Reagan Parkway and has a small flowing stream at its center. This system is surrounded by residential development to the east and on-going construction to the south. The vegetative community is dominated by native trees such as swamp bay and red maple with under story of elderberry (*Sambucus nigra*). Carolina willow (*Salix caroliniana*), and Peruvian primrosewillow (*Ludwigia peruviana*) are dominant by a culvert that flows under Ronald Reagan Parkway. The wetland has natural areas to the north connected by flowing surface water and development to the southeast. **Photo 2** shows Wetland 63, which is an example of a lake swamp.



Photo 2 – Wetland 63 (FLUCFCS 615)

- 621 – Cypress

This category is reserved for those wetland hardwood communities which contain a canopy dominated by bald cypress (*Taxodium distichum*) and pond cypress (*Taxodium ascendens*). Sub-dominant hardwood species include red maple, sweetbay magnolia, and laurel oak. Common shrub vegetation observed within this wetland type includes; wax myrtle (*Morella cerifera*), Carolina willow, Peruvian primrosewillow, and young trees. Common herbaceous vegetation observed within this wetland type includes; Virginia chain fern (*Woodwardia virginica*), royal fern (*Osmunda regalis* var. *spectabilis*), and lizard's tail (*Saururus cernuus*). **Photo 3** shows Wetland 40, which is an example of a cypress swamp.



Photo 3 – Wetland 40 (FLUCFCS 621)

- **630 – Wetland Forested Mixed**

The communities included in this category are characterized by a mixture of hardwood species in which neither hardwoods or conifers achieve a 66 percent dominance of the crown canopy composition. All wetland forested mixed communities in the study area receive stormwater runoff from the road and have been previously disturbed by adjacent development. The systems are dominated by red maple, swamp bay, dahoon holly, slash pine (*Pinus elliottii*), and swamp fern (*Telmatoblechnum serrulatum*). **Photo 4** shows Wetland 35, which is an example of a wetland forested mixed community.



Photo 4 – Wetland 35 (FLUCFCS 630)

- **640 – Vegetated Non-Forested Wetland**

The communities included in this category are characterized by herbaceous wetland species that contain a variety of dominant and sub-dominant species that are not structurally supported by water. The dominant species in these communities include maidencane (*Panicum hemitomon*), torpedo grass (*Panicum repens*), bushy bluestem (*Andropogon glomeratus*), yellow-eyed grass (*Xyris* sp.), and broomsedge (*Andropogon virginicus*). **Photo 5** shows Wetland 62, which is an example of a vegetated non-forested wetland.



Photo 5 – Wetland 62 (FLUCFCS 640)

- **641 – Freshwater Marshes**

The communities included in this category are characterized by a dominance of herbaceous vegetation where the dominant species are not structurally supported by water. Common herbaceous vegetation within this wetland type includes bulltongue arrowhead (*Sagittaria lancifolia*), pickerelweed (*Pontederia cordata*), American white waterlily (*Nymphaea odorata*), and Cattail (*Typha latifolia*). **Photo 6** shows Wetland 27, which is an example of a freshwater marsh.



Photo 6 – Wetland 27 (FLUCFCS 641)

- **644 – Emergent Aquatic Vegetation**

The communities included in this category are characterized by an extended hydroperiod and the dominance of wetland plant species that are floating or above the surface of the water. These communities often create an ecotone around open surface waters that are too deep for rooted vegetation. Common vegetation within this wetland type includes spatterdock (*Nuphar* sp.), white water lily (*Nymphaea odorata*), duckweed (*Lemna* sp.), bladderwort (*Utricularia* sp.), spikerush (*Eleocharis* sp.), and bulrush (*Scirpus* sp.). **Photo 7** shows an example of emergent aquatic vegetation.



Photo 7 – Wetland 28 (FLUCFCS 644)



4.1.2 Surface Waters

There are several ditches, ponds, and lakes within and adjacent to the study area (see **Appendix D**). All surface waters are freshwater, and none are considered Essential Fish Habitat or provide access to any marine or estuarine species. These surface waters can provide habitat for aquatic species such as fish, alligators, and turtles, as well as birds. Wet areas that are inundated by two to 15 inches of water could provide suitable foraging habitat for wood storks and wading birds when surface water is present. Surface waters are classified according to the following FLUCFCS code subcategories:

- **510 – Streams and Waterways**

The streams and waterways category includes canals and ditches that were identified within the project area.

- **520 – Lakes**

The Lakes category includes extensive inland water bodies, excluding reservoirs.

- **530 – Reservoirs**

Reservoirs are artificial impoundments of water. Other surface waters are defined as open water bodies and manmade drainage features.

4.2 Wetland and Other Surface Water Impacts

Potential direct impacts to wetlands and other surface waters have been assessed for all Build Alternatives within the project corridor using GIS. The wetlands and other surface waters within the study area were overlaid with the Build Alternatives to identify areas of impacts. **Table 4-1** provides anticipated wetland and other surface water impacts for each Build Alternative.

**Table 4-1: Wetland and Other Surface Water Impacts**

Alternative 1 – Co-Located			Alternative 2 – New Alignment		
Wetland / Surface Water Identification	FLUCFCS	Impact Area (Acres)	Wetland / Surface Water Identification	FLUCFCS	Impact Area (Acres)
W46, W51, W63	610	0.61	W51, W63	610	0.46
W46, W49, W51, W52, W55, W57, W61, W63	615	34.61	W46, W49, W51, W52, W57, W61, W63	615	38.33
W3, W9, W16, W35	630	12.66	W40	621	0.64
W24, W37, W45, W48, W50, W53, W54, W62	640	10.49	W3, W9, W16	630	14.62
W2, W4, W11, W14, W23, W24, W36, W37, W45, W62, W64, W66	641	7.92	W48, W50, W54, W62	640	3.25
W28	644	0.01	W2, W4, W11, W21, W25, W27, W41, W47, W62, W64, W66	641	16.02
Total Acres		66.3	Total Acres		73.32

4.2.1 Proposed Stormwater Treatment Facilities

The proposed stormwater treatment facilities have not been designed. This will be updated as the alternatives become available.

4.2.2 Avoidance and Minimization

Avoidance and minimization measures include utilizing existing roadway fill areas for bridge approaches and roadway widening, and siting stormwater treatment facilities outside of wetland areas to the extent feasible. Additionally, proposed impacts will be minimized by adjusting slopes where safely possible and stormwater treatment locations will avoid wetlands when practicable. Surficial runoff from additional impervious areas will be treated to prevent increased water quality degradation as a result of the proposed transportation improvements.

Due to the incorporation of stormwater treatment facilities, the proposed project will not result in the degradation of water quality in the wetlands and other surface waters of the study area. Additionally, sedimentation and erosion control measures (i.e., silt fences, turbidity barriers) will



be implemented during construction to minimize soil exposure and siltation into the water column, further reducing adverse impacts to wetlands and other surface waters.

As part of this PD&E study, two (2) project alternatives were evaluated; Alternative 1 – Co-Located and Alternative 2 – New Alignment. The Preferred Alternative (Alternative 2 – New Alignment) was selected based on the natural, physical, social, and right of way information. Avoidance and minimization, to the greatest extent possible, of impacts to wetlands and other surface waters was considered in the selection of the Preferred Alternative. A detailed analysis of the Preferred Alternative is included in the Preliminary Engineering Report.

4.2.3 Indirect and Cumulative Effects

Indirect Effects are reasonably foreseeable effects that occur as a result of an action but occur later in time or are removed from the action location. Indirect impacts resulting from construction of the Preferred Alternative include secondary wetland and surface water impacts in the proposed study area. These impacts are anticipated to be minor because they are already associated with the existing roadways. Habitats along the edge of the existing roadways were disturbed when these areas were constructed and have since experienced constant disturbance from right of way maintenance and exposure to nuisance/exotic species. This “edge effect” will remain with the construction of the proposed project but would migrate to the new transitional area between remaining wetlands and new construction. Therefore, these disturbed edges are not expected to increase in areas where the roadways already exist.

Cumulative Effects result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. The Enterprise will minimize direct and indirect impacts to the extent practicable to reduce potential contribution to the cumulative effects. Unavoidable impacts to wetland function and value will be offset at an approved mitigation bank within the service area and drainage basin of the impacts.



4.3 Uniform Mitigation Assessment Method Assessment

The UMAM was established to fulfill the mandate of subsection 373.414(18), F.S., which requires the establishment of a uniform mitigation assessment method to determine the amount of mitigation needed to offset adverse impacts to wetlands and other surface waters and to award and deduct mitigation bank credits. Functional loss was calculated by wetland and natural other surface water habitat type for each Build Alternative using the UMAM.

UMAM datasheets for each habitat type impacted are included in **Appendix H**. The UMAM scores are subject to agency review and revisions are anticipated during the permitting process. **Table 4-2** summarizes anticipated wetland impacts and UMAM functional loss for each wetland type impacted by each Build Alternative.

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Table 4-2: Wetland Impacts and UMAM Score

Alternative 1 – Co-Located										
Roadway Improvements Wetland / Surface Water Identification	FLUCFCS	Impact Area (Acres)	Location & Landscape Support		Water Environment		Community Structure		Score (sum/30)	UMAM Functional Loss
			Current	With	Current	With	Current	With		
W46, W51, W63	610	0.61	5	0	6	0	6	0	0.57	0.35
W46, W49, W51, W52, W55, W57, W61, W63	615	34.61	4	0	3	0	5	0	0.40	13.84
W3, W9, W16, W35	630	12.66	5	0	6	0	6	0	0.57	7.17
W24, W37, W45, W48, W50, W53, W54, W62	640	10.49	6	0	6	0	4	0	0.53	5.59
W2, W4, W11, W14, W23, W24, W36, W37, W45, W62, W64, W66	641	7.92	6	0	6	0	5	0	0.57	4.49
W28	644	0.01	6	0	6	0	4	0	0.53	0.01
Subtotal		66.3								31.45

Alternative 2 – New Alignment										
Roadway Improvements Wetland / Surface Water Identification	FLUCFCS	Impact Area (Acres)	Location & Landscape Support		Water Environment		Community Structure		Score (sum/30)	UMAM Functional Loss
			Current	With	Current	With	Current	With		
W51, W63	610	0.46	5	0	6	0	6	0	0.57	0.26
W46, W49, W51, W52, W57, W61, W63	615	38.33	4	0	3	0	5	0	0.40	15.33
W40	621	0.64	5	0	4	0	6	0	0.50	0.32
W3, W9, W16	630	14.62	5	0	6	0	6	0	0.57	8.28
W48, W50, W54, W62	640	3.25	6	0	6	0	4	0	0.53	1.73
W2, W4, W11, W21, W25, W27, W41, W47, W62, W64, W66	641	16.02	6	0	6	0	5	0	0.57	9.08
Subtotal		73.32								35.00



4.4 Conceptual Mitigation Plan

There are no practical avoidance alternatives to the construction of the proposed project design within wetland areas. Wetland impacts will be further refined during future project phases and minimization/avoidance measures will be implemented to the extent practicable as discussed above.

Compensatory mitigation for this project will be provided using mitigation banks and other mitigation options to satisfy state and federal requirements. Compensatory mitigation will be provided 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. In accordance with EO 11990.

The project falls within the Kissimmee Ridge watershed. Four mitigation banks are listed as having available credits within this watershed: Reedy Creek Mitigation Bank, Kissimmee Ridge Mitigation Bank, Lake Livingston Mitigation Bank, and Crooked Lake Mitigation Bank.

4.5 Special Designations

This project does not include any areas designated as Outstanding Florida Waters, Aquatic preserves, Scenic Highways, or Wild and Scenic Rivers.



5.0 Essential Fish Habitat

The Magnuson-Stevens Fishery Conservation and Management Act, as amended through October 11, 1996, requires the regional Fishery Management Councils and the Secretary of Commerce to describe and identify Essential Fish Habitat (EFH) for species under federal Fishery Management Plans. EFH is defined in the Magnuson-Stevens Act as “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.” The term “fish” includes finfish, crabs, shrimp, and lobsters in the Gulf of Mexico region. On April 23, 1997 [62 Federal Register (FR) 19723], the National Marine Fishery Service (NMFS) issued proposed regulations containing guidelines for the description and identification of EFH in fishery management plans, adverse impacts on EFH, and actions to conserve and enhance EFH. These rules were revised and finalized on January 22, 2002 (67 FR 2343). The regulations also provide a process for NMFS to coordinate and consult with federal and state agencies on activities that may adversely affect EFH. The purpose of the rule is to assist in describing and identifying EFH, minimize adverse effects on EFH, and identify other actions to conserve and enhance EFH. The purpose of the coordination and consultation provisions is to specify procedures for adequate consultation with NMFS on activities that may adversely affect EFH.

5.1 EFH Impact Evaluation

Based on the project location, information provided in the ETDM website, and GIS-based analysis of impacts, NOAA's NMFS has provided concurrence that EFH would not be impacted by the proposed improvements.



6.0 Anticipated Permits

The FDEP, SFWMD, SWFWMD, and USACE regulate impacts to wetlands within the study area. The U.S. District Court for the District of Columbia issued a decision vacating the U.S. Environmental Protection Agency's (EPA) approval of Florida's application to assume Clean Water Act Section 404 permitting responsibilities in certain waters in Florida. In light of this decision, the USACE is currently the only entity in the State of Florida with authority to issue permits under Section 404 of the Clean Water Act. As this project spans the jurisdiction of SFWMD and SWFWMD, it is anticipated that one water management district will lead the Environmental Resource Permitting for the project corridor. Other agencies, including the USFWS, the EPA, and the FWC, review and comment on wetland permit applications.

40 CFR Part 122 prohibits point source discharges of stormwater to waters of the U.S. without a National Pollutant Discharge Elimination System (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.

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 the 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 to support the permit application.



It is anticipated that the following permits will be required for this project:

Permits and Approvals

Issuing Agency

Section 404 Dredge and Fill Permit

USACE

Environmental Resource Permit

SWFWMD /SFWMMD

National Pollutant Discharge Elimination System

FDEP

Gopher Tortoise Relocation Permit (as necessary)

FWC

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7.0 Conclusion

The 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 Part 2, Chapter 16 of the PD&E Manual. The following sections summarize the effect determinations that have been made for each federal- and state-protected species based upon their probability ranking and the implementation measures and/or commitments to offset any potential impacts to each species and potential impacts to wetlands and other surface waters.

7.1 Protected Species and Habitat

Table 7-1 lists the federally listed wildlife and plant species known to occur within Polk and Osceola Counties that could potentially occur near the study area based on potential availability of suitable habitat and known ranges. Table 7-2 lists the state listed wildlife and plant species.

Table 7-1: Federally Listed Species with the Potential to Occur

Species	Common Name	USFWS Status	Effect Determination
<i>Caracara plancus</i>	Crested caracara	T	May affect, but not likely to adversely affect
<i>Laterallus jamaicensis ssp. Jamaicensis</i>	Eastern black rail	T	May affect, but not likely to adversely affect
<i>Rostrhamus sociabilis plumbeus</i>	Everglade snail kite	E	May affect, but not likely to adversely affect
<i>Aphelocoma coerulescens</i>	Florida scrub-jay	T	May affect, but not likely to adversely affect
<i>Picoides borealis</i>	Red-cockaded woodpecker	T	May affect, but not likely to adversely affect
<i>Mycteria americana</i>	Wood stork	T	May affect, but not likely to adversely affect
<i>Danaus plexippus</i>	Monarch butterfly	C	--
<i>Eumops floridanus</i>	Florida bonneted bat	E	May affect, but not likely to adversely affect
<i>Perimyotis subflavus*</i>	Tri-colored bat	E	May affect, but not likely to adversely affect
<i>Alligator mississippiensis</i>	American alligator	T	No effect
<i>Eumeces egregious lividus</i>	Blue-tailed mole skink	T	May affect
<i>Drymarchon couperi</i>	Eastern indigo snake	T	May affect, but not likely to adversely affect
<i>Neoseps reynoldsi</i>	Sand skink	T	May affect



Table 7-1: Federally Listed Species with the Potential to Occur (Continued)

Species	Common Name	USFWS Status	Effect Determination
<i>Crotalaria avonensis</i>	Avon park harebells	E	No effect
<i>Nolina brittoniana</i>	Britton's beargrass	E	No effect
<i>Warea carteri</i>	Carter's mustard	E	No effect
<i>Ziziphus celata</i>	Florida Ziziphus	E	No effect
<i>Hypericum cumulicola</i>	Highlands scrub hypericum	E	No effect
<i>Polygala lewtonii</i>	Lewton's polygala	E	No effect
<i>Paronychia chartacea</i>	Papery Whitlow-wort	T	No effect
<i>Chionathus pygmaeus</i>	Pygmy fringe-tree	E	No effect
<i>Polygonella myriophylla</i>	Sandlace	E	No effect
<i>Liatris ohlingerae</i>	Scrub blazingstar	E	No effect
<i>Eriogonum longifolium</i> var. <i>gnaphalifolium</i>	Scrub buckwheat	T	No effect
<i>Dicerandra frutescens</i>	Scrub mint	E	No effect
<i>Conradina brevifolia</i>	Short-leaved rosemary	E	No effect
<i>Polygonella basiramia</i>	Wireweed	E	No effect

Ranking: E - endangered, T – threatened, C – candidate, * - Proposed species for federal listing as Endangered

Sources:

(1) USFWS - U.S. Fish and Wildlife Service status, Official lists of Threatened and Endangered species, 50 CFR 17.11

(2) Federally Listed Species in Polk County and Osceola County, Florida | <https://ecos.fws.gov/ecp/species-reports>

Note: In accordance with Florida Administrative Code (FAC) Title 68A-27.0012, Procedures for Listing and Removing Species from Florida's Endangered and Threatened Species List, federally endangered or threatened species under the Endangered Species Act will be listed by the FWC by their federal designation.

Table 7-2: State Listed Species with the Potential to Occur

Species	Common Name	FWC Status	Effect Determination
<i>Athene cunicularia floridana</i>	Florida burrowing owl	T	NAEA
<i>Egretta caerulea</i>	Little blue heron	T	NAEA
<i>Egretta tricolor</i>	Tricolored heron	T	NAEA
<i>Falco sparverius paulus</i>	Southeastern American kestrel	T	NAEA
<i>Grus canadensis pratensis</i>	Florida sandhill crane	T	NAEA
<i>Platalea ajaja</i>	Roseate spoonbill	T	NAEA
<i>Gopherus poluphemus</i>	Gopher tortoise	T	NAEA
<i>Lampropeltis extenuata</i>	Short-tailed snake	T	NAEA



Table 7-2: State Listed Species with the Potential to Occur (Continued)

Species	Common Name	FWC Status	Effect Determination
<i>Pituophis melanoleucus mugitus</i>	Florida pine snake	T	NAEA
<i>Agrimonia incisa</i>	Incised groove-bur	T	NAEA
<i>Arnoglossum diversifolium</i>	Variable- leaved Indian-plantain	T	NAEA
<i>Calamintha ashei</i>	Ashe's savory	T	NAEA
<i>Calopogon multiflorus</i>	Many- flowered grass-pink	E	NAEA
<i>Carex chapmanii</i>	Chapman's sedge	T	NAEA
<i>Centrosema arenicola</i>	Sand butterfly pea	E	NAEA
<i>Coelorachis tuberculosa</i>	Piedmont jointgrass	T	NAEA
<i>Hartwrightia floridana</i>	Hartwrightia	T	NAEA
<i>Illicium parviflorum</i>	Star anise	E	NAEA
<i>Lechea cernua</i>	Nodding pinweed	T	NAEA
<i>Litsea aestivalis</i>	Pondspice	E	NAEA
<i>Matelea floridana</i>	Florida spiny-pod	E	NAEA
<i>Nemastylis floridana</i>	Celestial lily	E	NAEA
<i>Nolina atopocarpa</i>	Florida beargrass	T	NAEA
<i>Panicum abscissum</i>	Cutthroat grass	E	NAEA
<i>Paronychia chartacea</i>	Paper-like nailwort	E	NAEA
<i>Pteroglossaspis ecristata</i>	Giant orchid	T	NAEA
<i>Salix floridana</i>	Florida willow	E	NAEA
<i>Schizachyrium niveum</i>	Scrub bluestem	E	NAEA

Ranking: E – endangered, T – threatened, NAEA= No Adverse Effect Anticipated

7.2 Wetland Evaluation

Wetlands and other surface water habitat types anticipated to be impacted by the proposed construction include natural wetlands and manmade waterways, streams, lakes, reservoirs, mixed wetland hardwoods, exotic wetland hardwoods, wetland forested mixed, wetland scrub, and freshwater marshes. Alternative 1 (Co-Located) would impact 66.3-acres of wetlands and surface waters and Alternative 2 (New Alignment) would impact 73.32-acres of wetlands and surface waters. Wetland impacts which result from the construction of the build alternative 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 the build alternative will be



completed through the use of mitigation banks and other mitigation options that satisfy state and federal requirements.

7.3 Essential Fish Habitat

This project will have no effect on Essential Fish Habitat.

7.4 Implementation Measures / Design Considerations

Based on the field and literature reviews outlined in this report, federal- and state-protected species have the potential to occur within the study area. In order to ensure that the proposed project will not adversely impact these species, the Enterprise will adhere to the following:

- The project will implement the USFWS-approved Standard Protection Measures for the Eastern Indigo Snake (most updated version) during the proposed roadway improvements.
- As determined necessary through agency technical assistance, the Enterprise will perform surveys for the species discussed in this report and other wildlife species during the project design phase to ascertain the involvement, if any, of protected species. Species specific surveys, conducted in accordance with appropriate survey guidelines, will be considered for, but not limited to, the sand skink, and the blue-tailed mole skink, the crested caracara, the Florida bonneted bat, and the gopher tortoise.
- During the design and permitting phases of this project, a Wood Stork Foraging Analysis per USFWS methodology will be conducted to determine the amount of biomass anticipated to be lost from wetland and other surface water impacts. Impacts to suitable foraging habitat for the federally protected 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 Enterprise and the appropriate regulatory agencies.
- As needed, during the design and permitting phases of this project, a general plant survey will be conducted, and if any federally or state protected plant species are found within 25 feet of construction limits, coordination will occur with the USFWS and the FDACS to secure any necessary permits.



- 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, coordination will occur with FWC to secure any necessary permits in accordance with the current FWC Gopher Tortoise Permitting Guidelines for gopher tortoises and associated commensal species before construction.
- If a bald eagle nest is identified within 660 feet of the proposed study area, the Enterprise will reinitiate technical assistance with the USFWS to secure all necessary approvals prior to the start of construction.
- During the design and permitting phases of this project, the Enterprise will conduct surveys to identify any osprey nests within the study area. If nest removal is deemed necessary, the Enterprise will remove nest(s) when they are inactive (i.e., without eggs or flightless young).
- Compensatory mitigation will be provided 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 in accordance with EO 11990.

7.5 Commitments

- 1) FDOT will implement the following commitments for the tricolored bat:
 - a) Upon listing of the tricolored bat, if the project contains suitable habitat and requires tree trimming and/or clearing, FDOT will not conduct tree trimming/clearing activities during the tricolored bat pup season (May 1st to July 15th) and when bats may be in torpor (when temperatures are below 45 degrees Fahrenheit).
 - b) Upon listing of the tricolored bat, if the project contains suitable habitat and FDOT needs to trim or clear trees or perform work on bridges/culverts during the maternity season and/or when the temperature is below 45 degrees Fahrenheit, then FDOT will survey the project area for evidence of the tricolored bat. The Indiana Bat and Northern Long-eared Bat Survey Guidance (USFWS), appendix J acoustic survey protocol in the year-round range (mist netting is not being conducted in Florida at this time), will be used for areas with tree trimming/clearing. For bridges and culverts, the Indiana Bat and Northern Long-eared Bat Survey Guidance, appendix K, Assessing Bridges and Culverts for Bats, will be used.





i. If the surveys result in no tricolored bats detected, then FDOT can proceed with the project activities. Negative results from bridge/culvert surveys are valid for 2 years. Negative results for acoustic surveys are valid for 5 years. However, negative results for either survey may be invalidated if additional tricolored bat survey data is submitted to FWS showing presence of the species within the vicinity of the project area. Additional survey work by FDOT, or application of the avoidance and minimization measures noted in #4, may be required if updated detections are reported, and may result in reinitiation of consultation with USFWS.

ii. If the surveys result in positive detections of the tricolored bat, FDOT will implement conservation measures such as: not conducting tree trimming/clearing activities during the tricolored bat pup season (May 1st to July 15th) when pups are not volant and not able to escape disturbance; similarly avoid tree trimming/clearing activities when the temperatures are below 45 degrees Fahrenheit when bats may be in torpor and unresponsive to disturbance.

- 2) A survey will be conducted for Audubon's crested caracara and Everglade snail kite, per USFWS protocol during the design phase.
- 3) A survey will be conducted for the Florida bonneted bat within the limits of construction activities that are within the Florida bonneted bat Consultation Area. If any signs of the Florida bonneted bat are observed (e.g., tree cavities, new potential man-made roosting habitat), the Enterprise is committed to coordinating with USFWS regarding the most updated survey protocols for the Florida bonneted bat.
- 4) If the Monarch butterfly is listed by USFWS as Threatened or Endangered and the project may affect the species, the Enterprise commits to re-initiating consultation with USFWS to determine appropriate avoidance and minimization measures for protection of the newly listed species.
- 5) During the replacement of bridge culvert 160019 at Horse Creek, The Enterprise commits to the implementation of wildlife features such bridges with shelves, specially designed culverts, enlarged culverts or drainage culverts and exclusionary devices such as fencing, walls or other barriers, or some combination of these features at Horse Creek.



8.0 Agency Coordination

To facilitate intergovernmental interaction, the Enterprise utilizes an Environmental Technical Advisory Team (ETAT). ETAT members and the public have the opportunity to provide input to the FDOT regarding a project's potential effects on the natural, physical, cultural, and community resources throughout the Planning phase of project delivery. These comments help to determine the feasibility of a proposed project; focus the issues to be addressed during the PD&E phase; allow for early identification of potential avoidance, minimization, and mitigation opportunities; and create products that may be used in the PD&E phase to promote efficiency and consistency during project development. The ETAT evaluated the project's effects on various natural, physical, cultural, and social resources. ETAT comments can be reviewed on FDOT's Environmental Screening Tool at <https://etdmpub.flas-etat.org/est/> and searching for ETDM #14524.

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Appendix A: Project Alternative Roll Plots

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- Legend**
- Property Line (Property Appraiser 2023)
 - Davenport City Limits
 - County Boundary
 - Wellands (NM 2023)
 - Conservation Lands
 - Suitable Shrike Habitat
 - Recorded Bald Eagle Nest
 - Proposed Bridge
 - Proposed Right of Way
 - Proposed Shared Use Path
 - Proposed Sid
 - Neighborhood / Business / Church
 - Lake Park / Cemetery / School
 - Potential Historic Resource
 - Street Name
 - Traffic Signal
 - Potential Contamination Site
 - Proposed Right of Way
 - Existing Right of Way

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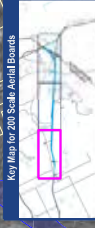
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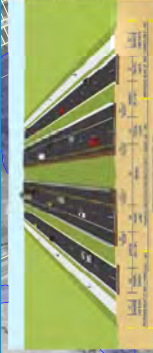
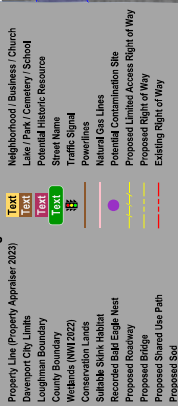
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Alternative 1 - Co-located with US 17/92



Aerial: January 2023

Legend



Aerial: January 2023

Study Area



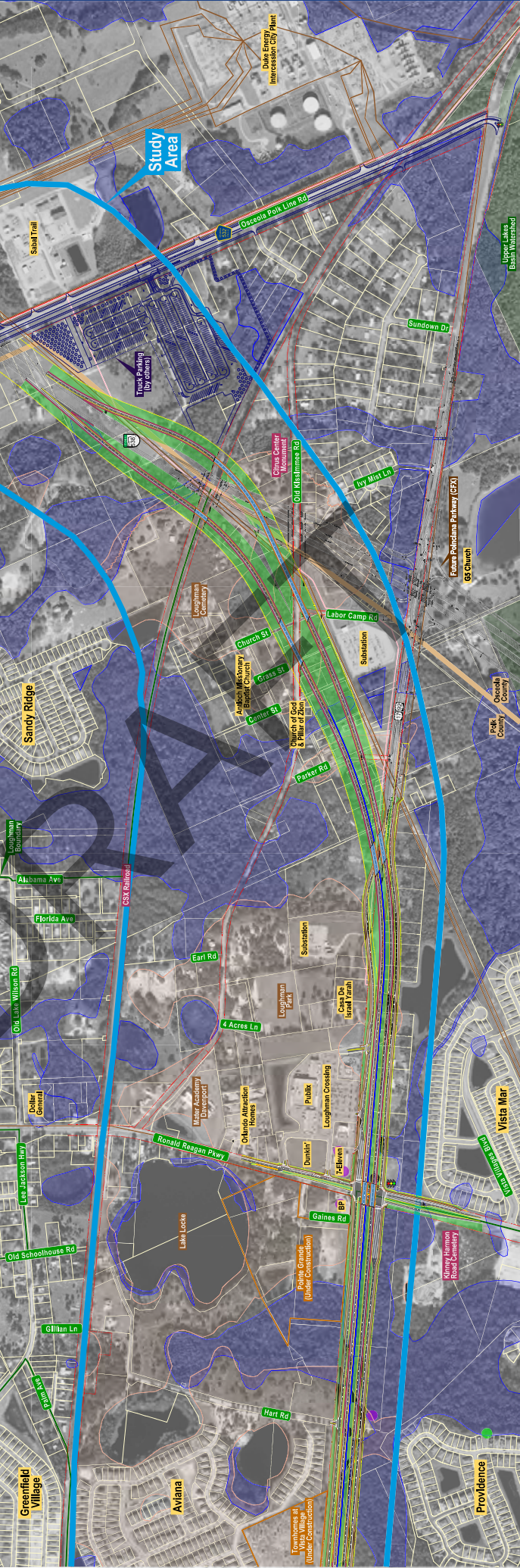


Alternative 1 - Co-located with US 1792

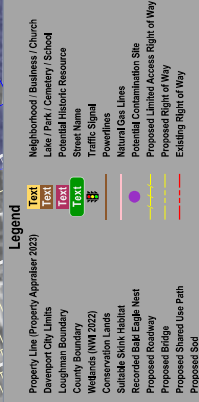


Legend	
	Neighborhood / Business / Church
	Lake / Park / Cemetery / School
	Potential Historic Resource
	Street Name
	Traffic Signal
	Potential Historic Resource
	Potential Limited Access Right of Way
	Proposed Limited Access Right of Way
	Proposed Right of Way
	Existing Right of Way

Aerial: January 2023



Scale Aerial Boards



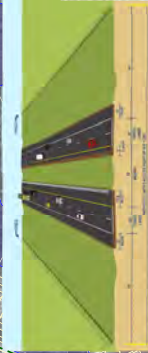
Aerial: January 2023





Central Polk Parkway East from US 1792 to Poinciana Connector (SR 538) Project Development & Environment (PD&E) Study

Alternative 2 - New Alignment



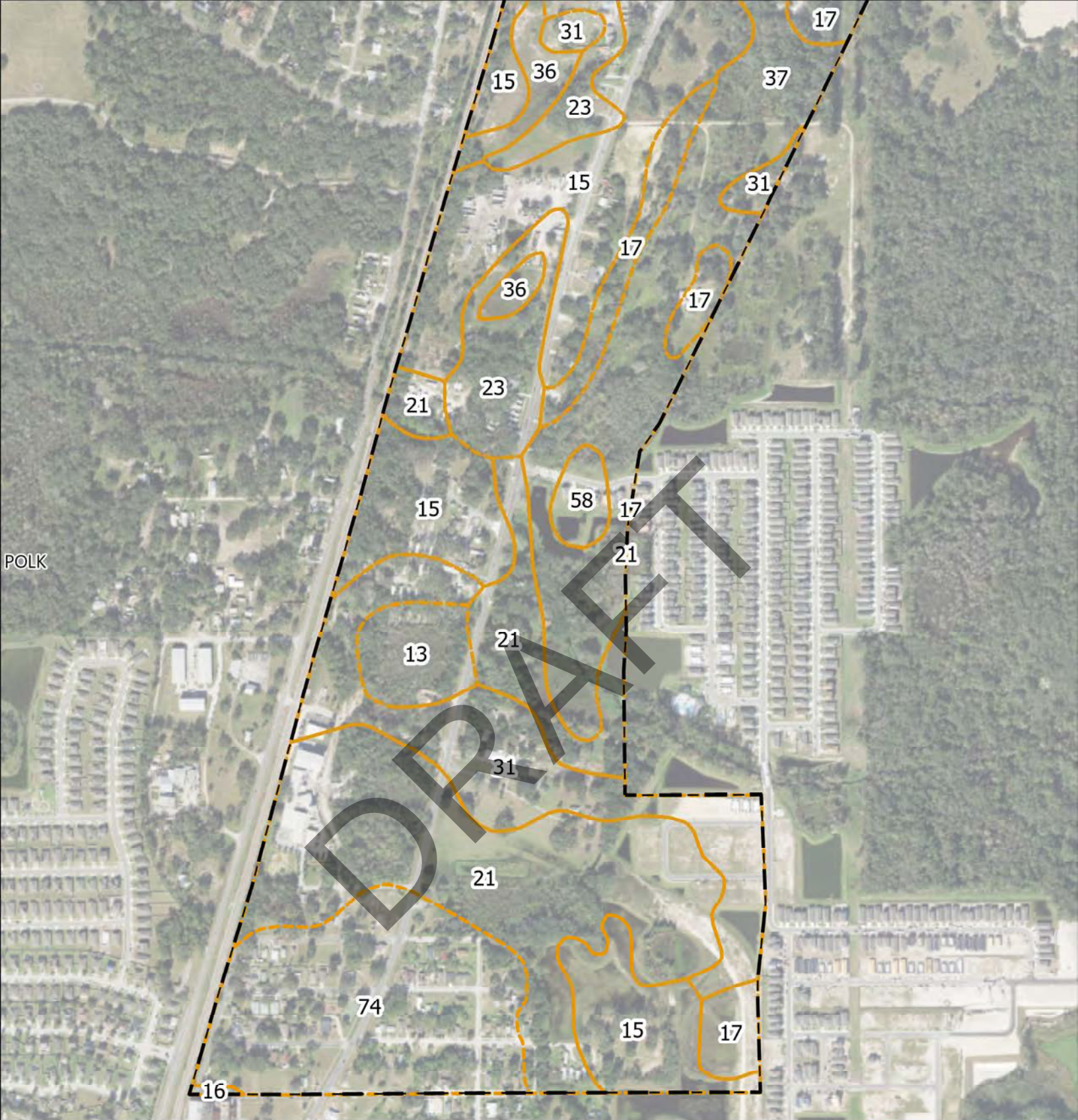
- Legend**
- Property Line (Property Appraiser 2023)
 - Dissected Old Line
 - County Boundary
 - Wellheads (NM 2022)
 - Conservation Lands
 - Suitable Shrub Habitat
 - Recorded Bald Eagle Nest
 - Proposed Roadway
 - Proposed Bridge
 - Proposed Shared Use Path
 - Neighborhood / Business / Church / Lake / Park / Cemetery / School
 - Potential Historic Resource
 - Street Name
 - Traffic Signal
 - Potential Gas Lines
 - Potential Contaminated Site
 - Proposed Limited Access Right of Way
 - Proposed Right of Way
 - Existing Right of Way

Aerial: January 2023



Appendix B: Soil Types

DRAFT



Legend

- County Boundaries
- Central Polk Parkway East Study Area
- NRCS Soils Central Polk Parkway Study Area (WSS)
- 13, SAMSULA MUCK, FREQUENTLY PONDED, 0 TO 1 PERCENT SLOPES
- 15, TAVARES FINE SAND, 0 TO 5 PERCENT SLOPES
- 16, URBAN LAND, 0 TO 2 PERCENT SLOPES
- 17, SMYRNA AND MYAKKA FINE SANDS

Sheet: 1 of 6 Source: Natural Resources Conservation Service.

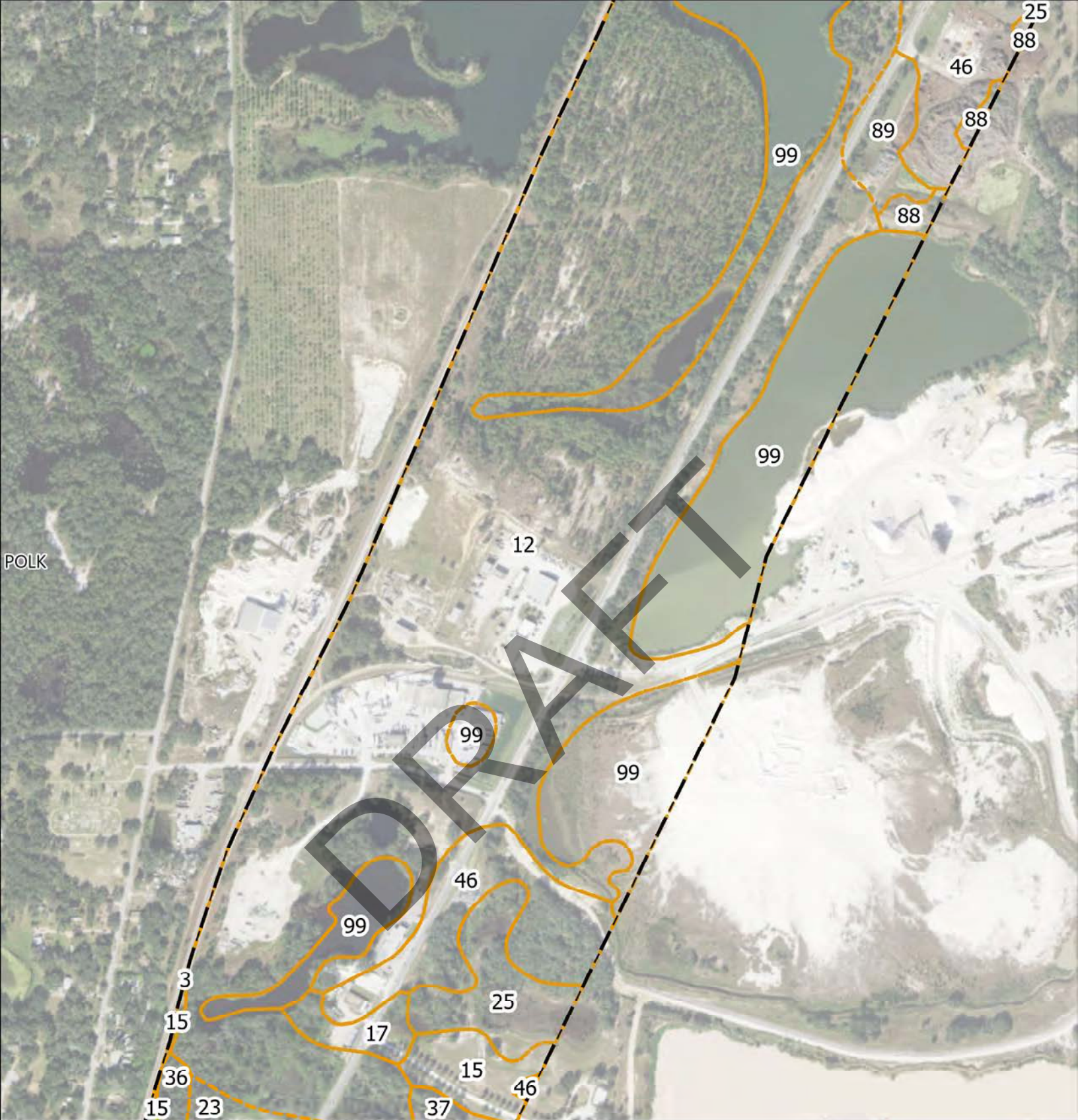
- 21, IMMOKALEE SAND
- 23, ONA-ONA, WET, FINE SAND, 0 TO 2 PERCENT SLOPES
- 31, ADAMSVILLE FINE SAND, 0 TO 2 PERCENT SLOPES
- 36, BASINGER MUCKY FINE SAND, FREQUENTLY PONDED, 0 TO 1 PERCENT SLOPES
- 37, PLACID FINE SAND, FREQUENTLY FLOODED
- 58, UDORTHENTS, EXCAVATED
- 74, NARCOOSSEE SAND



Central Polk Parkway East PD&E Study
FM Number: 451419-1

0 400 800 1,600
US Feet





Legend

- County Boundaries
- Central Polk Parkway East Study Area
- NRCS Soils Central Polk Parkway Study Area (WSS)
- 12, NEILHURST SAND, 1 TO 5 PERCENT SLOPES
- 15, TAVARES FINE SAND, 0 TO 5 PERCENT SLOPES
- 17, SMYRNA AND MYAKKA FINE SANDS
- 23, ONA-ONA, WET, FINE SAND, 0 TO 2 PERCENT SLOPES
- 25, PLACID AND MYAKKA FINE SANDS, DEPRESSIONAL

Sheet: 2 of 6 Source: Natural Resources Conservation Service.

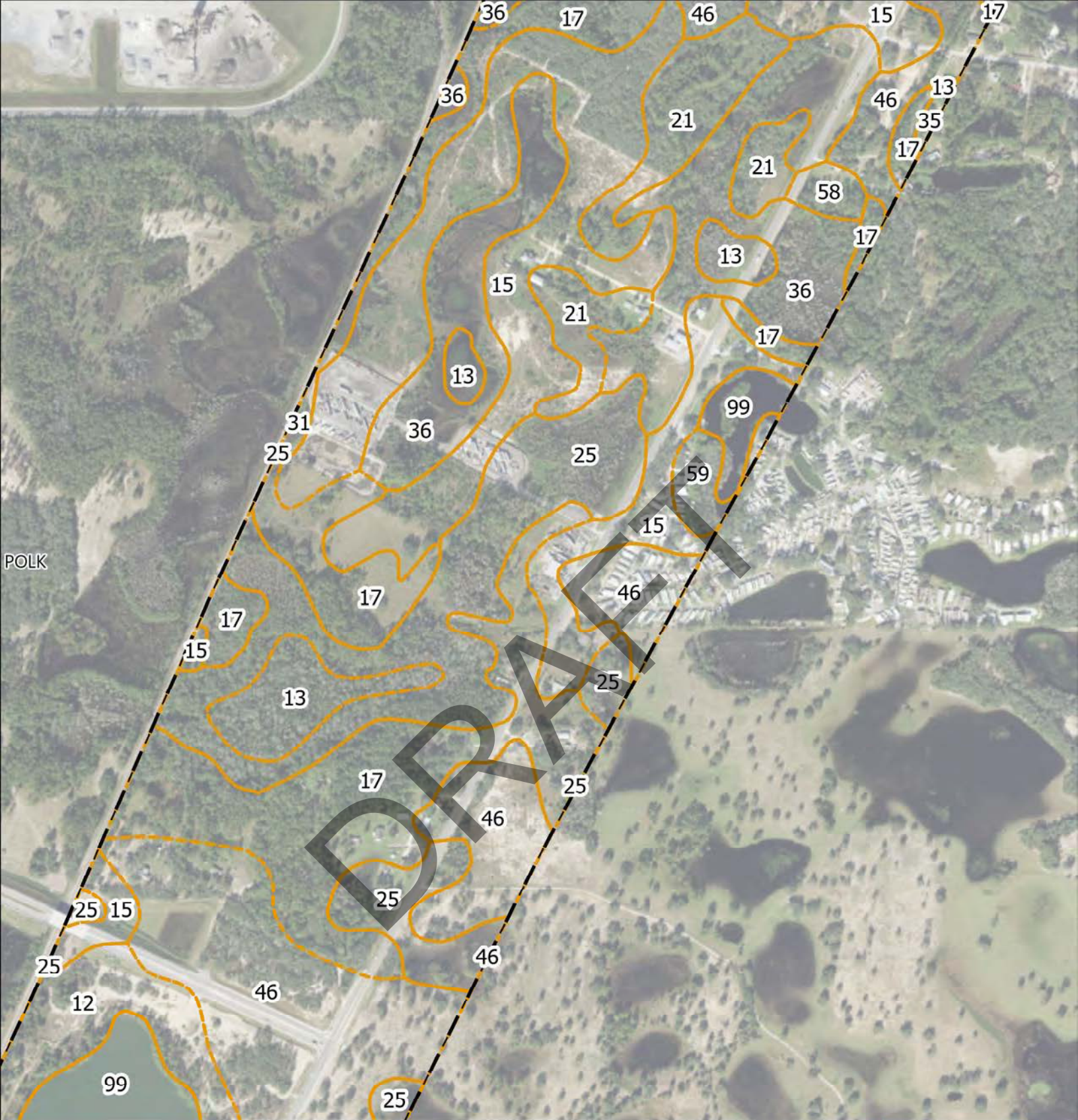
- 3, CANDLER SAND, 0 TO 5 PERCENT SLOPES
- 36, BASINGER MUCKY FINE SAND, FREQUENTLY PONDED, 0 TO 1 PERCENT SLOPES
- 37, PLACID FINE SAND, FREQUENTLY FLOODED
- 46, ASTATULA SAND, 0 TO 5 PERCENT SLOPES
- 88, ASTATULA SAND, 5 TO 12 PERCENT SLOPES
- 89, ASTATULA SAND, 12 TO 20 PERCENT SLOPES
- 99, WATER



Central Polk Parkway East PD&E Study
FM Number: 451419-1

0 400 800 1,600
US Feet





Legend

- County Boundaries
- Central Polk Parkway East Study Area
- NRCS Soils Central Polk Parkway Study Area (WSS)
- 12, NEILHURST SAND, 1 TO 5 PERCENT SLOPES
- 13, SAMSULA MUCK, FREQUENTLY PONDED, 0 TO 1 PERCENT SLOPES
- 15, TAVARES FINE SAND, 0 TO 5 PERCENT SLOPES
- 17, SMYRNA AND MYAKKA FINE SANDS
- 21, IMMOKALEE SAND

Sheet: 3 of 6

Source: Natural Resources Conservation Service.

- 25, PLACID AND MYAKKA FINE SANDS, DEPRESSIONAL
- 31, ADAMSVILLE FINE SAND, 0 TO 2 PERCENT SLOPES
- 35, HONTOON MUCK, FREQUENTLY PONDED, 0 TO 1 PERCENT SLOPES
- 36, BASINGER MUCKY FINE SAND, FREQUENTLY PONDED, 0 TO 1 PERCENT SLOPES
- 46, ASTATULA SAND, 0 TO 5 PERCENT SLOPES
- 58, UDORTHENTS, EXCAVATED
- 59, ARENTS-URBAN LAND COMPLEX, 0 TO 5 PERCENT SLOPES
- 99, WATER

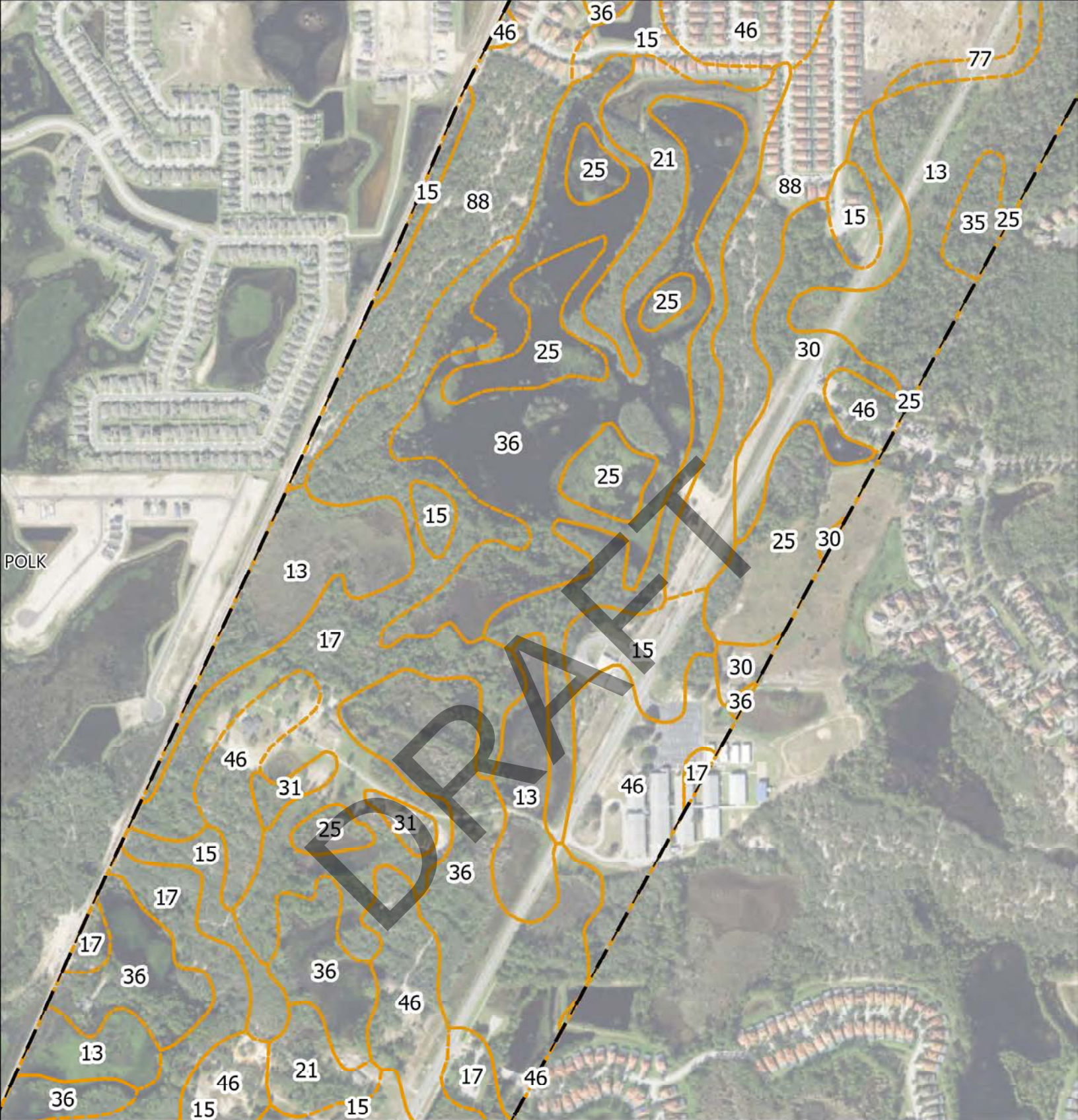


Central Polk Parkway East PD&E Study

FM Number: 451419-1

0 400 800 1,600
US Feet





Legend

- County Boundaries
- Central Polk Parkway East Study Area
- NRCS Soils Central Polk Parkway Study Area (WSS)
- 13, SAMSULA MUCK, FREQUENTLY PONDED, 0 TO 1 PERCENT SLOPES
- 15, TAVARES FINE SAND, 0 TO 5 PERCENT SLOPES
- 17, SMYRNA AND MYAKKA FINE SANDS
- 21, IMMOKALEE SAND
- 25, PLACID AND MYAKKA FINE SANDS, DEPRESSIONAL

Sheet: 4 of 6 Source: Natural Resources Conservation Service.

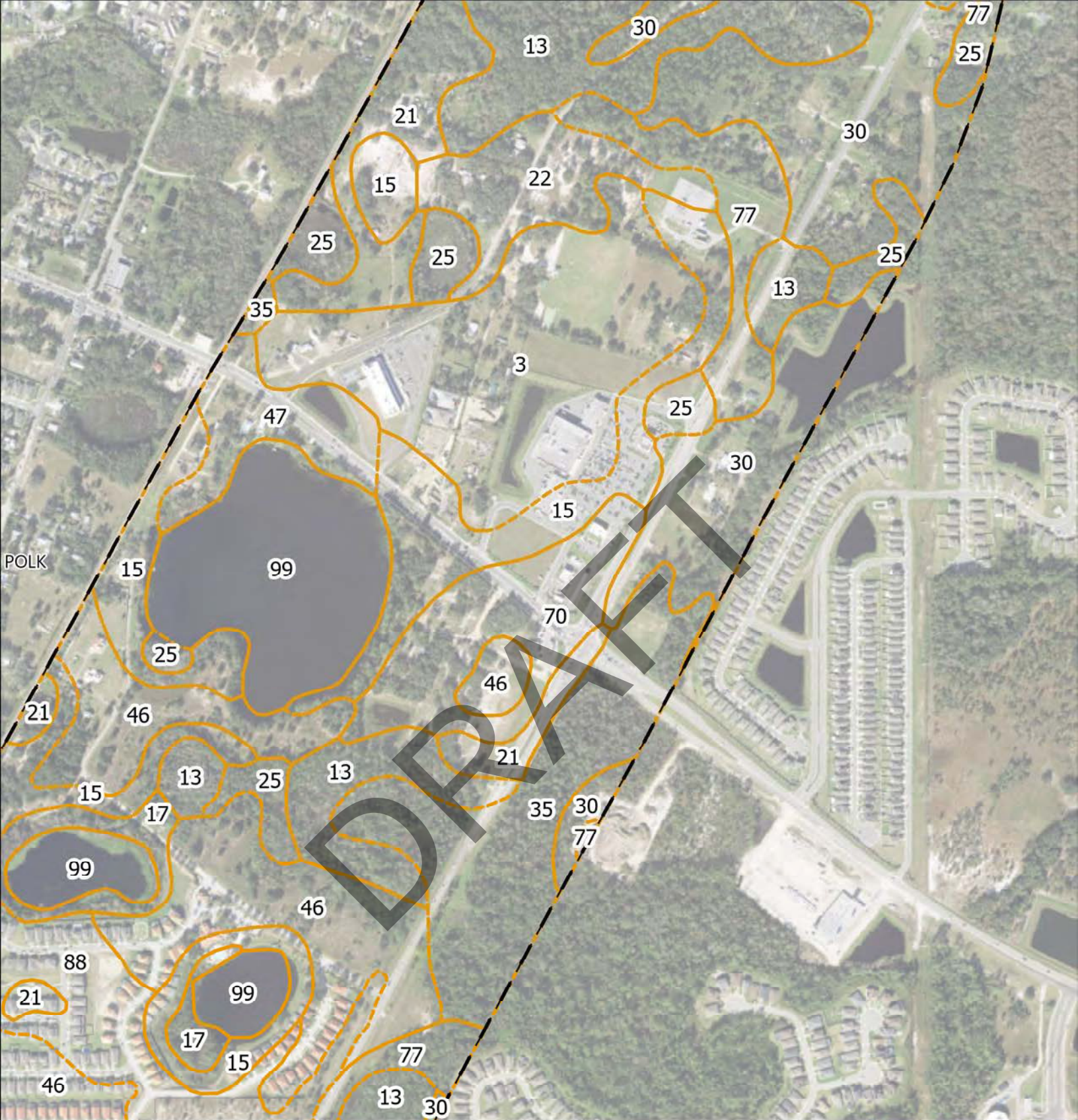
- 30, POMPAÑO FINE SAND
- 31, ADAMSVILLE FINE SAND, 0 TO 2 PERCENT SLOPES
- 35, HONTOON MUCK, FREQUENTLY PONDED, 0 TO 1 PERCENT SLOPES
- 36, BASINGER MUCKY FINE SAND, FREQUENTLY PONDED, 0 TO 1 PERCENT SLOPES
- 46, ASTATULA SAND, 0 TO 5 PERCENT SLOPES
- 77, SATELLITE SAND, 0 TO 2 PERCENT SLOPES
- 88, ASTATULA SAND, 5 TO 12 PERCENT SLOPES



Central Polk Parkway East PD&E Study
FM Number: 451419-1

0 400 800 1,600
US Feet





Legend

- County Boundaries
- Central Polk Parkway East Study Area
- NRCS Soils Central Polk Parkway Study Area (WSS)
- 13, SAMSULA MUCK, FREQUENTLY PONDED, 0 TO 1 PERCENT SLOPES
- 15, TAVARES FINE SAND, 0 TO 5 PERCENT SLOPES
- 17, SMYRNA AND MYAKKA FINE SANDS
- 21, IMMOKALEE SAND
- 22, POMELLO FINE SAND
- 25, PLACID AND MYAKKA FINE SANDS, DEPRESSIONAL

Sheet: 5 of 6 Source: Natural Resources Conservation Service.

- 3, CANDLER SAND, 0 TO 5 PERCENT SLOPES
- 30, POMPANO FINE SAND
- 35, HONTOON MUCK, FREQUENTLY PONDED, 0 TO 1 PERCENT SLOPES
- 46, ASTATULA SAND, 0 TO 5 PERCENT SLOPES
- 47, ZOLFO FINE SAND, 0 TO 2 PERCENT SLOPES
- 70, DUETTE FINE SAND
- 77, SATELLITE SAND, 0 TO 2 PERCENT SLOPES
- 88, ASTATULA SAND, 5 TO 12 PERCENT SLOPES
- 99, WATER

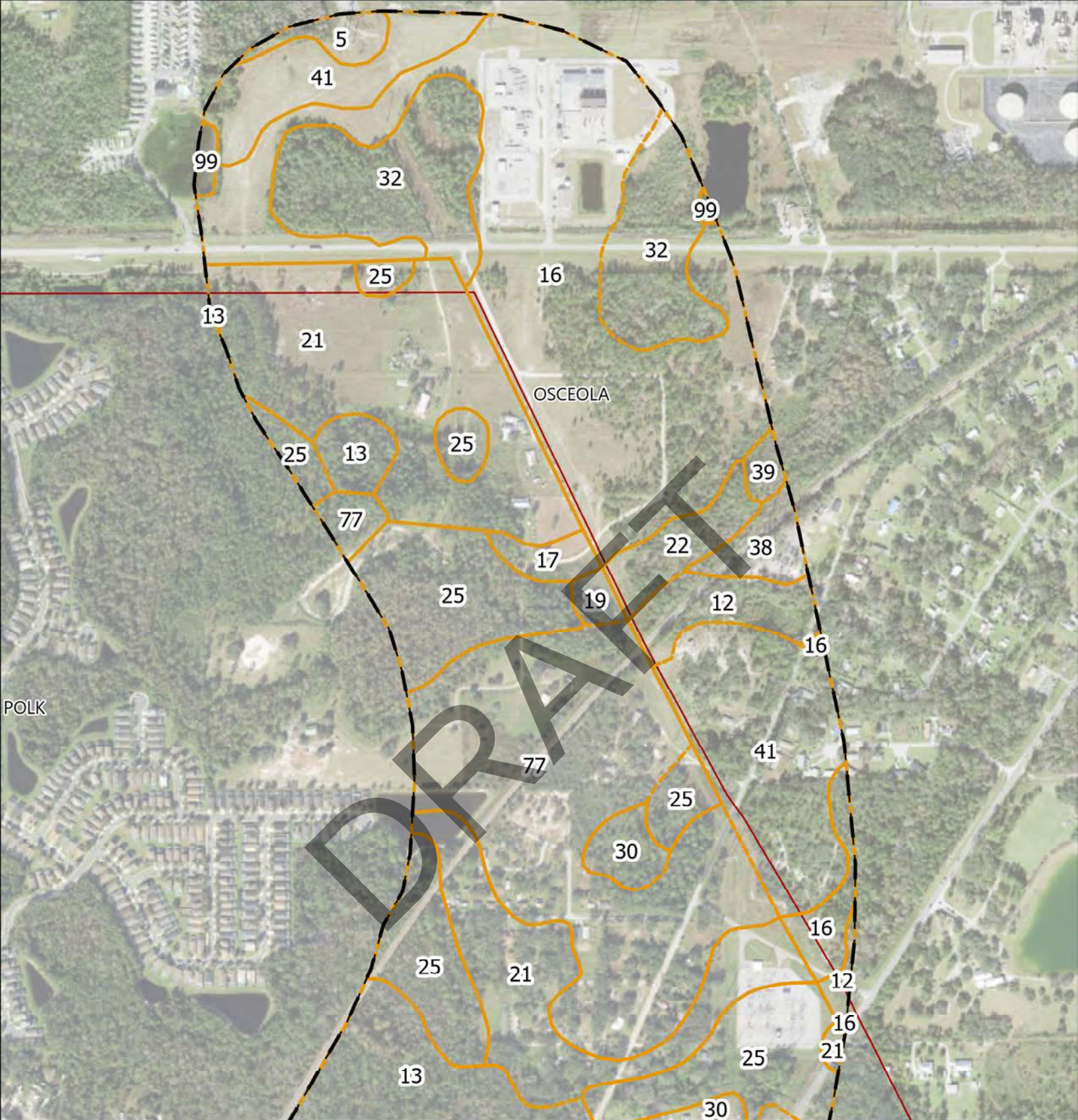


Central Polk Parkway East PD&E Study

FM Number: 451419-1

0 400 800 1,600 US Feet





Legend

- County Boundaries
- Central Polk Parkway East Study Area
- NRCS Soils Central Polk Parkway Study Area (WSS)
- 12, FLORIDANA FINE SAND, FREQUENTLY PONDED, 0 TO 1 PERCENT SLOPES
- 13, SAMSULA MUCK, FREQUENTLY PONDED, 0 TO 1 PERCENT SLOPES
- 16, IMMOKALEE FINE SAND, 0 TO 2 PERCENT SLOPES
- 17, SMYRNA AND MYAKKA FINE SANDS

Sheet: 6 of 6 Source: Natural Resources Conservation Service.

- 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
- 30, POMPANO FINE SAND
- 32, PLACID 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



Central Polk Parkway East PD&E Study

FM Number: 451419-1

0 400 800 1,600 US Feet





Appendix C: Land Use

DRAFT



Legend Sheet: 1 of 6

- County Boundaries
- Central Polk Parkway East Study Area
- SWFWMD Land Cover 2023

- 1100: RESIDENTIAL LOW DENSITY LESS THAN 2 DWELLING UNITS PER ACRE
- 1200: RESIDENTIAL MED-DENSITY 2 TO 5 DWELLING UNITS PER ACRE
- 1300: RESIDENTIAL HIGH DENSITY
- 1400: COMMERCIAL AND SERVICES
- 1900: OPEN LAND
- 2100: CROPLAND AND PASTURELAND
- 4200: UPLAND HARDWOOD FORESTS - PART 1
- 4300: UPLAND HARDWOOD FORESTS - PART 2

- 4340: UPLAND HARDWOOD - CONIFEROUS MIX
- 5100: STREAMS AND WATERWAYS
- 5200: LAKES
- 5300: RESERVOIRS
- 6100: WETLAND HARDWOOD FORESTS
- 6300: WETLAND FORESTED MIXED
- 6400: VEGETATED NON-FORESTED WETLANDS
- 6410: FRESHWATER MARSHES
- 6430: WET PRAIRIES
- 6440: EMERGENT AQUATIC VEGETATION
- 8100: TRANSPORTATION



Central Polk Parkway East PD&E Study

FM Number: 451419-1

0 400 800 1,600 US Feet





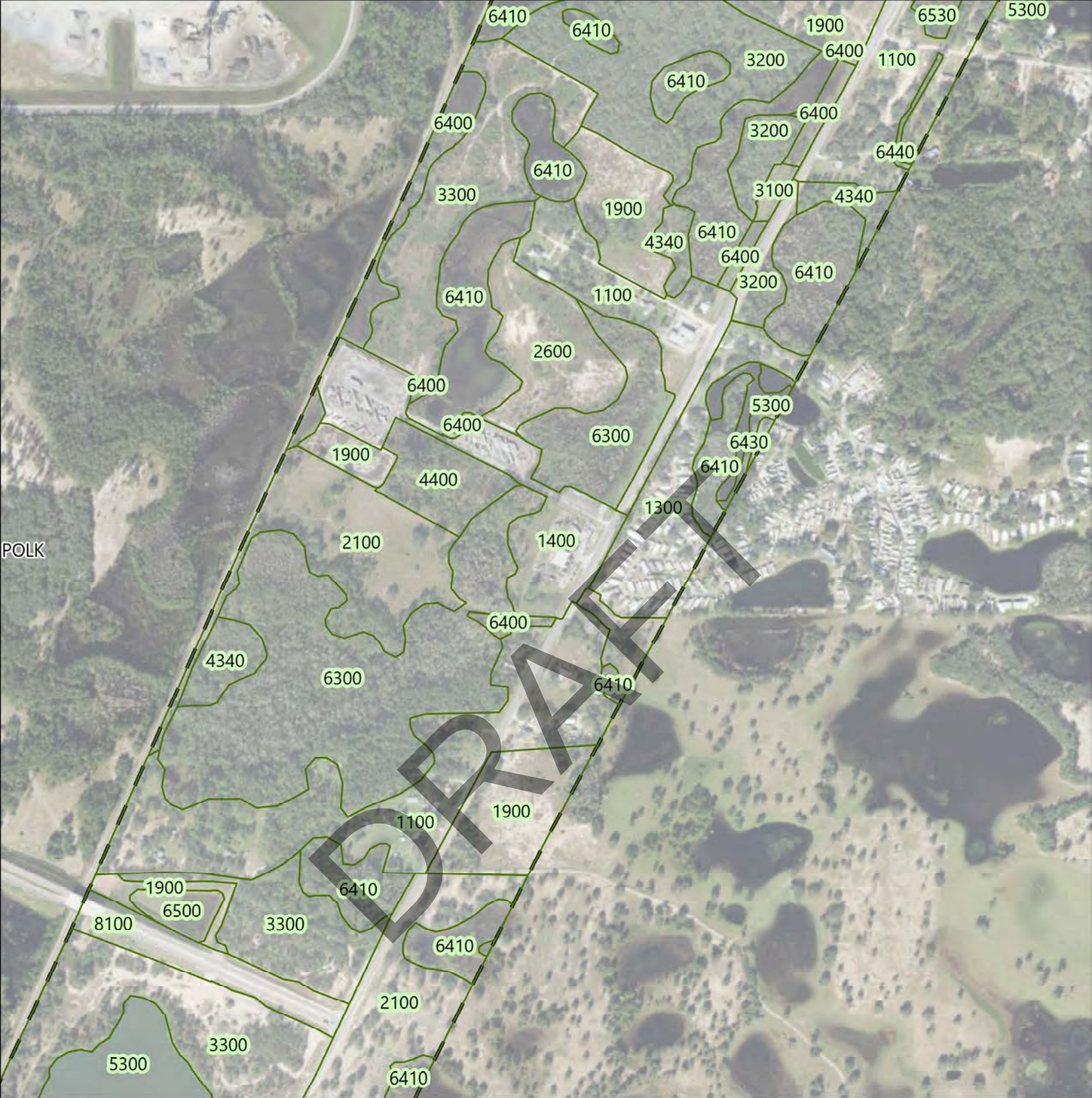
Legend

Sheet: 2 of 6

- County Boundaries
- Central Polk Parkway East Study Area
- SWFWMD Land Cover 2023
- 1200: RESIDENTIAL MED DENSITY 2 TO 5 DWELLING UNITS PER ACRE
- 1400: COMMERCIAL AND SERVICES
- 1500: INDUSTRIAL
- 1600: EXTRACTIVE
- 1900: OPEN LAND

- 2100: CROPLAND AND PASTURELAND
- 2600: OTHER OPEN LANDS
- 3300: MIXED RANGELAND
- 5300: RESERVOIRS
- 6300: WETLAND FORESTED MIXED
- 6400: VEGETATED NON-FORESTED WETLANDS
- 6410: FRESHWATER MARSHES





Legend Sheet: 3 of 6

- County Boundaries
- Central Polk Parkway East Study Area
- SWFWMD Land Cover 2023
- 1100: RESIDENTIAL LOW DENSITY LESS THAN 2 DWELLING UNITS PER ACRE
- 1300: RESIDENTIAL HIGH DENSITY
- 1400: COMMERCIAL AND SERVICES
- 1900: OPEN LAND
- 2100: CROPLAND AND PASTURELAND
- 2600: OTHER OPEN LANDS
- 3100: HERBACEOUS
- 3200: SHRUB AND BRUSHLAND
- 3300: MIXED RANGELAND
- 4340: UPLAND HARDWOOD - CONIFEROUS MIX
- 4400: TREE PLANTATION
- 5300: RESERVOIRS
- 6300: WETLAND FORESTED MIXED
- 6400: VEGETATED NON-FORESTED WETLANDS
- 6410: FRESHWATER MARSHES
- 6430: WET PRAIRIES
- 6440: EMERGENT AQUATIC VEGETATION
- 6500: NON-VEGETATED
- 6530: INTERMITTENT PONDS
- 8100: TRANSPORTATION

- 4340: UPLAND HARDWOOD - CONIFEROUS MIX
- 4400: TREE PLANTATION
- 5300: RESERVOIRS
- 6300: WETLAND FORESTED MIXED
- 6400: VEGETATED NON-FORESTED WETLANDS
- 6410: FRESHWATER MARSHES
- 6430: WET PRAIRIES
- 6440: EMERGENT AQUATIC VEGETATION
- 6500: NON-VEGETATED
- 6530: INTERMITTENT PONDS
- 8100: TRANSPORTATION



Central Polk Parkway East PD&E Study

FM Number: 451419-1

0 400 800 1,600 US Feet





Legend Sheet: 4 of 6

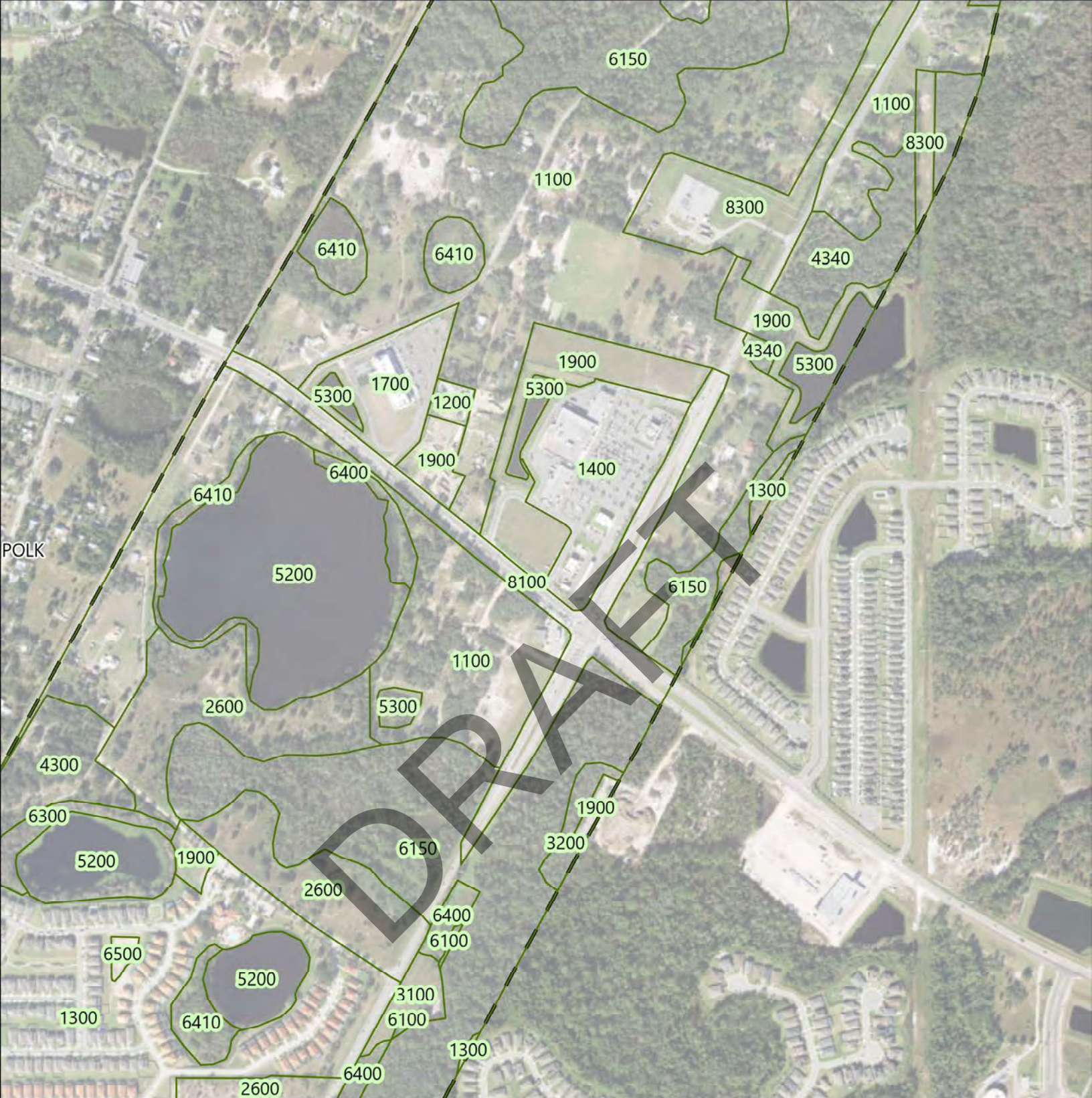
- County Boundaries
- Central Polk Parkway East Study Area
- SWFWMD Land Cover 2023
- 1100: RESIDENTIAL LOW DENSITY LESS THAN 2 DWELLING UNITS PER ACRE
- 1300: RESIDENTIAL HIGH DENSITY
- 1700: INSTITUTIONAL
- 1900: OPEN LAND
- 2600: OTHER OPEN LANDS
- 3100: HERBACEOUS
- 3200: SHRUB AND BRUSHLAND
- 4100: UPLAND CONIFEROUS FOREST
- 4110: PINE FLATWOODS
- 5200: LAKES
- 5300: RESERVOIRS
- 6100: WETLAND HARDWOOD FORESTS
- 6150: STREAM AND LAKE SWAMPS (BOTTOMLAND)
- 6210: CYPRESS
- 6300: WETLAND FORESTED MIXED
- 6400: VEGETATED NON-FORESTED WETLANDS
- 6410: FRESHWATER MARSHES
- 6430: WET PRAIRIES
- 6530: INTERMITTENT PONDS
- 8100: TRANSPORTATION

Central Polk Parkway East PD&E Study

FM Number: 451419-1

0 400 800 1,600 US Feet





Legend Sheet: 5 of 6

- County Boundaries
- Central Polk Parkway East Study Area
- SWFWMD Land Cover 2023
- 1100: RESIDENTIAL LOW DENSITY LESS THAN 2 DWELLING UNITS PER ACRE
- 1200: RESIDENTIAL MED DENSITY 2 TO 5 DWELLING UNITS PER ACRE
- 1300: RESIDENTIAL HIGH DENSITY
- 1400: COMMERCIAL AND SERVICES
- 1700: INSTITUTIONAL
- 1900: OPEN LAND
- 2600: OTHER OPEN LANDS
- 3100: HERBACEOUS
- 3200: SHRUB AND BRUSHLAND
- 4300: UPLAND HARDWOOD FORESTS - PART 2
- 4340: UPLAND HARDWOOD - CONIFEROUS MIX
- 5200: LAKES
- 5300: RESERVOIRS
- 6100: WETLAND HARDWOOD FORESTS
- 6150: STREAM AND LAKE SWAMPS (BOTTOMLAND)
- 6300: WETLAND FORESTED MIXED
- 6400: VEGETATED NON-FORESTED WETLANDS
- 6410: FRESHWATER MARSHES
- 6500: NON-VEGETATED
- 8100: TRANSPORTATION
- 8300: UTILITIES

Central Polk Parkway East PD&E Study

FM Number: 451419-1

0 400 800 1,600 US Feet





Legend Sheet: 6 of 6

- County Boundaries
- Central Polk Parkway East Study Area
- SWFWMD Land Cover 2023
- 1100: RESIDENTIAL LOW DENSITY LESS THAN 2 DWELLING UNITS PER ACRE
- 1200: RESIDENTIAL MED DENSITY 2 TO 5 DWELLING UNITS PER ACRE
- 1300: RESIDENTIAL HIGH DENSITY
- 1900: OPEN LAND
- 2100: CROPLAND AND PASTURELAND
- 3200: SHRUB AND BRUSHLAND
- 4100: UPLAND CONIFEROUS FOREST

- 4110: PINE FLATWOODS
- 5300: RESERVOIRS
- 6100: WETLAND HARDWOOD FORESTS
- 6150: STREAM AND LAKE SWAMPS (BOTTOMLAND)
- 6300: WETLAND FORESTED MIXED
- 6400: VEGETATED NON-FORESTED WETLANDS
- 6410: FRESHWATER MARSHES
- 6440: EMERGENT AQUATIC VEGETATION
- 8300: UTILITIES



Central Polk Parkway East PD&E Study
FM Number: 451419-1

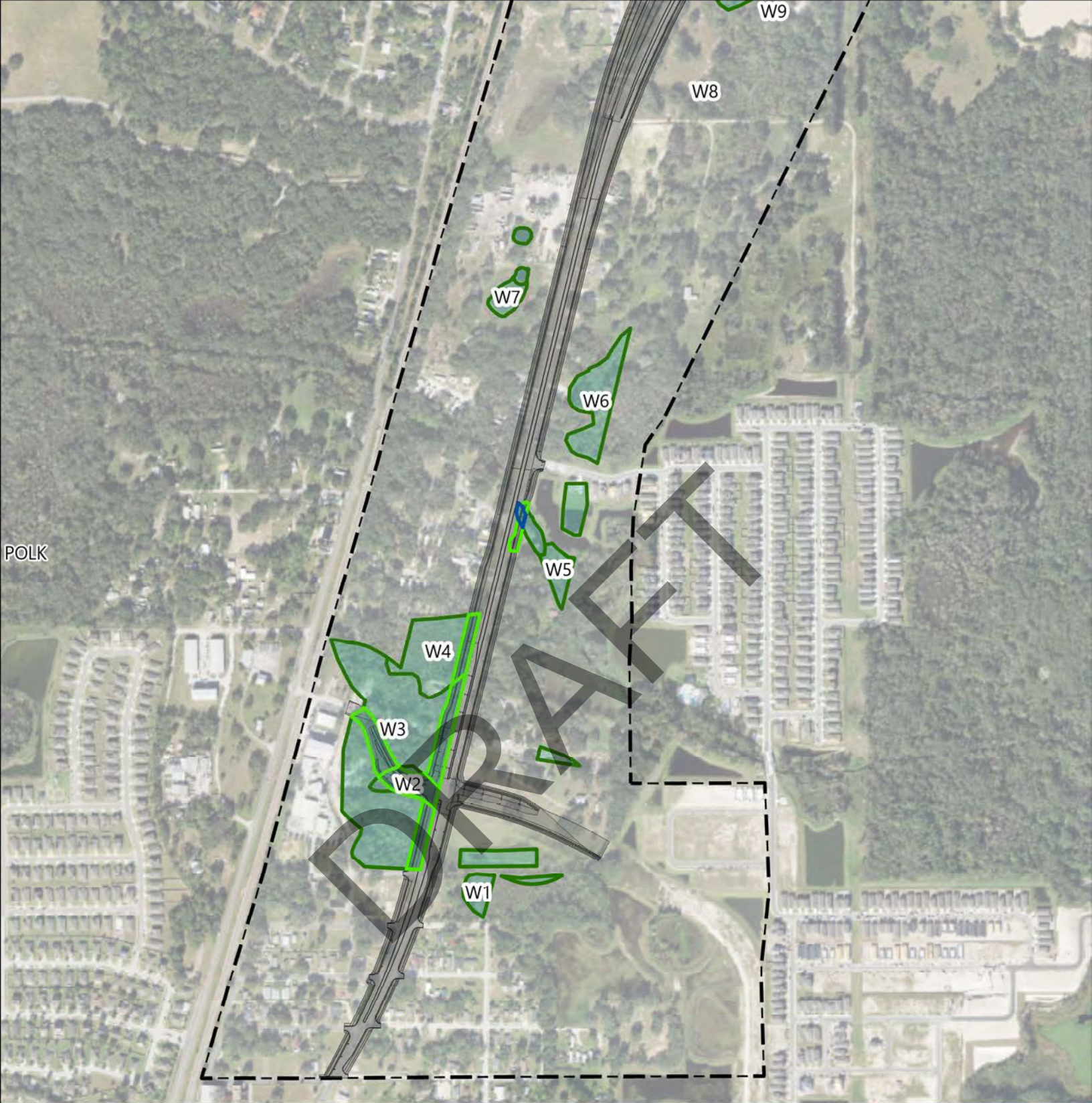
0 400 800 1,600 US Feet





Appendix D: Wetlands and Surface Waters (Alternative 2)

DRAFT



Legend

Sheet: 1 of 6

- Surface Waters Preferred Alternative Impacts
- Wetlands Preferred Alternatives Impacts
- Wetlands and Surface Waters within 300' of Alternatives
- 610, WETLAND HARDWOOD FORESTS
- 615, STREAM AND LAKE SWAMPS (BOTTOMLAND)
- 621, CYPRESS
- 630, WETLAND FORESTED MIXED
- 640, VEGETATED NON-FORESTED WETLANDS

0 400 800 1,600 US Feet

- 641, FRESHWATER MARSHES
- 643, WET PRAIRIES
- 644, EMERGENT AQUATIC VEGETATION
- 650, NON-VEGETATED
- 653, INTERMITTENT PONDS

- Preferred Alternative Footprint
- Central Polk Parkway East Study Area
- County Boundaries





Legend

Sheet: 2 of 6

- Surface Waters Preferred Alternative Impacts
- Wetlands Preferred Alternatives Impacts
- Wetlands and Surface Waters within 300' of Alternatives
- 610, WETLAND HARDWOOD FORESTS
- 615, STREAM AND LAKE SWAMPS (BOTTOMLAND)
- 621, CYPRESS
- 630, WETLAND FORESTED MIXED
- 640, VEGETATED NON-FORESTED WETLANDS

0 400 800 1,600 US Feet

- 641, FRESHWATER MARSHES
- 643, WET PRAIRIES
- 644, EMERGENT AQUATIC VEGETATION
- 650, NON-VEGETATED
- 653, INTERMITTENT PONDS

- Preferred Alternative Footprint
- Central Polk Parkway East Study Area
- County Boundaries

OSCEOLA

POLK

Davenport





Legend

Sheet: 3 of 6

- Surface Waters Preferred Alternative Impacts
- Wetlands Preferred Alternatives Impacts
- Wetlands and Surface Waters within 300' of Alternatives
- 610, WETLAND HARDWOOD FORESTS
- 615, STREAM AND LAKE SWAMPS (BOTTOMLAND)
- 621, CYPRESS
- 630, WETLAND FORESTED MIXED
- 640, VEGETATED NON-FORESTED WETLANDS

0 400 800 1,600 US Feet

- 641, FRESHWATER MARSHES
- 643, WET PRAIRIES
- 644, EMERGENT AQUATIC VEGETATION
- 650, NON-VEGETATED
- 653, INTERMITTENT PONDS
- Preferred Alternative Footprint
- Central Polk Parkway East Study Area
- County Boundaries

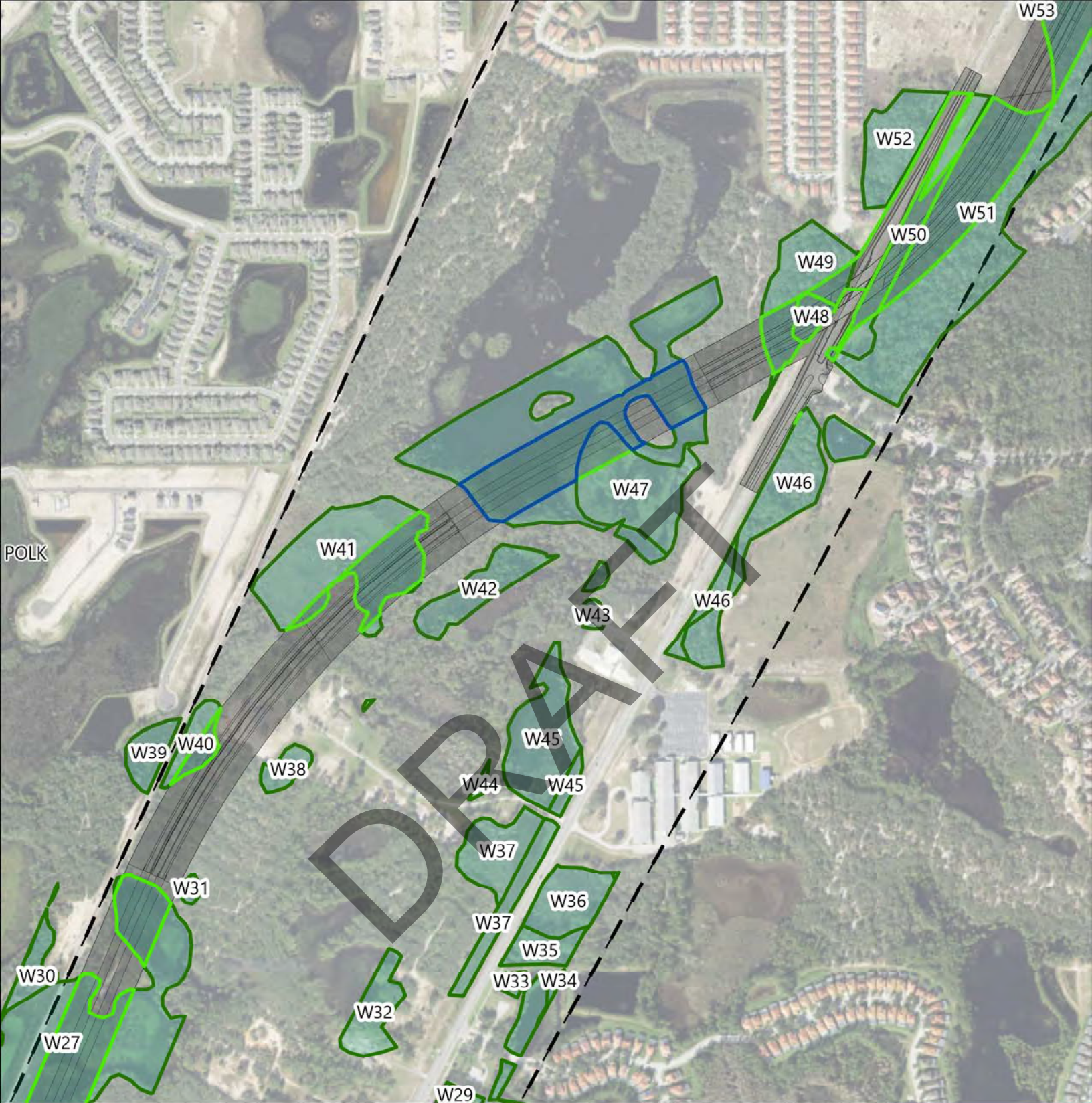
OSCEOLA

POLK

Davenport

N





Legend

Sheet: 4 of 6

- Surface Waters Preferred Alternative Impacts
- Wetlands Preferred Alternatives Impacts
- Wetlands and Surface Waters within 300' of Alternatives
- 610, WETLAND HARDWOOD FORESTS
- 615, STREAM AND LAKE SWAMPS (BOTTOMLAND)
- 621, CYPRESS
- 630, WETLAND FORESTED MIXED
- 640, VEGETATED NON-FORESTED WETLANDS

0 400 800 1,600 US Feet

- 641, FRESHWATER MARSHES
- 643, WET PRAIRIES
- 644, EMERGENT AQUATIC VEGETATION
- 650, NON-VEGETATED
- 653, INTERMITTENT PONDS
- Preferred Alternative Footprint
- Central Polk Parkway East Study Area
- County Boundaries

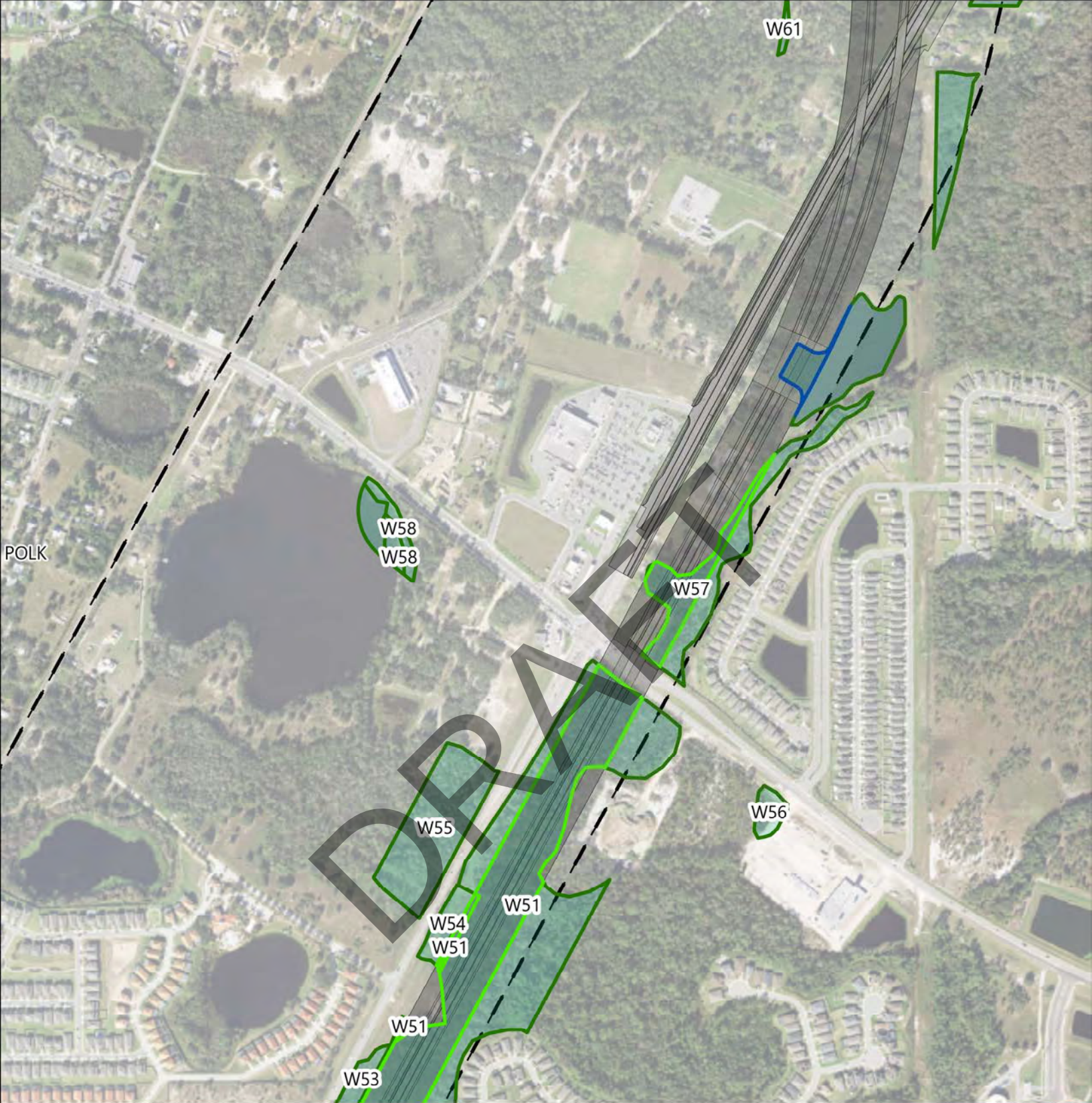
OSCEOLA

POLK

Davenport

N





Legend

Sheet: 5 of 6

- ▬ Surface Waters Preferred Alternative Impacts
- ▬ Wetlands Preferred Alternatives Impacts
- ▬ Wetlands and Surface Waters within 300' of Alternatives
- 610, WETLAND HARDWOOD FORESTS
- 615, STREAM AND LAKE SWAMPS (BOTTOMLAND)
- 621, CYPRESS
- 630, WETLAND FORESTED MIXED
- 640, VEGETATED NON-FORESTED WETLANDS

0 400 800 1,600 US Feet

- 641, FRESHWATER MARSHES
- 643, WET PRAIRIES
- 644, EMERGENT AQUATIC VEGETATION
- 650, NON-VEGETATED
- 653, INTERMITTENT PONDS
- Preferred Alternative Footprint
- Central Polk Parkway East Study Area
- County Boundaries

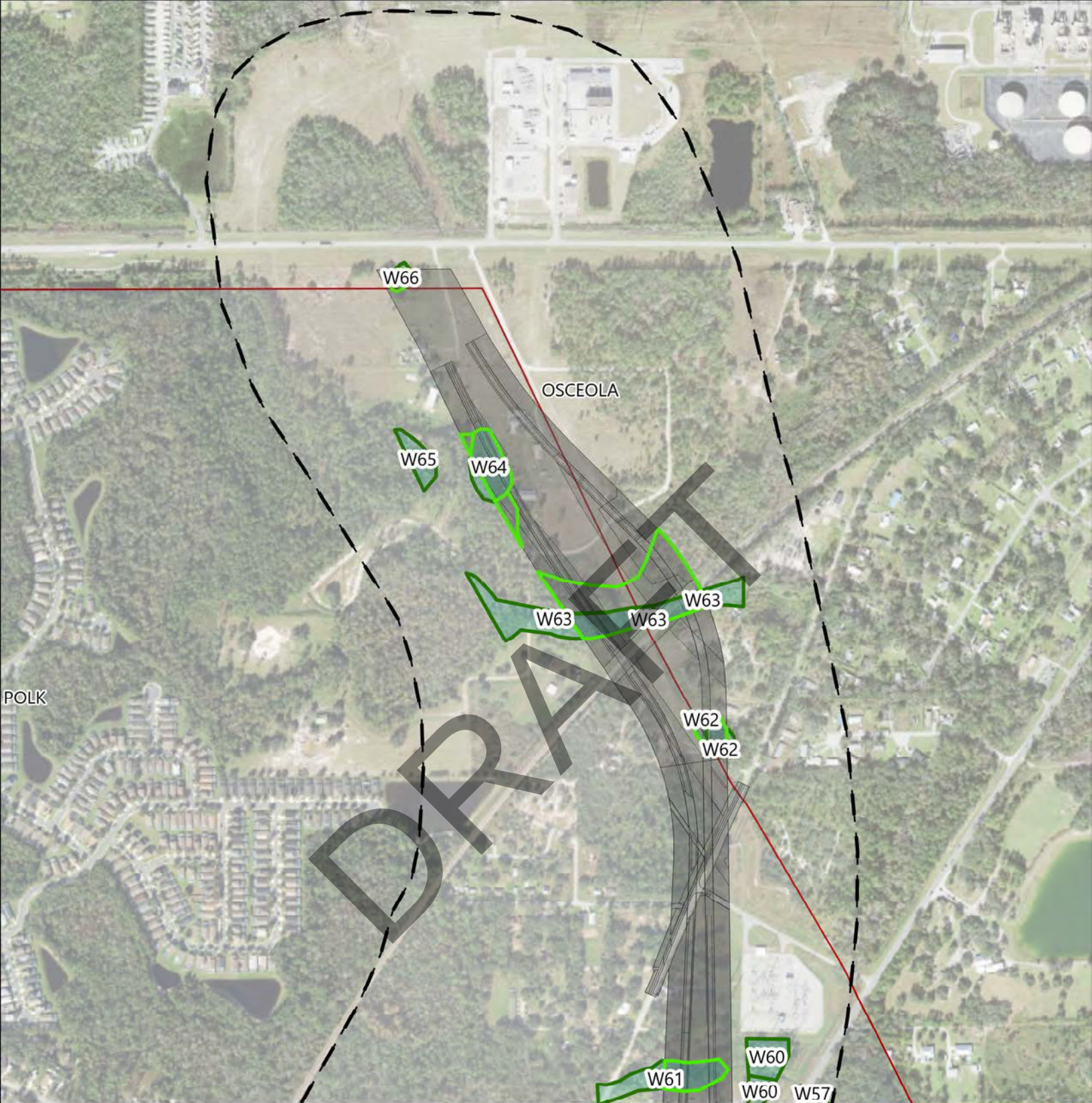
OSCEOLA

POLK

Davenport

N





Legend

Sheet: 6 of 6

- Surface Waters Preferred Alternative Impacts
- Wetlands Preferred Alternatives Impacts
- Wetlands and Surface Waters within 300' of Alternatives
- 610, WETLAND HARDWOOD FORESTS
- 615, STREAM AND LAKE SWAMPS (BOTTOMLAND)
- 621, CYPRESS
- 630, WETLAND FORESTED MIXED
- 640, VEGETATED NON-FORESTED WETLANDS

0 400 800 1,600 US Feet

- 641, FRESHWATER MARSHES
- 643, WET PRAIRIES
- 644, EMERGENT AQUATIC VEGETATION
- 650, NON-VEGETATED
- 653, INTERMITTENT PONDS
- Preferred Alternative Footprint
- Central Polk Parkway East Study Area
- County Boundaries





Appendix E: Field Observations and Historic Species Occurrences

DRAFT



Legend



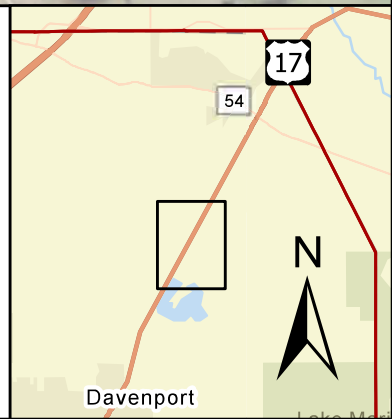
Active Gopher Tortoise Burrows



Central Polk Parkway East Study Area



County Boundaries





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

FLORIDA
Natural Areas
INVENTORY

Florida Natural Areas Inventory

Biodiversity Matrix Query Results

UNOFFICIAL REPORT

Created 2/26/2025

(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 10 Matrix Units: 42533 , 42905 , 42906 , 42907 , 42908 , 42909 , 43279 , 43280 , 43281 , 43282

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: 42533

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

6 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
<i>Aphelocoma coerulescens</i> Florida Scrub-Jay	G2?	S1S2	T	FT
<i>Clitoria fragrans</i> scrub pigeon-wing	G2G3	S2	T	E
<i>Eriogonum longifolium</i> var. <i>gnaphalifolium</i> scrub buckwheat	G4T3	S3	T	E
<i>Mycteria americana</i> Wood Stork	G4	S2	T	FT
<i>Polygala lewtonii</i> Lewton's polygala	G2	S2	E	E

Scrub	G2	S2	N	N
-------	----	----	---	---

Matrix Unit ID: 42905

0 Documented Elements Found

0 Documented-Historic Elements Found

6 Likely Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Aphelocoma coerulescens Florida Scrub-Jay	G2?	S1S2	T	FT
Clitoria fragrans scrub pigeon-wing	G2G3	S2	T	E
Eriogonum longifolium var. gnaphalifolium scrub buckwheat	G4T3	S3	T	E
Mycteria americana Wood Stork	G4	S2	T	FT
Sandhill upland lake	G3	S2	N	N
Scrub	G2	S2	N	N

Matrix Unit ID: 42906

2 Documented Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
<i>Floridobolus penneri</i> Florida Scrub Millipede	G1G2	S1S2	N	N
Plestiodon reynoldsi Sand Skink	G3	S3	T	FT

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?	S1S2	T	FT
Eriogonum longifolium var. gnaphalifolium scrub buckwheat	G4T3	S3	T	E
Gopherus polyphemus Gopher Tortoise	G3	S3	C	ST
Mesic flatwoods	G4	S4	N	N
Mycteria americana Wood Stork	G4	S2	T	FT
Polygala lewtonii Lewton's polygala	G2	S2	E	E
Sandhill	G3	S2	N	N
Scrub	G2	S2	N	N

Matrix Unit ID: 42907

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
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Aphelocoma coerulescens Florida Scrub-Jay	G2?	S1S2	T	FT
Eriogonum longifolium var. gnaphalifolium scrub buckwheat	G4T3	S3	T	E
Gopherus polyphemus Gopher Tortoise	G3	S3	C	ST
<i>Mesic flatwoods</i>	G4	S4	N	N
Mycteria americana Wood Stork	G4	S2	T	FT
Polygala lewtonii Lewton's polygala	G2	S2	E	E
<i>Sandhill</i>	G3	S2	N	N
<i>Sandhill upland lake</i>	G3	S2	N	N

Matrix Unit ID: 42908

0 Documented Elements Found

0 Documented-Historic Elements Found

10 Likely Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Aphelocoma coerulescens Florida Scrub-Jay	G2?	S1S2	T	FT
Gopherus polyphemus Gopher Tortoise	G3	S3	C	ST
<i>Mesic flatwoods</i>	G4	S4	N	N
Mycteria americana Wood Stork	G4	S2	T	FT
Plestiodon egregius lividus Blue-tailed Mole Skink	G5T2	S2	T	FT
Plestiodon reynoldsi Sand Skink	G3	S3	T	FT
Polygala lewtonii Lewton's polygala	G2	S2	E	E
Polygonella myriophylla Small's jointweed	G3	S3	E	E
<i>Scrub</i>	G2	S2	N	N
<i>Upland hardwood forest</i>	G5	S3	N	N

Matrix Unit ID: 42909

1 Documented Element Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
<i>Scrub</i>	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?	S1S2	T	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	T	FT
Plestiodon reynoldsi Sand Skink	G3	S3	T	FT

Polygonella myriophylla Small's jointweed	G3	S3	E	E
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4 Likely Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Chionanthus pygmaeus pygmy fringe tree	G2G3	S2S3	E	E
<i>Mesic flatwoods</i>	G4	S4	N	N
Mycteria americana Wood Stork	G4	S2	T	FT
Polygala lewtonii Lewton's polygala	G2	S2	E	E

Matrix Unit ID: 43279

1 Documented Element Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Sceloporus woodi Florida Scrub Lizard	G2G3	S2S3	N	N

0 Documented-Historic Elements Found

6 Likely Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Aphelocoma coerulescens Florida Scrub-Jay	G2?	S1S2	T	FT
Eriogonum longifolium var. gnaphalifolium scrub buckwheat	G4T3	S3	T	E
Gopherus polyphemus Gopher Tortoise	G3	S3	C	ST
<i>Mesic flatwoods</i>	G4	S4	N	N
Mycteria americana Wood Stork	G4	S2	T	FT
<i>Scrub</i>	G2	S2	N	N

Matrix Unit ID: 43280

0 Documented Elements Found

0 Documented-Historic Elements Found

6 Likely Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Aphelocoma coerulescens Florida Scrub-Jay	G2?	S1S2	T	FT
Gopherus polyphemus Gopher Tortoise	G3	S3	C	ST
<i>Mesic flatwoods</i>	G4	S4	N	N
Mycteria americana Wood Stork	G4	S2	T	FT
<i>Sandhill upland lake</i>	G3	S2	N	N
<i>Upland hardwood forest</i>	G5	S3	N	N

Matrix Unit ID: 43281

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
Gopherus polyphemus Gopher Tortoise	G3	S3	C	ST
<i>Mesic flatwoods</i>	G4	S4	N	N
Mycteria americana Wood Stork	G4	S2	T	FT
<i>Scrub</i>	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?	S1S2	T	FT
Chionanthus pygmaeus pygmy fringe tree	G2G3	S2S3	E	E
<i>Mesic flatwoods</i>	G4	S4	N	N
Mycteria americana Wood Stork	G4	S2	T	FT
Plestiodon egregius lividus Blue-tailed Mole Skink	G5T2	S2	T	FT
Plestiodon reynoldsi Sand Skink	G3	S3	T	FT
Polygonella myriophylla Small's jointweed	G3	S3	E	E
<i>Scrub</i>	G2	S2	N	N

Matrix Unit IDs: 42533, 42905, 42906, 42907, 42908, 42909, 43279, 43280, 43281, 43282

59 **Potential** Elements Common to Any of the 10 Matrix Units

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Andropogon arctatus pinewoods bluestem	G3	S3	N	T
<i>Antigone canadensis pratensis</i> Florida Sandhill Crane	G5T2	S2	N	ST
Aphelocoma coerulescens Florida Scrub-Jay	G2?	S1S2	T	FT
Athene cunicularia floridana Florida Burrowing Owl	G4T3	S3	N	ST
Bonamia grandiflora Florida bonamia	G3	S3	T	E
<i>Calamintha ashei</i> Ashe's savory	G3	S3	N	T
Calopogon multiflorus many-flowered grass-pink	G2G3	S2S3	N	T
<i>Carex chapmannii</i> Chapman's sedge	G3	S3	N	T
Centrosema arenicola sand butterfly pea	G2Q	S2	N	E

<i>Chionanthus pygmaeus</i> pygmy fringe tree	G2G3	S2S3	E	E
<i>Cladonia perforata</i> perforate reindeer lichen	G2G3	S2S3	E	E
<i>Clitoria fragrans</i> scrub pigeon-wing	G2G3	S2	T	E
<i>Coelorachis tuberculosa</i> Piedmont jointgrass	G3	S3	N	T
<i>Coleataenia abscissa</i> cutthroatgrass	G3	S3	N	E
<i>Conradina brevifolia</i> short-leaved rosemary	G2Q	S2	E	E
<i>Corynorhinus rafinesquii</i> Rafinesque's Big-eared Bat	G3G4	S1	N	N
<i>Crotalaria avonensis</i> Avon Park rabbit-bells	G1	S1	E	E
<i>Dicerandra christmanii</i> Garrett's scrub balm	G1	S1	E	E
<i>Dicerandra frutescens</i> scrub mint	G1	S1	E	E
<i>Drymarchon couperi</i> Eastern Indigo Snake	G3	S2?	T	FT
<i>Dryobates borealis</i> Red-cockaded Woodpecker	G3	S2	E, PT	FE
<i>Eriogonum longifolium</i> var. <i>gnaphalifolium</i> scrub buckwheat	G4T3	S3	T	E
<i>Gopherus polyphemus</i> Gopher Tortoise	G3	S3	C	ST
<i>Gymnopogon chapmanianus</i> Chapman's skeletongrass	G3	S3	N	N
<i>Hartwrightia floridana</i> hartwrightia	G2	S2	N	T
<i>Heterodon simus</i> Southern Hognose Snake	G2	S2S3	N	N
<i>Hypericum cumulicola</i> Highlands Scrub hypericum	G2	S2	E	E
<i>Illicium parviflorum</i> star anise	G2	S2	N	E
<i>Lechea cernua</i> nodding pinweed	G3	S3	N	T
<i>Lechea divaricata</i> pine pinweed	G2	S2	N	E
<i>Liatris ohlingerae</i> Florida blazing star	G2	S2	E	E
<i>Lithobates capito</i> Gopher Frog	G2G3	S3	N	N
<i>Lupinus aridorum</i> scrub lupine	G3T1	S1	E	E
<i>Matelea floridana</i> Florida spiny-pod	G2	S2	N	E
<i>Mustela frenata peninsulæ</i> Florida Long-tailed Weasel	G5T3?	S3?	N	N
<i>Nemastylis floridana</i> celestial lily	G2	S2	N	E
<i>Neofiber alleni</i> Round-tailed Muskrat	G2	S2	N	N
<i>Nolina atopocarpa</i> Florida beargrass	G3	S3	N	T
<i>Nolina brittoniana</i> Britton's beargrass	G3	S3	E	E
<i>Notophthalmus perstriatus</i> Striped Newt	G2G3	S2	N	C
<i>Paronychia chartacea</i> var. <i>chartacea</i> paper-like nailwort	G3T3	S3	T	E

<i>Peucaea aestivalis</i> Bachman's Sparrow	G3	S3	N	N
<i>Plestiodon egregius lividus</i> Blue-tailed Mole Skink	G5T2	S2	T	FT
<i>Plestiodon reynoldsi</i> Sand Skink	G3	S3	T	FT
<i>Peromyscus floridanus</i> Florida Mouse	G3	S3	N	N
<i>Polygala lewtonii</i> Lewton's polygala	G2	S2	E	E
<i>Polygonella basiramia</i> Florida jointweed	G3	S3	E	E
<i>Polygonella myriophylla</i> Small's jointweed	G3	S3	E	E
<i>Prunus geniculata</i> scrub plum	G3	S3	E	E
<i>Pteroglossaspis ecristata</i> giant orchid	G2G3	S2	N	T
<i>Puma concolor coryi</i> Florida Panther	G5T1	S1	E	FE
<i>Rostrhamus sociabilis</i> Snail Kite	G4G5	S2	E	FE
<i>Salix floridana</i> Florida willow	G2G3	S2S3	N	E
<i>Sceloporus woodi</i> Florida Scrub Lizard	G2G3	S2S3	N	N
<i>Schizachyrium niveum</i> scrub bluestem	G1G2	S1S2	N	E
<i>Sciurus niger niger</i> Southeastern Fox Squirrel	G5T5	S3	N	N
<i>Ursus americanus floridanus</i> Florida Black Bear	G5T4	S4	N	N
<i>Warea amplexifolia</i> clasping warea	G1	S1	E	E
<i>Warea carteri</i> Carter's warea	G1	S1	E	E

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Unofficial Report

These results are considered unofficial. FNAI offers a [Standard Data Request](#) option for those needing certifiable data.



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FLORIDA
Natural Areas
INVENTORY

Florida Natural Areas Inventory

Biodiversity Matrix Query Results

UNOFFICIAL REPORT

Created 2/26/2025

(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: 42159 , 42160 , 42530 , 42531 , 42532 , 42904

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: 42159

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

1 **Likely** Element Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
<i>Mycteria americana</i> Wood Stork	G4	S2	T	FT

Matrix Unit ID: 42160

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

2 Likely Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Mycteria americana Wood Stork	G4	S2	T	FT
<i>Upland hardwood forest</i>	G5	S3	N	N

Matrix Unit ID: 42530

1 Documented Element Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
<i>Paronychia chartacea</i> var. <i>chartacea</i> paper-like nailwort	G3T3	S3	T	E

0 Documented-Historic Elements Found

2 Likely Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Mycteria americana Wood Stork	G4	S2	T	FT
<i>Upland hardwood forest</i>	G5	S3	N	N

Matrix Unit ID: 42531

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
<i>Mesic flatwoods</i>	G4	S4	N	N
Mycteria americana Wood Stork	G4	S2	T	FT
<i>Scrub</i>	G2	S2	N	N
<i>Upland hardwood forest</i>	G5	S3	N	N

Matrix Unit ID: 42532

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
Clitoria fragrans scrub pigeon-wing	G2G3	S2	T	E
<i>Mesic flatwoods</i>	G4	S4	N	N
Mycteria americana Wood Stork	G4	S2	T	FT
Polygala lewtonii Lewton's polygala	G2	S2	E	E
<i>Scrub</i>	G2	S2	N	N

Matrix Unit ID: 429040 **Documented** Elements Found0 **Documented-Historic** Elements Found4 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Clitoria fragrans scrub pigeon-wing	G2G3	S2	T	E
Mycteria americana Wood Stork	G4	S2	T	FT
<i>Sandhill upland lake</i>	G3	S2	N	N
<i>Scrub</i>	G2	S2	N	N

Matrix Unit IDs: 42159, 42160, 42530, 42531, 42532, 4290458 **Potential** Elements Common to Any of the 6 Matrix Units

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
<i>Antigone canadensis pratensis</i> Florida Sandhill Crane	G5T2	S2	N	ST
Aphelocoma coerulescens Florida Scrub-Jay	G2?	S1S2	T	FT
Athene cunicularia floridana Florida Burrowing Owl	G4T3	S3	N	ST
Bonamia grandiflora Florida bonamia	G3	S3	T	E
<i>Calamintha ashei</i> Ashe's savory	G3	S3	N	T
Calopogon multiflorus many-flowered grass-pink	G2G3	S2S3	N	T
<i>Carex chapmannii</i> Chapman's sedge	G3	S3	N	T
Centrosema arenicola sand butterfly pea	G2Q	S2	N	E
Chionanthus pygmaeus pygmy fringe tree	G2G3	S2S3	E	E
Cladonia perforata perforate reindeer lichen	G2G3	S2S3	E	E
Clitoria fragrans scrub pigeon-wing	G2G3	S2	T	E
Coelorachis tuberculosa Piedmont jointgrass	G3	S3	N	T
<i>Coleataenia abscissa</i> cutthroatgrass	G3	S3	N	E
<i>Conradina brevifolia</i> short-leaved rosemary	G2Q	S2	E	E
Corynorhinus rafinesquii Rafinesque's Big-eared Bat	G3G4	S1	N	N
Crotalaria avonensis Avon Park rabbit-bells	G1	S1	E	E
Dicerandra christmanii Garrett's scrub balm	G1	S1	E	E
<i>Dicerandra frutescens</i> scrub mint	G1	S1	E	E
Drymarchon couperi Eastern Indigo Snake	G3	S2?	T	FT
Dryobates borealis Red-cockaded Woodpecker	G3	S2	E, PT	FE
Eriogonum longifolium var. gnaphalifolium scrub buckwheat	G4T3	S3	T	E

<i>Gopherus polyphemus</i> Gopher Tortoise	G3	S3	C	ST
<i>Gymnopogon chapmanianus</i> Chapman's skeletongrass	G3	S3	N	N
<i>Hartwrightia floridana</i> hartwrightia	G2	S2	N	T
<i>Heterodon simus</i> Southern Hognose Snake	G2	S2S3	N	N
<i>Hypericum cumulicola</i> Highlands Scrub hypericum	G2	S2	E	E
<i>Illicium parviflorum</i> star anise	G2	S2	N	E
<i>Lechea cernua</i> nodding pinweed	G3	S3	N	T
<i>Lechea divaricata</i> pine pinweed	G2	S2	N	E
<i>Liatris ohlingerae</i> Florida blazing star	G2	S2	E	E
<i>Lithobates capito</i> Gopher Frog	G2G3	S3	N	N
<i>Lupinus aridorum</i> scrub lupine	G3T1	S1	E	E
<i>Matelea floridana</i> Florida spiny-pod	G2	S2	N	E
<i>Mustela frenata peninsulae</i> Florida Long-tailed Weasel	G5T3?	S3?	N	N
<i>Nemastylis floridana</i> celestial lily	G2	S2	N	E
<i>Neofiber alleni</i> Round-tailed Muskrat	G2	S2	N	N
<i>Nolina atopocarpa</i> Florida beargrass	G3	S3	N	T
<i>Nolina brittoniana</i> Britton's beargrass	G3	S3	E	E
<i>Paronychia chartacea</i> var. <i>chartacea</i> paper-like nailwort	G3T3	S3	T	E
<i>Peucaea aestivalis</i> Bachman's Sparrow	G3	S3	N	N
<i>Phyllophaga okeechobea</i> Diurnal Scrub June Beetle	G2	S2	N	N
<i>Plestiodon egregius lividus</i> Blue-tailed Mole Skink	G5T2	S2	T	FT
<i>Plestiodon reynoldsi</i> Sand Skink	G3	S3	T	FT
<i>Podomys floridanus</i> Florida Mouse	G3	S3	N	N
<i>Polygala lewtonii</i> Lewton's polygala	G2	S2	E	E
<i>Polygonella basiramia</i> Florida jointweed	G3	S3	E	E
<i>Polygonella myriophylla</i> Small's jointweed	G3	S3	E	E
<i>Prunus geniculata</i> scrub plum	G3	S3	E	E
<i>Pteroglossaspis ecristata</i> giant orchid	G2G3	S2	N	T
<i>Puma concolor coryi</i> Florida Panther	G5T1	S1	E	FE
<i>Rostrhamus sociabilis</i> Snail Kite	G4G5	S2	E	FE
<i>Salix floridana</i> Florida willow	G2G3	S2S3	N	E
<i>Sceloporus woodi</i> Florida Scrub Lizard	G2G3	S2S3	N	N

<i>Schizachyrium niveum</i> scrub bluestem	G1G2	S1S2	N	E
<i>Sciurus niger niger</i> Southeastern Fox Squirrel	G5T5	S3	N	N
<i>Ursus americanus floridanus</i> Florida Black Bear	G5T4	S4	N	N
<i>Warea amplexifolia</i> clasping warea	G1	S1	E	E
<i>Warea carteri</i> Carter's warea	G1	S1	E	E

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Unofficial Report

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DRAFT



Appendix F: Species Consultation Keys

DRAFT



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 interspersed 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 protection 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 burrow¹. 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.....NLAA²

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

End Key

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

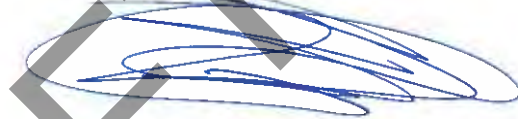
² Please note, if the proposed project will impact less than 25 acres of vegetated eastern indigo snake habitat (not urban/ human-altered) completely surrounded by urban development, and an eastern indigo snake has been observed on site, NLAA is not the appropriate conclusion. The Service recommends 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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**U.S. Fish and Wildlife Service
Florida Ecological Services Field Office**

FLORIDA BONNETED BAT CONSULTATION GUIDELINES

2024 REVISION

The U.S. Fish and Wildlife Service's Florida Ecological Services Field Office (Service) developed the Florida Bonneted Bat Consultation Guidelines (Guidelines) to assist in avoiding and minimizing potential negative effects to roosting and foraging habitat and assessing effects to the Florida bonneted bat (*Eumops floridanus*; FBB) from proposed projects. The Consultation Keys within the Guidelines assist applicants in evaluating their proposed projects and identifying the appropriate consultation paths under sections 7 and 10 of the Endangered Species Act of 1973 (Act), as amended (87 Stat. 884; 16 U.S.C. 1531 *et seq.*). The Florida Bonneted Bat Consultation Guidelines and associated Consultation Keys are designed to streamline and expedite consultations; however, use of the Consultation Keys are voluntary and may not be appropriate for some projects.

These Guidelines are a revision of the 2019 Guidelines. The Consultation Area, Consultation Key, Survey Methods, and Best Management Practices (BMPs) were revised based upon the best available scientific information. These Guidelines also include a Key for the Critical Habitat for the Florida bonneted bat. As more information is obtained, these Guidelines will be revised as appropriate. If you have comments or suggestions on any section of these Guidelines, please email FBBguidelines@fws.gov. Comments will be reviewed and incorporated into future revisions.

These Guidelines do not apply to projects involving the renovation of an existing artificial structure (e.g., building, house) within the urban environment with or without additional ground disturbing activities (please contact the Service for additional guidance). For communication tower projects, please confer with additional and supplemental guidance ([USFWS Comm Tower Guidance](#), [2020 Florida Comm Tower Clearance](#)).

Without other, project-specific guidance provided by the Service, the Guidelines and Determination Keys must be followed explicitly. If they are not followed properly, your project may not be in compliance with the Act. If you have question regarding the Guidelines, including application of the Keys for your specific project, BMPs, designing surveys, definitions, or other questions, contact the Florida Bonneted Bat Recovery Lead (Sandra_Sneckenberger@fws.gov; 772-925-5510).

HOW TO COMPLETE PROJECT REVIEWS WITHIN THE FLORIDA BONNETED BAT'S RANGE

1. Refer to "[Guidance for Completing Project Reviews Under the Endangered Species Act](#)" for steps that must be completed before using the Keys below.
2. Use both FBB Consultation Key and FBB CH Consultation Key (below) and follow all instructions and steps in keys and appendices. If additional information is needed or you want personal assistance regarding application of the Consultation Keys, survey design, or BMPs, please contact the [Florida Bonneted Bat Recovery Lead](#).
3. Include detailed information on how required BMPs are incorporated into your project designs. If all required BMPs cannot be incorporated into project, further consultation with the Service is required.
4. Again, refer to "[Guidance for Completing Project Reviews Under the Endangered Species Act](#)" for information on submitting your project for review. If additional information is needed or you want assistance regarding the consultation process, please contact FW4FLESRegs@fws.gov.

FLORIDA BONNETED BAT CONSULTATION KEY

- 1a. [Action area](#) is wholly or partially within the [FBB consultation area](#) (Figure 1)**Go to 2**
- 1b. [Action area](#) does not overlap with any of the [FBB consultation area](#) (Figure 1).....**No Effect**
- 2a. [Action area](#) contains potential FBB [foraging](#) or [roosting habitat](#).....**Go to 3**
- 2b. [Action area](#) does not contain potential FBB [foraging](#) or [roosting habitat](#).....**No Effect**
- 3a. Project entirely consists of land management, conservation, or restoration activities, such as prescribed fire, forestry practices, and invasive species removal, and the activities and effects to the FBB are addressed under a current Biological Opinion (BO)
..... **Follow all applicable avoidance and minimization measures included in the BO. No additional consultation is required.**
- 3b. Project entirely consists of land management, conservation, or restoration activities, such as prescribed fire, forestry practices, and invasive species removal, but does not have a current BO that addresses these activities or their effects to the FBB**MANLAA with required BMPs**
- 3c. The project's purpose is not solely intended for conservation/restoration or land management actions.....**Go to 4**
- 4a. Project proponents choose to assume presence of FBB based on potential [foraging habitat](#) and/or suitable [roosting habitat](#), historical or recent detection records (e.g., FBB capture, telemetry data, acoustic records), and/or the project location is within the [FBB assumed presence polygon](#) (Figure 1)**Go to 5**
- 4b. Project proponents choose to not assume presence of FBB.....**Go to 9**

- 5a. One or more [potential FBB roost trees](#) are present within the [action area](#) ([foraging](#) and [roosting habitat](#) exists on site), but trees are too numerous within the [action area](#) to properly inventory/visually survey.....[LAA](#)
Further consultation with the Service is required.
- 5b. One or more [potential FBB roost trees](#) are present within the [action area](#) ([foraging](#) and [roosting habitat](#) exists on site) and all trees on site can be properly inventoried/visually surveyed.....**Conduct [Roost Structure Inventory/Survey](#), then Go to 6**
- 5c. No potential [FBB roosting habitat](#) is present within the [action area](#) ([foraging habitat](#) only is present on the site).....**Go to 7**
- 6a. Survey results do not show [active FBB roosting](#) is likely.....**Go to 8**
- 6b. Survey results show [active FBB roosting](#) is likely[LAA](#)
Further consultation with the Service is required.
- 7a. [Project impact area](#) is less than 25 acres (10 hectares) of FBB [foraging habitat](#) and [outside](#) of Miami-Dade County.....[MANLAA](#) with required [BMPs](#)
- 7b. [Project impact area](#) is 25 acres (10 hectares) or greater of FBB [foraging habitat](#) or project is [within](#) Miami-Dade County..... [LAA](#)
Further consultation with the Service is required.
- 8a. [Project impact area](#) is less than 25 acres (10 hectares) of FBB [roosting habitat and foraging habitat](#) and [outside](#) of Miami-Dade County.....[MANLAA](#) with required [BMPs](#)
- 8b. [Project impact area](#) is 25 acres (10 hectares) or greater of FBB [roosting habitat and foraging habitat](#) or project is [within](#) Miami-Dade County..... [LAA](#)
Further consultation with the Service is required.
- 9a. [Project impact area](#) is less than or equal to 5 acres (2 hectares), trees are few enough that they can be visually surveyed/inventoried individually, and project is located outside of Miami-Dade County.....**Conduct [Roost Structure Inventory/Survey](#), then Go to 10**
- 9b. [Project impact area](#) is more than 5 acres (2 hectares), or trees are too numerous to properly survey individually, or the project is located in Miami-Dade County
.....**Conduct [Acoustic Survey](#), then Go to 11**
- 10a. Results do not show [active FBB roosting](#) is likely.....[MANLAA](#) with required [BMPs](#)
- 10b. Results show [active FBB roosting](#) is likely..... [LAA](#)
Further consultation with the Service is required.
- 11a. Survey results yield no detection of [FBB acoustic activity](#)
.....[MANLAA](#) with required [BMPs](#)
- 11b. Survey results indicate [FBB acoustic activity](#).....**Go to 12**

- 12a. [Project impact area](#) is less than 25 acres (10 hectares) of FBB [foraging habitat](#) or [roosting habitat](#) and [outside](#) of Miami-Dade County.....[MANLAA with required BMPs](#)
- 12b. [Project impact area](#) is 25 acres (10 hectares) or greater of FBB [foraging habitat](#) or [roosting habitat](#) or project is [within](#) Miami-Dade County..... [LAA](#)
Further consultation with the Service is required.

FLORIDA BONNETED BAT CRITICAL HABITAT CONSULTATION KEY

- 1a. [Action area](#) does not overlap with or have indirect effects on any designated FBB critical habitat ([Figure 1](#)).....[No Effect \(to CH\)](#)
- 1b. [Action area](#) is wholly or partially within designated FBB critical habitat ([Figure 1](#)) OR may have indirect effects on designated critical habitat.....[Go to 2](#)
Indirect effects on critical habitat adjacent or near the project area may include, for example, changes in hydrology, or reduced ability to perform prescribed fire or other land management activities.
- 2a. Project entirely consists of land management, conservation, or restoration activities, such as prescribed fire, forestry practices, and invasive species removal, and the activities and effects to the FBB CH are addressed under a current BO..... **Follow all the Reasonable and Prudent Measures, Terms and Conditions, and Monitoring and Reporting Requirements included in the current BO. No additional consultation is required.**
- 2b. Project entirely consists of land management, conservation, or restoration activities, such as prescribed fire, forestry practices, and invasive species removal, and the activities, but the effects to the FBB CH are not addressed under a current BO.....[MANLAA \(CH\) with required BMPs](#)
- 2c. The project's purpose is not solely intended for conservation/restoration or land management actions..... **Go to 3**
- 3a. The [action area](#) overlaps with less than 0.01% of the CH unit[MANLAA \(CH\) with required BMPs](#)
- 3b. The [action area](#) overlaps with more than 0.01% of the CH unit **Further consultation with the Service is required.**
Formal consultation may or may not be required. The Service will determine if adverse effects or adverse modification thresholds have been reached based on the function and context of the unit or subunit in which the action occurs.

Unit	Total Acreage	0.01%
1	175,735	17.5
2	28,046	2.8
3	134,677	13.5
4	12,995	1.3
5	48,865	4.9
6	714,085	71.4
7	16,604	1.7
8	25,337	2.5
9	4,281	~ 0.5

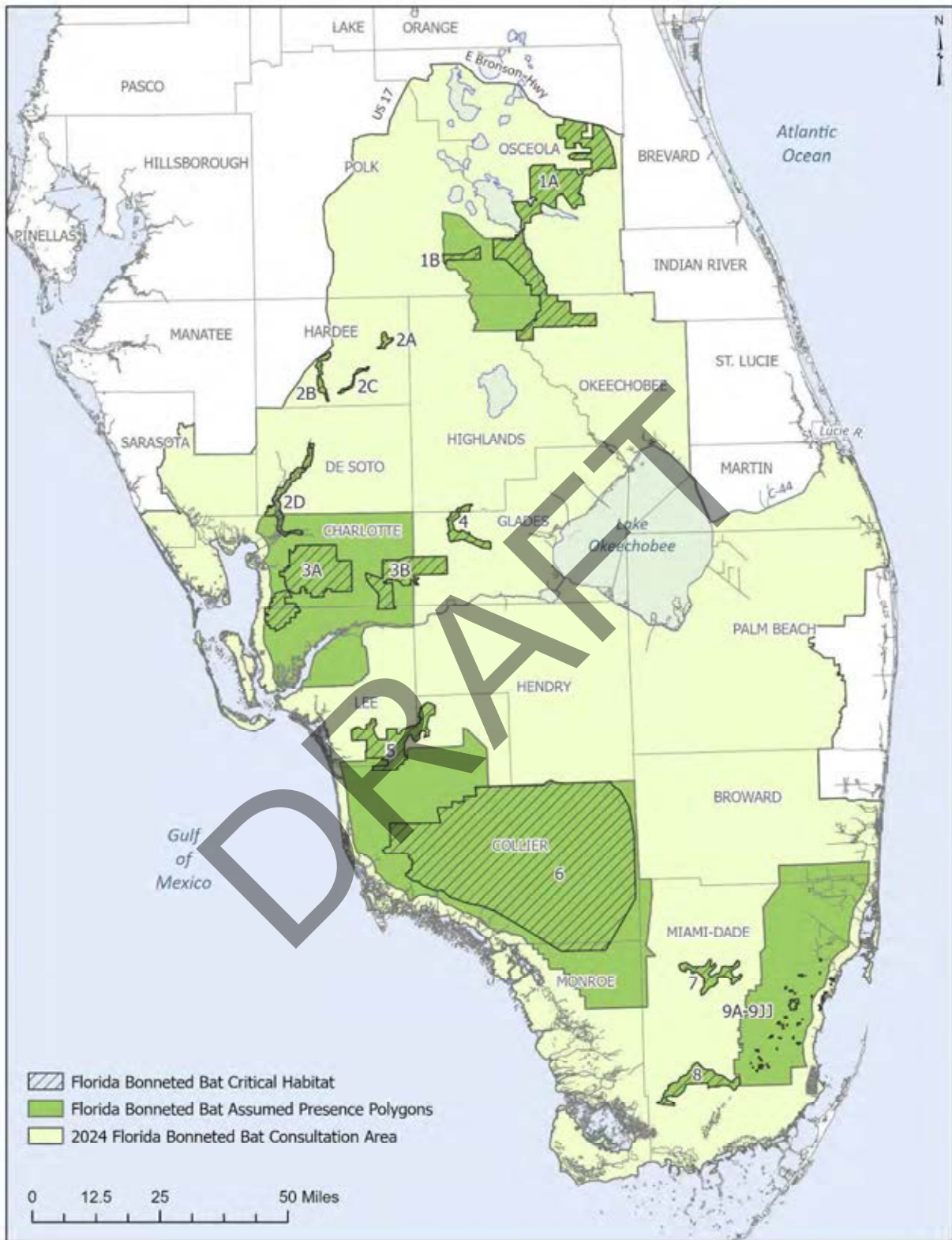


Figure 1. Florida Bonneted Bat Consultation Area, Critical Habitat Units, and Assumed Presence Polygons.

Appendix A: Florida Bonneted Bat Potential Roost Structure Inventory/Survey Methods

Purpose: The purpose of this survey is to: (1) identify potential Florida bonneted bat (FBB) roost structures within the project area; (2) qualitatively and quantitatively assess potential project impacts to FBBs and their habitat; (3) determine if FBB are likely to be actively roosting within suitable trees or artificial structures within the project area; (4) locate active roost(s) so loss or disturbance can be minimized; and, (5) avoid the take of individuals by informing the incorporation of conservation measures and best management practices into the project design. In many cases, changes in project designs or activities can avoid and minimize take.

If the applicant is unable to follow or does not want to follow the Florida Bonneted Bat Roost Structure Inventory/Survey Methods as recommended according to the Consultation Key, the Corps (or other Action Agency) will not be able to use these Guidelines and will need to provide a biologically supported rationale using the best available information for their determination in their request for consultation.

General Description: This survey effort is a multi-step process including a tree inventory of the project area, visual inspection of tree surfaces (as well as consideration of artificial structures or buildings on site), peeping and emergence counts for all cavities, hollows, areas of loose bark, and any other suspicious areas. Methods are dependent upon composition and configuration of project site and in most cases should be discussed with the [Florida Bonneted Bat Recovery Lead](#).

General Survey Expectations:

- Approach is intended for project areas where the number and configuration of trees allow for all trees to be properly and thoroughly inventoried and individually inspected.
- Efforts should focus on assessing potential roosting structures within the project site that will be lost or modified (i.e., areas that will not be conserved), or are located on the property within 250 feet (ft) (76 meters [m]) of areas that will not be conserved. This will help avoid or minimize the loss of an active roost and individuals.
- Artificial structures and buildings on site with heights 15 ft (4.6 m) or greater should also be considered and surveyed.
- Use of provided data sheets below are preferred. If you create your own, please do not omit any information as it may not be accepted. Data requested for submission follows the data structure of the North American Bat Monitoring Program USGS Partner Portal (Loeb et al. 2015: <https://www.nabatmonitoring.org/resources>).

GENERAL INVENTORY OF TREES AND STRUCTURES:

- All trees over 20 ft (6 m) tall should be inventoried; tree snags and artificial structures over 10 ft (3 m) tall should be inventoried. In areas with more dense growth, line

transects can be run through roosting habitat closely enough so that all trees and snags are easily inspected.

- Tree species, height, and diameter at breast height (DBH) of each tree (over 20 ft [6 m] in height) and snags (over 10 ft [3 m] in height) on the site should be listed (see [General Roost Structure Inventory Data Sheet Example](#)). Artificial structures 10 ft (3 m) in height or greater that may mimic natural roosting conditions (e.g., bat houses, utility poles, buildings over one story high with chimneys, gaps in soffits, gaps along gutters, or other structural gaps or crevices), situated in natural or semi-natural habitats should also be listed.
- Using binoculars, trees and snags (and artificial structures) must be visually inspected for evidence of its potential use as a roost/shelter, including, but not limited to openings 1 inch (in) (2.5 centimeter [cm]) in diameter or greater.
- The presence of any cavities, hollows, decay, or loose bark should be noted, including the height of the cavity or deformity. Photographs should be taken of any trees, snags, or artificial structures with cavities or other deformities where bats may emerge or find shelter.
- If no potential roost trees, snags or structures have been identified, these data do not need to be submitted into NABat.

DATA COLLECTION FOR POTENTIAL ROOST TREES AND STRUCTURES:

- For [potential roost trees](#) and snags, and artificial structures identified in the inventory, the following information is required for NABat data submission and must be collected for every structure regardless of presence of bats in the structure. A single roost structure may have one or more roosting features (see [Roost Structure Inventory Data Sheet Example](#) for definitions):

- o GRTS Cell ID
- o Location Name
- o Latitude Decimal Degrees
- o Longitude Decimal Degrees
- o Observer
- o Exit Identifier(s)
- o Roost Location Method
- o Broad Habitat Type
- o Dominant plant species
- o Roost Type
- o Roosting Location
- o Aspect of Exit
- o Vegetation Obstruction
- o Emergence Point Height
- o Emergence Opening Width
- o Emergence Opening Height
- o Structure Height

- o Structure Width
 - o Building Occupancy (only required if Roost Type was a building feature)
 - o Building Type (only required if Roost Type was a building feature)
 - o Tree Species (only required if Roost Type was a tree feature)
 - o Tree Decay (only required if Roost Type was a tree feature)
 - o Diameter Breast Height (only required if Roost Type was a tree feature)
 - o Guano Amount
 - o Survey Event Comments
- If no [potential roost trees](#), snags, or structures are found in the project area or within 250 ft (76 m), survey data will still need to be submitted. Note that an area without roosting habitat, may be used for foraging. As such, if no roost structures are found, there may be a need to conduct a follow-up acoustic survey if it remains necessary to determine presence/absence of FBB.

VISUAL INSPECTION OF POTENTIAL ROOST TREES AND STRUCTURES VIA TREE-TOP CAMERAS:

- Contact the [FBB Recovery Lead](#) if active Red-cockaded Woodpecker (RCW) trees are expected within the survey area.
- Roost features on every identified potential roost structure should be visually inspected using a video probe (i.e., tree-top camera or “peeper”) to assess the internal contents, when possible.
- The visual inspection survey is only considered to be a valid roost survey on its own if the entire internal contents of all roosting features identified in the area of impact can be observed. However, visual inspection with a tree-top camera alone is most often not acceptable due to the potential for roosts to be too high for cameras to reach, too small for cameras to fit, or shaped in a way that contents are out of view (Braun de Torrez et al. 2016). If any roosting features are out of reach or otherwise do not allow for a full inspection, it is required to follow up with emergence surveys.
- Note other present wildlife or other pertinent information about the structure (e.g., carcasses or skeletons present, nesting materials found, etc.). If any bat species or listed species is present, contact the [FBB Recovery Lead](#) as soon as possible. If FBBs (or other bat species) are found in any features of a roost structure during the visual inspection survey, the following additional information must be collected (see [Roost Structure Inventory Data Sheet Example](#) for definitions):
 - o Seasonal Use
 - o Maternity Stage (only required if Seasonal Use was identified as maternity)
 - o Species
 - o Estimate Min

- o Estimate Max
 - o Count Confidence
 - o Pups Observed
 - o Pup Count
 - o Pup Comments
 - o Survey Event Comments
- When a visual inspection survey is conducted and no bats are found in any reachable (or all) roosting features, in the Survey Event Comments, include that no bats are present.
 - Please note that if it is not possible to identify the species of the bats in the roost, further surveys (e.g., emergence, acoustic surveys) may be necessary for species identification.

VISUAL INSPECTION OF POTENTIAL ROOST TREES AND STRUCTURES VIA EMERGENCE SURVEYS:

- Multiple observers should be stationed at potential roosts for emergence surveys. On a minimum of two nights of suitable weather, surveyors should be quietly stationed 30 minutes before sunset, so they are ready to look and listen for emerging bats from sunset to 1½ hours after sunset. When conducting emergence surveys, it is best to orient observers so that the roost is silhouetted in the remaining daylight; facing west can help maximize the ability to notice movement of animals out of a roost structure. The use of an acoustic detector with an emergence survey can greatly increase confidence in species identification. While this can be done with a passive recording device, it may be beneficial to utilize a live spectrogram device.
- Emergence surveys can be conducted any time of year as long as weather conditions meet the criteria. Although not required at this time, it has been demonstrated that conducting surveys on warm nights late in the spring can help maximize detection probabilities (Ober et al. 2016; Bailey et al. 2017). If any of the following weather conditions exist at a roost structure during an emergence survey, note the time and duration of such conditions, and repeat the emergence survey effort for that night, when necessary:
 - o temperatures fall below 60°F (15.5°C);
 - o precipitation, including rain and/or fog, that exceeds 30 minutes or continues intermittently during the survey period; or
 - o sustained wind speeds greater than 9 miles/hour (4 meters/second; 3 on Beaufort scale) for 30 minutes or more during the survey period (Service 2024).
- At a minimum, nightly weather conditions for survey sites should be checked using the nearest NOAA National Weather Service station and summarized in the survey reports (for the survey nights submitted).

- Note other present wildlife or other pertinent information about the structure (e.g., woodpeckers visiting structure, disturbances around structure, etc.). If Florida bonneted bats (or other bat species) are observed entering or exiting a roost structure during the emergence survey, the following additional information must be collected (see [Emergence Survey Data Sheet Example](#) for definitions):
 - o Roost Exit Points
 - o Seasonal Use
 - o Maternity Stage
 - o Species
 - o Identification Method
 - o Count Species In
 - o Count Species Out
 - o Estimate Min
 - o Estimate Max
 - o Count Confidence
 - o Observation Method
 - o Distance from Roost
 - o Reason Survey Ended
 - o Starting/Ending Temperature
 - o Starting/Ending Relative Humidity
 - o Starting/Ending Cloud Cover
 - o Starting/Ending Wind Speed
 - o Starting/Ending Weather Event
 - o Survey Event Comments
- When an emergence survey is conducted for a potential roost structure and no bats are observed at all, in the Survey Event Comments, include that no bats are present.

FINAL REPORTING:

- Much like the acoustic data submission process, the process of submitting FBB regulatory roost inventories and surveys to the Service incorporates the North American Bat Monitoring Program Partner Portal platform. Final reporting entails completed submission of the survey into the NABat Partner Portal, as well as communication with the [FBB Recovery Lead](#). Additional guidance and resources on how to correctly complete this process are available at <https://www.nabatmonitoring.org/fbb>.
- The report shall also be provided to the Corps project manager assigned to the project for which the survey was conducted, and to the Service along with the project submittal via FW4FLESRegs@fws.gov. Please use a subject line for the emails: "Submittal (or Final FBB report) for [insert Project Name] FWS Project Code [insert Project Code number]" so that it can be distributed to the appropriate biologist(s).

- Reporting requirements:
 - o Summary of the project site
 - Project area acreage
 - Habitat types/land cover
 - Location (county, city, etc.), coordinates (decimal degrees latitude/longitude), site location and detailed maps
 - Project description, purpose, designs
 - o Summary of the methods used
 - Devices used (make, model, serial number, firmware version)
 - Methods used for tree inventory
 - Methods used for surveying for roost occupancy survey
 - General set-up description for surveys (e.g., distances between transects, equipment to elevate video probes, position and orientation to roost structure, etc.)
 - Photo of each/all [potential roost trees and structures](#) and its roost feature(s) (more detailed photos of each roost feature when possible)
 - o Summary of survey results
 - Inventory table/data sheets
 - Effects determination and explanation
 - BMPs to be incorporated
 - Include weather conditions for the days of emergence surveys
- Negative surveys are valid for 1 year after completion of the survey.

If you have comments, or suggestions on this survey protocols, please email your comments to FBBguidelines@fws.gov. These comments will be reviewed and incorporated into future revisions.

Literature Cited - Appendix A

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- Loeb, S.C., T.J. Rodhouse, L.E. Ellison, C.L. Lausen, J.D. Reichard, K.M. Irvine, T.E. Ingersoll, J.T.H. Coleman, W.E. Thogmartin, J.R. Sauer, C.M. Francis, M.L. Bayless, T.R. Stanley, and D.H. Johnson. 2015. A plan for the North American bat monitoring program

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<https://www.fws.gov/verobeach/BirdsPDFs/200407SlopesCompleteRedCockadedWoodpecker.pdf>

U.S. Fish and Wildlife Service. 2024. Range-wide Indiana bat and Northern long-eared bat survey guidelines. <https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines>.

DRAFT

Document all trees over 20 ft (6 m), all snags over 10 ft (3 m), and all artificial structures over 10 ft (3 m) that are present on the project site. Using binoculars, visually inspect all structures for evidence of its potential use as a roost/shelter. Take photos when possible.

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Data Field Definitions (General Roost Structure Inventory)

Date(s): When the survey was conducted.

Project: Descriptive and unique project titles and project numbers.

Site: Specific site of survey for listed project.

GRTS ID: GRTS ID number of the NABat grid cell where the survey was conducted.

Observer(s): First and last names of observers involved in survey. Include company name if relevant.

TREES AND SNAGS

Structure ID: This can be as simple as consecutively identifying trees and snags as “T1, T2, T3, ...” and “S1, S2, S3, ...”.

Status: Select either “Live” or “Dead” for trees or snags, respectively.

Height (m): Estimate or measure of the height of the tree or snag in meters. Leave blank if unknown.

Species: Scientific name of the tree or snag (if identifiable – if no species ID possible for a snag, identify as pine or hardwood if possible).

Roosting Features? (Y/N): Are there any roosting features present on the tree or snag? Select Yes or No.

Photo(s) Taken? (Y/N): Were any photos taken? Select Yes or No.

Notes: Any additional notes about the tree or snag.

ARTIFICIAL STRUCTURES

Structure ID: This can be as simple as consecutively identifying artificial structures as “A1, A2, A3, ...”.

Height (m): Estimate or measure of the height of the structure in meters.

Structure Types: Artificial roost, bridge, building, utility pole, other (include description in Notes).

Roosting Features? (Y/N): Are there any roosting features present on the tree or snag? Select Yes or No.

Photo(s) Taken? (Y/N): Were any photos taken? Select Yes or No.

Notes: Any additional notes about the structure.

EXAMPLE DATA SHEET FOR **ROOST STRUCTURE SURVEY**

For potential roost trees, snags, and artificial structures identified as having features that could be used for roosts, the following information is required for every structure regardless of presence of bats in the structure. A single roost structure may have one or more roosting features.

Date:					
Project:					
Site & GRTS ID:					
Observer(s):					
POTENTIAL ROOST STRUCTURES AND FEATURES					
Structure ID					
Latitude					
Longitude					
Exit Identifier(s)					
Broad Habitat					
Dominant Plant Species					
Roost Type					
Roosting Location					
Exit Aspect(s)					
Vegetation Obstruction					
Emergence Point(s)					
Height (m)					
Emergence Opening(s)					
Width (cm)					
Emergence Opening(s)					
Height (cm)					
Building Occupancy					
Building Type					
Tree Species					
Tree Decay					
DBH					
Guano Amount					
Survey Event Comments					

Data Field Definitions (Roost Structure Survey)

Date(s): When the survey was conducted.

Project: Descriptive and unique project titles and project numbers.

Site: Specific site of survey for listed project.

GRTS ID: GRTS ID number of the NABat grid cell where the survey was conducted.

Observer(s): First and last names of observers involved in survey. Include company name if relevant.

Structure ID: Provide a unique name for every roost structure surveyed within a project. Match ID with inventory.

Latitude/Longitude: Latitudinal and longitudinal coordinates in WGS84 decimal degrees.

Exit Identifier(s): Unique identifier for each notable exit/entry on the structure. Can be as simple as “C1, C2, ...” for cavities, etc.

Broad Habitat Type: Broad habitat type surrounding roost. Select from the following options: agriculture | barren land | forest-conifer | forest-deciduous | forested wetland | grassland | shrubland | urban | water | wetland

Dominant plant species: List the top 1 to 3 dominant plant species surrounding the roost structure.

Roost Type: The type of roost structure from which bats are emerging. Select from the following options: artificial roost bark mimic | artificial roost bat box | artificial roost bat bunker | artificial roost bat condo | artificial roost other | artificial roost unknown | bridge cavity | bridge crevice | bridge expansion joints | bridge other | bridge under bridge | bridge unknown | building attic | building basement | building chimney | building deck | building eaves | building interior | building other | building porch | building roof | building shingles | building under siding | building unknown | other artificial structure dam | other artificial structure utility pole | rock feature other | rock feature rocky outcrop | rock feature talus slope | rock feature unknown | tree basal hollow | tree branch | tree cavity | tree crevice | tree downed | tree debris | tree exfoliating bark | tree foliage | tree on trunk | tree other | tree roots | tree unknown

Roosting Location: Provide a brief description about the exit/entries identified on the roost structure, focusing on the ones used by bats if observed. Limit description to 250 characters or less.

Exit Aspect(s): The cardinal direction the exit(s)/entry(ies) face. Select from the following options: east | multiple | north | northeast | northwest | south | southeast | southwest | unknown | west

Vegetation Obstruction: Is vegetation obstructing the roost exit? State either TRUE or FALSE.

Emergence Point Height: Height of the exit point(s) from the ground (m).

Emergence Opening Width/Height: Width/height of the exit point(s) (cm).

Emergence Opening Height If the “Exit Identifier” field was left blank, leave blank.

Building Occupancy: Leave blank if Roost Type was not a building feature. Building occupied by humans? State TRUE or FALSE.

Building Type: Leave blank if Roost Type was not a building feature. Select from the following options: barn | cabin | commercial building | house | shed | silo

Tree Species: Leave blank if Roost Type was not a tree feature. State the scientific name of the tree species if identifiable.

Tree Decay: Leave blank if Roost Type was not a tree feature. Indicate the decay stage of the tree. Select from the following options: NA | other | stage 1: live | stage 2: declining | stage 3: dead | stage 4: loose bark | stage 5: clean | stage 6: broken | stage 7: decomposed | stage 8: down material | stage 9: stump

DBH: Leave blank if Roost Type was not a tree feature. Diameter of the tree at breast height in centimeters.

Guano Amount: Guano seen in or around the roost structure. Select from the following options: abundant | large mounds | none | scattered

Survey Event Comments: Additional notes about the roost structure.

EXAMPLE DATA SHEET FOR EMERGENCE SURVEYS

Date:		Start/End Temperature (C):	
Project:		Start/End Relative Humidity (%)	
Site & GRTS ID:		Start/End Cloud Cover (%)	
Observer(s):		Start/End Wind Speed (km/h):	
		Start/End Weather Event:	
POTENTIAL ROOST STRUCTURES AND FEATURES			
Structure ID			
Latitude			
Longitude			
Exit Identifier(s)			
# Roost Exits			
Seasonal Use			
Maternity Stage			
Species			
Identification Method			
Count In			
Count Out			
Estimate Min			
Estimate Max			
Count Confidence			
Observation Method			
Distance from Roost (m)			
Reason Survey Ended			
Survey Event Comments			

Data Field Definitions (Emergence Surveys)

Date(s): When the survey was conducted.

Project: Descriptive and unique project titles and project numbers.

Site: Specific site of survey for listed project.

GRTS ID: GRTS ID number of the NABat grid cell where the survey was conducted.

Observer(s): First and last names of observers involved in survey. Include company name if relevant.

Starting/Ending Temperature: Temperature in Celsius at the start and end of the emergence survey.

Starting/Ending Relative Humidity: Relative humidity percentage at the start and end of the emergence survey.

Starting/Ending Cloud Cover: Cloud cover percentage at the start and end of the emergence survey.

Starting/Ending Wind Speed: Wind speed (kilometer per hour [km/h]) at the start and end of the emergence survey.

Starting/Ending Weather Event: Select from the following options for starting and ending weather event: Fair | Partly Cloudy | Mostly Cloudy | Cloudy | Fair / Windy | Mostly Cloudy / Windy | Haze | Fog | Light Rain | Rain | Heavy Rain | Thunder in the Vicinity | Thunder | T-Storm | Heavy T-Storm

Structure ID: Unique structure ID. Match ID with inventory data sheets.

Latitude/Longitude: Latitudinal and longitudinal coordinates in WGS84 decimal degrees.

Roost Exits: The number of exits from which bats emerged.

Seasonal Use: Seasonal use of the roost. Select from the following options: fall roost | hibernacula | maternity | multi-season | spring roost | summer roost | unknown | winter roost

Maternity Stage (only required if Seasonal Use indicated as maternity): Leave blank if Seasonal Use was not identified as maternity. State whether the roost is pre-volant or post-volant.

Species: List the bat species identified. Use one column per species.

Identification Method: Method used to identify each species. Select either acoustics or visual.

Count Species In: Number of bats observed entering the roost.

Count Species Out: Number of bats observed exiting the roost.

Estimate Min: Lowest estimate of the number of bats in the roost.

Estimate Max: Highest estimate of the number of bats in the roost.

Count Confidence: Select from the following options: high (66 - 100%) | low (0 - 33%) | medium (33 - 66%)

Observation Method: Select from the following options: cavity inspection scope | night vision camera | night vision device | night vision device and bat detector | other | thermal camera and bat detector | thermal device | thermal device

Distance from Roost (m): Distance of observer from the roost (m).

Reason Survey Ended: Select from the following options: 15 min after last bat | bats finished emerging | low visibility | unknown

Survey Event Comments: Additional notes about the emergence survey.

Appendix B: Florida Bonneted Bat Acoustic Survey Methods

Purpose: The purpose of this survey is to: (1) determine if Florida bonneted bats (FBBs) are likely to be present within the project area; (2) determine if Florida bonneted bat activity patterns suggest the possibility of active roosting within the project area, (3) qualitatively and quantitatively assess potential project impacts to Florida bonneted bats and their habitat, (4) avoid or minimize the take of individuals by informing the incorporation of conservation measures and best management practices into the project design. In many cases, changes in project designs or activities can avoid and minimize take.

General Description: When properly conducted, acoustic surveys are the most effective way to determine presence and assess habitat use. This survey is a robust acoustic effort designed to detect Florida bonneted bats on a site, when present. Methods are dependent upon composition and configuration of project site and in many cases should be designed collaboratively with the [Florida Bonneted Bat Recovery Lead](#). In some cases, further surveys (e.g., emergence surveys or tree inventories) may be helpful or desirable to properly evaluate project effects or determine how best to avoid and minimize impacts.

General Survey Expectations:

- This approach is intended for larger project sites where [potential FBB roost trees](#) are too numerous to properly inventory/visually survey within the project area.
- For sites containing [roosting habitat](#), acoustic surveys should primarily focus on assessing roosting habitat within the project site that will be lost or modified (i.e., areas that will not be conserved), and locations on the property within 250 feet (76 meters) of areas that will not be conserved. This will help avoid or minimize the loss of an active roost and individuals. Secondly, since part of the purpose is to determine if Florida bonneted bats are present/using the site, acoustic devices should also be placed near open water and wetlands to maximize chances of detection and aid in assessing foraging habitat that may be lost.
- Use of provided data sheets below are preferred. If you create your own, please do not omit any information as it may not be accepted.
- Acoustic surveys should be performed by those who are trained and experienced in setting up, operating, and maintaining acoustic equipment; and retrieving, saving, analyzing, and interpreting data. Surveyors should have completed one or more of the available bat acoustic courses/workshops or be able to show similar on-the-job or academic experience (Service 2024). New surveyors may request “practice projects” where they collect, analyze, interpret, and submit up to two projects for feedback from the [FBB Recovery Lead](#).

- Due to the variation in the quality of recordings, the influence of clutter, the changing performances of software packages over time, and other factors, manual verification is recommended (Loeb et al. 2015). Files that are identified to species from automatic identification programs must be visually reviewed and manually verified by experienced personnel.

HABITAT ASSESSMENT:

- Start with a general assessment of habitat in the project area to identify areas with roosting habitat characteristics.
 - At minimum, conduct a general habitat assessment that records broad habitat types, dominant plant species, presence of [potential FBB roosting habitat](#).
 - Examples of areas to target during acoustic surveys include but are not limited to (if there are any questions about this consult with the [FBB Species Recovery Lead](#)):
 - a cluster of pine trees
 - a section of cypress swamp/dome
 - an area with snags
 - a water feature (e.g., canal, pond, lake)
- For sites that do not contain ANY [roosting habitat](#) but do contain [foraging habitat](#), acoustic efforts should focus on assessing foraging habitat within the project site that will be lost or modified (i.e., areas that will not be conserved).

ACOUSTIC SURVEY DESIGN:

- The number of acoustic survey sites and nights needed for the assessment is dependent upon the overall acreage of suitable habitat ([foraging](#) or [roosting](#)) proposed to be impacted by the action.
- For non-linear projects, a minimum of 9 valid detector nights per 20 acres of suitable habitat is required. For example, for a 145-acre project, 8 detectors should be deployed for a minimum of 9 valid nights ($145 \div 20 = 7.25$; round up to 8). Do not multiply out to get total detector nights and then modify the number of detector sites or nights. Surveys should be planned with the intention of surveying for 9 consecutive valid nights. Contact the [FBB Recovery Lead](#) if it will take over 14 days to attain 9 valid nights.
- For non-linear projects, when surveying for both FBB and tricolored bats (TCB) a minimum of 14 valid detector nights per 20 acres of suitable habitat are acceptable for both species. When surveying for both FBB and TCB, TCB surveys are only valid if conducted March 1 to October 15. Surveys should be planned with the intention of surveying for 14 consecutive valid nights. Contact the [FBB Recovery Lead](#) if it will take over 21 days to attain 14 valid nights.

- For linear projects (e.g., roadways, transmission lines), a minimum of 9 detector nights per 0.6 mi (1 km) is required. When surveying for both FBB and TCB, TCB surveys are only valid if conducted March 1 to October 15. Surveys should be planned with the intention of surveying for 9 consecutive valid nights. Contact the [FBB Recovery Lead](#) if it will take over 14 days to attain 9 valid nights.
- Detectors should be placed to survey all suitable habitat. There is a 300 m minimum distance between deployed detectors.
- Please contact the [FBB Recovery Lead](#) if there is interest in diverting from these protocols (such as setting up detectors less than 300 m apart) or if there is concern about not being able to attain the minimum consecutive nights under valid weather conditions.
- *For any site, and in particular for sites > 250 acres, please feel free to contact the [FBB Recovery Lead](#) to assist in designing an appropriate approach.* Site acreage, site location (e.g., coordinates, project boundary, .kmz files), and a description of what is planned for the site is helpful information to include in correspondence.

ACOUSTIC EQUIPMENT DEPLOYMENT:

- The following acoustic detectors have been used for FBB acoustic surveys. (The Service does not endorse specific products or equipment.) Make sure the devices to be used in the field survey are updated with the most recent firmware version before deployment in the field. If interested in using a detector not listed below, please consult the [FBB Recovery Lead](#).

- o Wildlife Acoustics:

SM2 Bat +	SM2 Bat 192
SM3 Bat	SM4 Bat FS
SM Mini Bat	

- o Binary Acoustic:

AR125	AR125FG
AR180	Acrobat
IFR IV	IFR V

- o Pettersson:

D1000X	D240X
D500X	M500

- o Titley:

Anabat Swift	Anabat Walkabout
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- Microphones can be directional or omnidirectional, but make sure positioning is optimal. If using something other than a standard microphone for the device being used, ensure compatibility and functionality prior to deployment (this may even include a test deployment so recording ability can be assessed).
- It is important no matter what device you are using that you verify its functionality before every deployment. Some companies selling detectors also sell calibration devices to assess the sensitivity of the mics/devices. Devices should be calibrated while paired with the same mics they are going to be deployed in the field with. It is also required that surveyors verify functionality as soon as possible after device pick-up.
- Acoustic device program settings:
 - o Full spectrum recording
 - o Gain: 12 decibels (dB)
 - o 16k High Filter: Off
 - o Sample Rate: 256 kilohertz (kHz)
 - o Minimum Duration: 1.5 milliseconds (ms)
 - o Maximum Duration: 50 ms
 - o Minimum Trigger Frequency: 8 kHz
 - o Trigger Level: 12 dB
 - o Trigger Window: 2 seconds (s)
 - o Maximum Length: 15 s
 - o Compression: None
 - o Recorder schedule should be set to record from 30 minutes prior to sunset to 30 minutes after sunrise for multiple nights.
- Acoustic devices must be calibrated and properly placed for deployment. Microphones must be elevated to a minimum of 3 m (10 ft), situated in an area clear of vegetation 2 m in all directions, and fully free of vegetative or other clutter from ground to sky. When possible, elevating devices/device microphones higher than the minimum height requirement can improve call quality and reduce the number of noise files being recorded. Please note that it is not acceptable to attach acoustic devices to trees or other standing structures to elevate them – they should have a standalone set-up that gives them sufficient omnidirectional air space. Microphones should be directed away from surrounding vegetation, electrical wires and transmission lines, echo-producing surfaces, and external noises. Directional microphones should be aimed to sample the majority of the flight path/zone in an upward direction. Omnidirectional microphones should be deployed on a pole in the center of the flight path/zone and oriented horizontally (a slight angle might help prevent pooling on the microphone surface and therefore reduce long-term water damage). For monitoring possible roost sites, microphones should be directed to maximize likelihood of detection.

- Acoustic surveys can be conducted any time of year as long as weather conditions meet the criteria. Although not required at this time, it has been demonstrated that conducting surveys on warm nights late in the spring can help maximize detection probabilities (Ober et al. 2016; Bailey et al. 2017). If any of the following weather conditions exist at a roost structure during acoustic sampling, note the time and duration of such conditions, and repeat the acoustic sampling effort for that night, when necessary:
 - temperatures fall below 60°F (15.5°C) during the first 5 hours of the survey period;
 - precipitation, including rain and/or fog, that exceeds 30 minutes or continues intermittently during the first 5 hours of the survey period; or
 - sustained wind speeds greater than 9 miles/hour (4 meters/second; 3 on Beaufort scale) for 30 minutes or more during the first 5 hours of the survey period (Service 2024).
- At a minimum, nightly weather conditions for survey sites should be checked using the nearest NOAA National Weather Service station and summarized in the survey reports (for the survey nights submitted).
- The following metadata is required for data submission and must be collected for every detector deployment (see [Acoustic Detector Deployment Example Data Sheet](#) for definitions):
 - GRTS Cell ID
 - Location Name
 - Latitude Decimal Degrees
 - Longitude Decimal Degrees
 - Survey Start Time/End Time
 - Detector Model
 - Detector Serial Number
 - Microphone Model
 - Microphone Orientation
 - Microphone Height
 - Distance to Nearest Clutter (meters)
 - Clutter Type
 - Broad Habitat Type
 - Land Unit Code
 - Contact

ACOUSTIC ANALYSIS:

- The process of analyzing and submitting FBB regulatory survey data to the Service incorporates the North American Bat Monitoring Program Partner Portal platform. Additional guidance and resources on how to correctly complete this process are available at <https://www.nabatmonitoring.org/fbb>.

INTERPRETATION OF RESULTS:

- DO:
 - Include all FBB call types when considering potential roosting activity. Any type or number of calls is considered presence. Any call near sunrise or sunset can indicate potential roosting.
- DO NOT:
 - Interpret few FBB calls as low or no FBB activity. These methods are designed to detect presence. Discussions of level of activity or density are not appropriate.
 - Interpret a lack of echolocation recordings near sunset or sunrise as an indication that roosting nearby is unlikely. This needs to be assessed using multiple methods.
- If results of acoustic surveys show active Florida bonneted bat roosting is likely (6b or 10b), follow-up methods such as emergence surveys, visual inspection of the roosting structures, or follow-up acoustic surveys may be recommended to avoid or minimize impacts. Please contact the [FBB Recovery Lead](#) if you have any questions regarding the definitions or using the key.

FINAL REPORTING:

- Final reporting entails completed submission of the survey into the NABat Partner Portal, as well as communication with the [FBB Recovery Lead](#).
- If there are any questions about data submission requirements, refer to the resources available at <https://www.nabatmonitoring.org/fbb>.
- The report shall also be provided to the Corps project manager assigned to the project for which the survey was conducted, and to the Service along with the project submittal via FW4FLESRegs@fws.gov. Please use a subject line for the emails: "Submittal (or Final FBB report) for [insert Project Name] FWS Project Code [insert Project Code number]" so that it can be distributed to the appropriate biologist(s).
- Reporting requirements:
 - Summary of the project site
 - Project area acreage
 - Habitat types/land cover
 - Location (county, city, etc.), coordinates (decimal degrees latitude/longitude), site location and detailed maps
 - Project description, purpose, designs
 - Summary of the methods used
 - Devices used (make, model, serial number of detector, firmware version)
 - Calibration method/device used (both before and after device deployment)
 - Automated identification software and version

- General set-up description including height of mic, etc. (see required metadata fields in section above and in data sheet)
- Photo of each final detector set-up, as well as 4 cardinal direction photos
- o Summary of survey results
 - Summary table of number of calls per species per detector deployment
 - Inventory table of EUMFLO recording files, recording timestamp, detector ID, and local sunrise/sunset times
 - Representative spectrograms of recordings that were automatically identified by software as EUMFLO but manually vetted and rejected as Florida bonneted bat recordings (these are often Noise files, TADBRA calls, or the social calls of other bat species)
 - Effects determination and explanation
 - BMPs to be incorporated
 - Include weather conditions for the days being included in the final survey and analysis
- Negative surveys are valid for 1 year after completion of the survey. A back-up of all acoustic data collected (raw acoustic files, spreadsheets, metadata, environmental reports, weather sheets, etc.) for each project must be maintained for a minimum of 1 year post project submission.

If you have comments, or suggestions on this survey protocols, please email your comments to FBBguidelines@fws.gov. These comments will be reviewed and incorporated in future revisions.

Literature Cited - Appendix B

- Bailey, A.M., H.K. Ober, A.R. Sovie, and R.A. McCleery. 2017. Impact of land use and climate on the distribution of the endangered Florida bonneted bat. *Journal of Mammalogy*. 98:1586-1593.
- Braun de Torrez, E.C., H.K. Ober, and R.A. McCleery. 2016. Use of a multi-tactic approach to locate and endangered Florida bonneted bat roost. *Southeastern Naturalist* 15: 235- 242.
- Loeb, S.C., T.J. Rodhouse, L.E. Ellison, C.L. Lausen, J.D. Reichard, K.M. Irvine, T.E. Ingersoll, J.T.H. Coleman, W.E. Thogmartin, J.R. Sauer, C.M. Francis, M.L. Bayless, T.R. Stanley, and D.H. Johnson. 2015. A plan for the North American bat monitoring program (NABat). United States Department of Agriculture. Forest Service. Research & Development, Southern Research Station. General Technical Report SRS-208.

Ober, H.K., E.C. Braun de Torrez, J.A. Gore, A.M. Bailey, J.K. Myers, K.N. Smith, and R.A. McCleery. 2016. Social organization of an endangered subtropical species, *Eumops floridanus*, the Florida bonneted bat. *Mammalia* 2016: 1-9.

U.S. Fish and Wildlife Service. 2024. Range-wide Indiana bat and Northern long-eared bat survey guidelines. <https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines>.

DRAFT

EXAMPLE DATA SHEET FOR ACOUSTIC DETECTOR DEPLOYMENTS

Date(s):					
Project:					
Site & GRTS ID:					
Name(s):					
ACOUSTIC DETECTOR DEPLOYMENTS					
Location Name					
Latitude					
Longitude					
Survey Start Time					
Survey End Time					
Detector Type					
Detector Serial Number					
Microphone Model					
Microphone Orientation					
Microphone Height					
Distance Nearest Clutter (m)					
Clutter Type					
Broad Habitat Type					
Land Unit Code					
Contact Information					
Deployment Comments					

Data Field Definitions (Acoustic Detector Deployment)

Date(s): When the survey was conducted.

Project: Descriptive and unique project titles and project numbers.

Site: Specific site of survey for listed project.

GRTS ID: GRTS ID number of the NABat grid cell where the survey was conducted.

Name(s): First and last names of observers involved in survey. Include company name if relevant.

Location Name: An official or unofficial name of the site. Provide a unique name for every acoustic detector deployment location within a project.

Latitude/Longitude: Latitudinal and longitudinal coordinates in WGS84 decimal degrees.

Survey Start/End Time: These reference the beginning and ending detector activation time. If a detector starts recording late, then start time should be listed as the date and time from the first file recorded. If a detector stops recording early, the end time should be listed as the date and time of the last file recorded. Note such incidents in the “Unusual Occurrences” metadata field. Adjust times as necessary for each detector/deployment (i.e., do not just use the same full survey time for all batches unless detectors were all active for that full time).

Detector Type: Select from the following options: BINARY ACOUSTIC AR125 | BINARY ACOUSTIC AR125-FG | BINARY ACOUSTIC AR180 | BINARY ACOUSTIC AcroBat | BINARY ACOUSTIC iFR-IV | BINARY ACOUSTIC iFR-V | PETTERSSON D1000x | PETTERSSON D240x | PETTERSSON D500x | PETTERSSON M500 | TITLEY AnaBat Express | TITLEY AnaBat SD1 | TITLEY AnaBat SD2 | TITLEY AnaBat Swift | TITLEY AnaBat Walkabout | WILDLIFE ACOUSTICS EM-Touch | WILDLIFE ACOUSTICS EM-Touch2 | WILDLIFE ACOUSTICS EM-TouchPRO | WILDLIFE ACOUSTICS EM3/EM3+ | WILDLIFE ACOUSTICS SM MICRO | WILDLIFE ACOUSTICS SM2 | WILDLIFE ACOUSTICS SM2Bat+ | WILDLIFE ACOUSTICS SM2Bat-192 | WILDLIFE ACOUSTICS SM3Bat | WILDLIFE ACOUSTICS SM4BAT | WILDLIFE ACOUSTICS SM4BAT-FS | WILDLIFE ACOUSTICS SM4BAT-ZC | WILDLIFE ACOUSTICS SMMINI-BAT | WILDLIFE ACOUSTICS SMZC

Detector Serial Number: Serial number of the detector/recording device.

Microphone Model: Leave blank if not applicable (i.e., no external microphone attachment). Select from the following options: Pettersson D500x | Pettersson M500 | TITLEY AnaBat Swift | Wildlife Acoustics SM3-U1 | Wildlife Acoustics SMM-U1 | Wildlife Acoustics SMM-U2 | Wildlife Acoustics SMX-U1 | Wildlife Acoustics SMX-US | Wildlife Acoustics SMX-UT | generic Directional | generic Internal | generic Omni-directional

Microphone Orientation: Direction in which the microphone was oriented. Select from the following options: e | n | ne | nw | s | se | sw | w | vert

Microphone Height: Height of the microphone above the ground (m).

Distance to Nearest Clutter (meters): Distance (m) between microphone and nearest clutter (for example: vegetation, buildings, or other structure).

Clutter Type: Select from the following options: Building | Other | Rock | Vegetation | Water

Broad Habitat Type: Broad habitat type surrounding device. Select from the following options: agriculture | barren land | forest-conifer | forest-deciduous | forested wetland | grassland | shrubland | urban | water | wetland

Land Unit Code: The first 4 letters of the county where the survey was conducted.

Contact information: person/entity that deployed and is responsible for the acoustic detector.

Deployment Comments: Additional notes about acoustic deployment.

Appendix C: Best Management Practices for Land Management Activities, Development Activities, and Actions within Critical Habitat

These BMPs consist of actions intended to avoid, minimize, or offset impacts to Florida bonneted bats. BMPs required to reach a “may affect, but is not likely to adversely affect” ([MANLAA](#)) determination are listed below. If the applicant is unable or does not want to incorporate the required BMPs into the project, this Consultation Key cannot be followed and further coordination and consultation with the Service is required. In these cases, formal consultation may not be required, but further evaluation of the project and discussions with the Service are needed.

Best Management Practices for Land Management Activities

The BMPs **LM1 through LM6** are required for MANLAA projects keying out to **3b** in the FBB Consultation Key (see note), no further consultation is required:

LM1. Conduct tree removal in areas with known or suspected roosting activity from November 15 to April 15. From April 16 to November 14, visual, peeping, and emergence surveys must be done prior to removal of trees 7.4 in (19 cm) dbh or greater with cavities (or snag height) at 15 ft or higher.

LM2. When feasible, roost surveys are recommended year round prior to removal of trees 7.4 inch (19 cm) dbh or greater with cavities (or snag height) at 15 ft or higher, especially for slash and longleaf pine, royal palm, and cypress.

LM3. Conduct prescribed burns in areas of known or suspected roosting activity from November 15 to April 15.

LM4. Protect known and suspected roost trees by raking and/or manually clearing vegetation around the base (150-ft (46 m) buffer) of identified trees prior to prescribed burning.

LM5. In areas of suitable FBB roosting habitat, plan to conduct only low intensity prescribed burns.

LM6. Avoid conducting frequent or sustained loud land management activities (generally above 80 decibels, such as chainsaw or heavy equipment) within 100 ft (15 m) of known or suspected roosts during the FBB breeding season (April 15 to November 15).

LM7. When possible, protect trees or snags 7.4 in (19 cm) dbh or greater with cavities (or snag height) at 15 ft or higher. These efforts may consist of avoiding removal of trees with these characteristics, raking and/or manually clearing vegetation around the base of known or potential roost trees to remove fuel prior to prescribed burning.

LM8. Forestry practices: Follow/Establish forest management efforts to maintain tree species and size class diversity to ensure long-term supply of FBB potential roost sites. Preserve large snags in open canopy when possible.

For land management activities or restoration projects that are not addressed in a current BO and cannot incorporate the BMPs above, contact the Service ([Florida Bonneted Bat Recovery Lead](#) or the Service's Environmental Review project manager) for further guidance. Note: Many land management activities are not expected to follow these BMPs (and key out to a MANLAA), nor would it be beneficial for the FBB and many other species if all management actions followed all BMPs. However, the Service is required to evaluate the need to provide take coverage for those projects that may result in take of individuals. For example, these projects could include management actions in areas with potential roost trees during peak pup season or where fire is likely to result in significant loss of potential roost trees.

Best Management Practices for Development, Construction, and Other Similar Activities

Use the table below to determine which BMPs are required for projects keying out to a [MANLAA](#) with required BMPs (7a, 8a, 10a, 11a, or 12a) in the FBB Consultation Key. Information on how each BMP is each incorporated into the project must be submitted with the project for review. In cases of multiple home or multiple (future) ownership developments, how these measures will be maintained and enforced in perpetuity must also be addressed (e.g., through deed restrictions, Homeowner or Property Owner Associations (HOA/POA), Community Development Districts (CDD), planned communications to new owners and leases). If a BMP is not relevant to the project (for example, D2, if no water or water features are present or planned), please explain why it does not apply to the project.

Project keys out to:	Required BMPs
7a	D1 through D7; see specifics regarding D1 (20%) and D6 (\$4,875 per acre)
8a or 12a	D1 through D9; see specifics regarding D1 (25%) and D6 (\$7,387 per acre)
10a	D1 through D9; see specifics regarding D1 (20%) and D6 (\$7,387 per acre)
11a	D4 and D8; incorporation of additional BMPs is encouraged

D1. Retain or restore a portion of the parcel in native contiguous vegetation. In most cases, habitat types similar to the habitat type impacted should be retained or restored. (For example, if upland habitat is impacted, then upland habitat with native vegetation should be retained.)

Projects keying out to **7a** or **10a** must retain or restore a minimum of 20% of the [project impact area](#) acreage. Projects keying out to **8a** or **12a** must retain or restore a minimum of 25% of the [project impact area](#) acreage.

D2. Buffer all bodies of water and water features by a minimum of 50 feet (15.2 m) within which there are no impacts to substrate or vegetation. In cases where artificial water bodies (i.e., stormwater ponds) are created, edges should be enhanced with native plantings (typically herbaceous wetland vegetation).

D3. Maintain natural light conditions. Avoid and minimize the use of artificial lighting and avoid permanent night-time lighting. Where lighting is necessary to meet minimum life safety requirements it must be designed to meet each of these recommendations:

- Utilize fully-shielded fixtures to restrict the amount of upward-directed light. Light sources must be downward directed and shielded so that the luminaire emits no more than

10% of its vertical output above 80 degrees from nadir. Examples of appropriate fixtures can be found in [FWC Sea Turtle Lighting Guidelines](#).

- Use the “Backlight, Uplight, Glare” (BUG) system developed by the Illuminating Engineering Society to avoid glare, excessive lighting and light trespass. The “uplight” rating should be zero, and “backlight” and “glare” ratings should be as close to zero as possible. Fixtures on edges of developed areas should have zero backlight ratings.
- Avoid broad spectrum and excessive short wavelength artificial light below 560 nanometers. Lights with less than 3000 Kelvin (K) color temperature must be used, while color temperatures of 2700 K or less are ideal. Lights with the lowest lumens possible should be used.
- Utilize shielding, louvers and baffles, dimming and other appropriate lighting controls to direct and minimize lighting when not in use.
- Implement partial-night lighting schemes to reduce the amount of artificial light used throughout the night. Motion-sensor lighting is also highly encouraged.
- Lighting must not illuminate any retained or restored vegetated areas.
- Prevent indoor artificial lighting reaching the outdoor environment. Use fixed window screens, blinds or tinting on fixed windows and skylights to contain artificial light inside buildings.

D4. Avoid engineering designs that encourage bats from using roofs, buildings, or structures. For example, minimize and seal any gaps, cracks, holes in roofing, siding, soffits during construction.

D5. Avoid widespread use/application of pesticides and insecticides (e.g., mosquito control, agricultural pest control). Chemicals should not be used or applied within and adjacent to areas where Florida bonneted bats are known or expected to forage or roost.

D6. Use the [Florida Bonneted Bat Conservation Fund](#) to offset impacts to roosting and foraging habitat.

Donate a recommended minimum of \$7,387 per acre (based on 2023 agricultural land values (USDA 2023)) of foraging or roosting habitat impacted (projects keying out to **8a, 10a, or 12a**), and \$4,875 per acre for projects keying out to **7a**. Donations are not required for temporary impacts to foraging habitat.

D7. Retain trees and snags that could provide current or future roosting habitat. This includes native [potential roost trees](#) or live royal palm, cypress, longleaf or slash pine trees of various sizes or dead or dying native trees with cavities, hollows, crevices, and loose bark. At minimum, 50% of the number of trees of these species (i.e., royal palm, cypress, longleaf or slash pine) present or 50% of the acreage of trees of these species present must be retained.

D8. Conduct roost surveys of potential roost trees prior to removal; necessary removals should occur November 15 to April 15. If potential roost trees or structures need to be removed, trees, snags, and structures need to be visually surveyed within 30 days prior to removal. Any cavities must be peeped with a “treetop” camera, and any cavities that cannot be reached or fully viewed by camera should be surveyed at emergence. If evidence of use by any bat species is observed, discontinue tree removal efforts in that area and coordinate with the Service on how to proceed. Tree, snag, or structure removals should not occur from April 15 to August 15; ideally removal should occur November 15 to April 15.

D9. When using heavy equipment, establish a minimum 150 foot (46 m) buffer around retained known or potential roosts.

Again, if the applicant is unable or does not want to incorporate the required BMPs into the project, this Consultation Key cannot be followed and further coordination and consultation with the Service is required. Formal consultation may not be required, but further evaluation of the project and discussions with the Service are needed.

Best Management Practices for Land Management Activities within FBB CH

BMPs **LM5**, **LM7**, and **LM8** are required for MANLAA projects keying out to **2b** in the FBB CH Consultation Key. No further consultation is required.

Best Management Practices for development related impacts within FBB CH

BMPs **D1 through D3, D5, D6, and D7** are required for MANLAA projects keying out to **3a** in the FBB CH Consultation Key, and information on how they are incorporated into the project must be submitted with the project for review.

Literature Cited - Appendix C

United States Department of Agriculture (USDA). 2023. Land Values 2023 Summary (August 2023). Released August 4, 2023, by the National Agricultural Statistics Service (NASS), Agricultural Statistics Board. Washington, D.C.

Appendix D: Definitions

DEFINITIONS

Action area: All areas affected directly or indirectly by the project/action, and not merely the immediate area involved in the action. The action area may include areas where, for example, effects of increased noise, artificial lighting, changes in hydrology or water quality, or increased traffic occur.

Active Florida bonneted bat roosting: The appropriate conclusion if ANY of the following occurs: (a) FBB calls are recorded within 1½ hours after sunset or 1½ hours before sunrise; (b) emergence and/or social calls are recorded; (c) human observers see (or hear) FBBs flying from or to potential roosts just after sunset (e.g., within 1½ hour of) or just before sunrise; (d) human observers see and identify FBBs within a natural roost or artificial roost; and/or (e) other bat sign (e.g., guano, staining, etc.) is found that is identified to be FBB through additional follow-up.

Best Management Practices (BMPs): Avoidance and minimization measures designed to be incorporated into the project's design such that take is not expected to occur as a result of the proposed project (i.e., not result in harassment, harm, injury, or death), after which a MANLAA determination may be possible. These recommendations for actions to conserve roosting and foraging habitat are implemented before, during, and after proposed development, land use changes, and land management activities. BMPs may also be used to offset impacts of a project with a LAA determination.

Florida bonneted bat acoustic activity: The appropriate conclusion if a valid acoustic survey yields at least one call file with FBB identified manually or via auto-ID with appropriate regional or species suite selected, with manual vetting from a reputable acoustic reviewer agrees that the auto-ID is correct.

Florida bonneted bat assumed presence polygons: The polygons indicate areas where repeated acoustic surveys have yielded detections of FBB. Project proponents may choose to assume presence of FBB if the project is within one of the polygons. Presence of FBB can also be assumed, if desired, based on potential foraging habitat and/or suitable roosting habitat, or other detection records (e.g., FBB capture, telemetry data).

Florida Bonneted Bat Consultation Area: The Florida Bonneted Bat Consultation Area ([Figure 1](#)) represents the general range of the species. The Consultation Area represents the area within which consideration should be given to potential effects to Florida bonneted bats from proposed projects or actions. Coordination and consultation with the Service helps to determine whether proposed actions and activities may affect listed species. This Consultation Area defines the area where proposed actions and activities may affect the Florida bonneted bat.

Florida bonneted bat foraging habitat: This species forages in a variety of habitats including open fresh water, permanent or seasonal freshwater wetlands, wetland and upland forests,

wetland and upland shrub, and agricultural lands. In urban and residential areas, drinking water, prey base, and suitable foraging conditions (*i.e.*, open habitat structure) can be found in relatively small patches of natural or semi-natural habitat. A project area existing within the consultation area lacking potential foraging habitat (2b) would be unlikely, therefore, please consider contacting the Service to discuss this determination if it appears to apply to your project.

Florida bonneted bat roosting habitat: This species roosts in live or dead trees and tree snags. Trees of any species 34 ft (10.4 m) or taller, snags 28 ft (8.5 m) or taller, with dbh 7.4 in (19 cm) or greater are potential FBB roosting habitat. Artificial structures 15 ft (4.5 m) in height and greater that may mimic natural roosting conditions (*e.g.*, bat houses, utility poles, buildings over one story high), situated in natural or semi-natural habitats should also be considered potential FBB roosting habitat. Such buildings with chimneys, gaps in soffits, gaps along gutters, or other structural gaps or crevices (outward entrance approximately 1 inch (2.5 centimeters) in size or greater can be potential roosting habitat. Bridges and culverts 15 ft and higher are also expected to provide roosting habitat, based upon the species' morphology and behavior (Keeley and Tuttle 1999).

LAA/LAA CH: May Affect, and is Likely to Adversely Affect. The appropriate conclusion if any adverse effect to listed species (/on designated critical habitat units) may occur as a direct or indirect result of the proposed action or its interrelated or interdependent actions, and the effect is not: discountable, insignificant, or beneficial (see definition of "is not likely to adversely affect"). In the event the overall effect of the proposed action is beneficial to the listed species (/on designated critical habitat units), but also is likely to cause some adverse effects, then the proposed action is "likely to adversely affect" the listed species (/on designated critical habitat units). If incidental take is anticipated to occur as a result of the proposed action, an "is likely to adversely affect" determination should be made. An "is likely to adversely affect" determination requires the initiation of formal section 7 consultation.

In some scenarios, applicants may be able to design projects that would not result in LAA. For example, if appropriate avoidance measures (*e.g.*, BMPs) could be incorporated into the project's design such that take is not expected to occur as a result of the proposed project (*i.e.*, not result in harassment leading to harm, harm, injury, or death), then a MANLAA determination may be possible. When take cannot be avoided, Applicants and Action Agencies are encouraged to incorporate compensation to offset adverse effects. The Service can assist the Applicant in identifying appropriate compensation (*e.g.*, conservation on site, conservation off-site, contributions to the Service's FBB conservation fund).

MANLAA/ MANLAA CH: May Affect, but is Not Likely to Adversely Affect. The appropriate conclusion when effects on listed species (/on designated critical habitat units) are expected to be discountable, insignificant, or completely beneficial. Beneficial effects are contemporaneous positive effects without any adverse effects to the species (/on designated critical habitat units). Insignificant effects relate to the size of the impact and should never reach the scale where take occurs in a MANLAA. Discountable effects are those extremely unlikely to occur. Based on best judgment, a person would not: (1) be able to meaningfully measure, detect, or evaluate insignificant effects; or (2) expect discountable effects to occur. To use these

Guidelines and Consultation Key applicants must incorporate the required BMPs to reach a MANLAA determination.

Detailed information regarding how required BMPs are incorporated into your project designs must be included in your project submittal. If all required BMPs cannot be incorporated into project, further coordination and consultation with the Service is required.

No Effect/No Effect to CH: The appropriate conclusion when the action agency determines its proposed action will not affect listed species or designated critical habitat. The FESFO defines No Effect as projects with no impacts, positive or negative, to federally-listed species or designated critical habitat from the proposed action. This determination is usually not appropriate if suitable habitat, designated critical habitat, or species are present in the action area.

Potential roost tree: Trees of any species 34 ft (10.4 m) or taller, snags 28 ft (8.5 m) or taller, with dbh 7.4 in (19 cm) dbh or greater are potential FBB roost trees.

Project impact area: This is the area within the project area where any temporary or permanent impacts to foraging or roosting habitat are planned or will occur.

Take: to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct. **Harm** is further defined by FWS to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. **Harass** is defined by FWS as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering.

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

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

The Key is as follows:

- A. Project within 0.76 km (0.47 mile)² of an active colony site³ "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”.
- 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 sitego to D
- Project impacts to SFH within the CFA of a colony sitego to E
- D. Project impacts to SFH have been avoided and minimized to the extent practicable; compensation (Service approved mitigation bank or as provided in accordance with Mitigation Rule 33 CFR Part 332) for unavoidable impacts is proposed in accordance with the CWA section 404(b)(1) guidelines; and habitat compensation replaces the foraging value matching the hydroperiod⁷ 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 guidance⁸..... *NLAA*¹”
- Project not as above..... “may affect⁴”
- E. Project provides SFH compensation in accordance with the CWA section 404(b)(1) guidelines and is not contrary to the HMG; habitat compensation is within the appropriate CFA or within the service area of a Service-approved mitigation bank; and habitat compensation replaces foraging value, consisting of wetland enhancement or restoration matching the hydroperiod⁷ of the wetlands affected, and provides foraging value similar

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

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

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

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

Project does not satisfy these elements "may affect"⁴

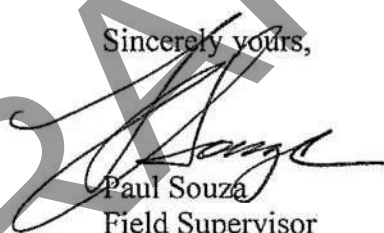
This Key does not apply to Comprehensive Everglades Restoration Plan projects, as they will require project-specific consultations with the Service.

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)



Appendix G: Listed Species Habitat

DRAFT





 Florida Sand Skink and Blue-Tailed (Bluetail) Mole Skink Suitable Habitat

 Central Polk Parkway East Study Area

 County Boundaries

Source: The Florida Geographic Data Library (FGDL)
Geospatial Data Clearinghouse, October 2023

Sheet: 1 of 6



Central Polk Parkway East PD&E Study
FM Number: 451419-1

0 400 800 1,600
US Feet





 Florida Sand Skink and Blue-Tailed (Bluetail) Mole Skink Suitable Habitat

 Central Polk Parkway East Study Area

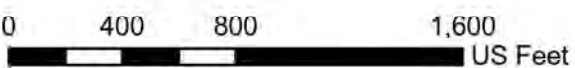
 County Boundaries

Source: The Florida Geographic Data Library (FGDL)
Geospatial Data Clearinghouse, October 2023

Sheet: 2 of 6



Central Polk Parkway East PD&E Study
FM Number: 451419-1





 Florida Sand Skink and Blue-Tailed (Bluetail) Mole Skink Suitable Habitat

 Central Polk Parkway East Study Area

 County Boundaries

Source: The Florida Geographic Data Library (FGDL)
Geospatial Data Clearinghouse, October 2023

Sheet: 3 of 6



Central Polk Parkway East PD&E Study
FM Number: 451419-1

0 400 800 1,600
US Feet





 Florida Sand Skink and Blue-Tailed (Bluetail) Mole Skink Suitable Habitat

 Central Polk Parkway East Study Area

 County Boundaries

Source: The Florida Geographic Data Library (FGDL)
Geospatial Data Clearinghouse, October 2023

Sheet: 4 of 6



Central Polk Parkway East PD&E Study
FM Number: 451419-1





 Florida Sand Skink and Blue-Tailed (Bluetail) Mole Skink Suitable Habitat

 Central Polk Parkway East Study Area

 County Boundaries

Source: The Florida Geographic Data Library (FGDL)
Geospatial Data Clearinghouse, October 2023

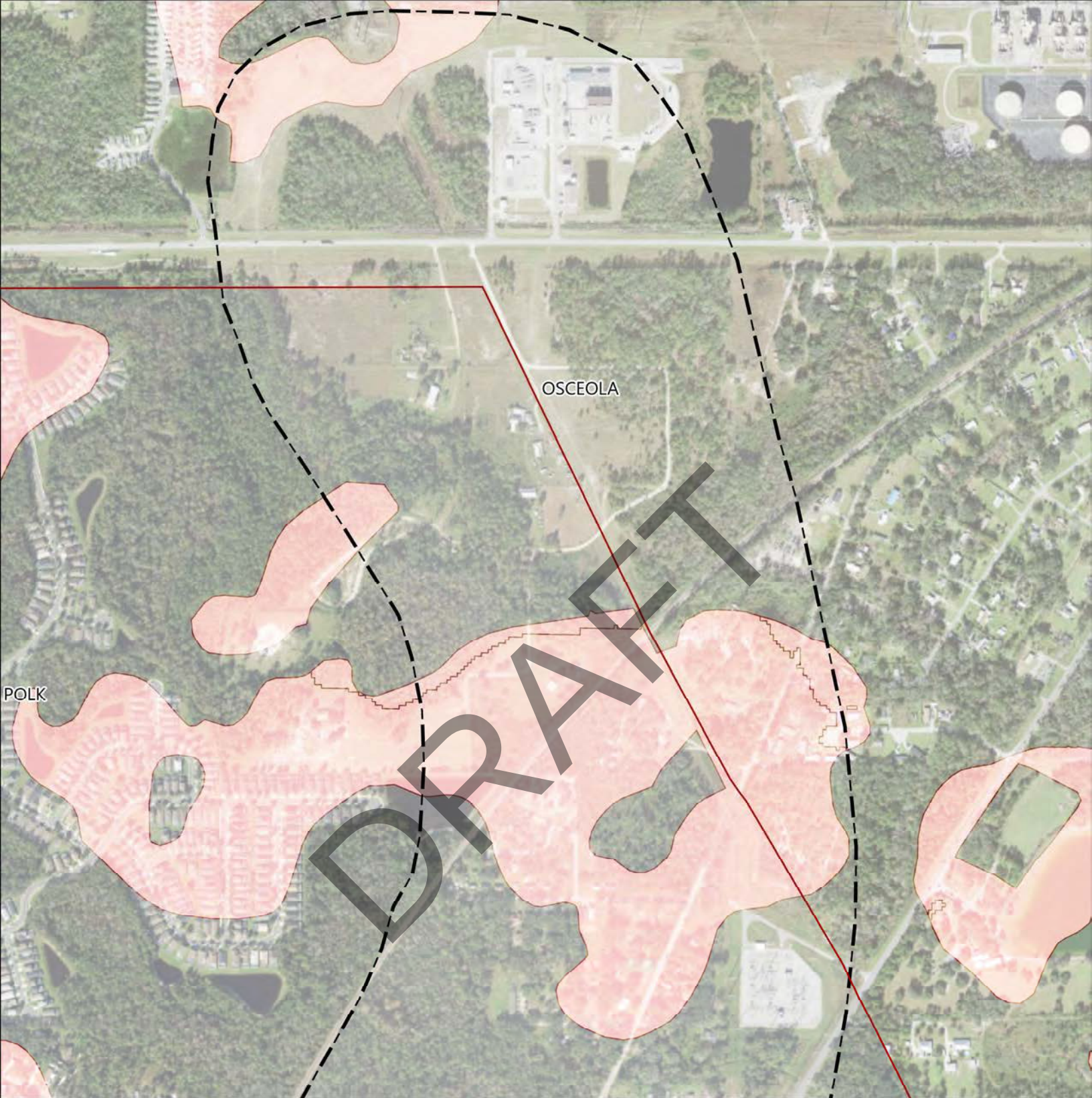
Sheet: 5 of 6



Central Polk Parkway East PD&E Study
FM Number: 451419-1

0 400 800 1,600
US Feet





 Florida Sand Skink and Blue-Tailed (Bluetail) Mole Skink Suitable Habitat

 Central Polk Parkway East Study Area

 County Boundaries

Source: The Florida Geographic Data Library (FGDL)
Geospatial Data Clearinghouse, October 2023

Sheet: 6 of 6



Central Polk Parkway East PD&E Study
FM Number: 451419-1

0 400 800 1,600
US Feet





Appendix H: UMAM Data Sheets

DRAFT



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

Site/Project Name Central Polk Parkway East PD&E Study FPID: 451419-1-22-01		Application Number		Assessment Area Name or Number W46, W51, W63	
FLUCCs code 610 - Wetland Hardwood Forests		Further classification (optional)		Impact Type Direct Impact	
Assessment Area Size Acres					
Basin/Watershed Name/Number HUC 030901010601		Affected Waterbody (Class) Class III		Special Classification (i.e.OFW, AP, other local/state/federal designation of importance) None	
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands					
Forested systems that may be connected to other systems. Systems are surrounded by residential and transportation development.					
Assessment area description					
Assessment areas are forested systems dominated by red maple (<i>Acer rubrum</i>), Magnolia (<i>Magnolia grandiflora</i>), sweet gum (<i>Liquidambar styraciflua</i>), dahoon holly (<i>Ilex cassine</i>), wax myrtle (<i>Morella cerifera</i>), and Virginia chain fern (<i>Woodwardia virginiana</i>). These systems had standing water at the time of the assessment with poor water quality due to adjacent land uses.					
Significant Nearby Features				Uniqueness (considering the relative rarity in relation to the regional landscape.)	
				Wetlands have low nuisance exotic content and offer natural habitat	
Functions Filtering of runoff, sediments or pollutants, potential foraging, roosting or nesting habitat for various passerines, habitat for small mammals, reptiles, and amphibians.				Mitigation for previous permit/other historic use	
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)	
Small amounts of foraging habitat for wading birds, possibly Florida bonneted bat (<i>Eumops floridanus</i>), freshwater fish species, fresh water turtles.				Little blue heron (<i>Egretta caerulea</i>) (T), low intensity foraging Tricolor heron (<i>Egretta canadensis</i>) (T), low intensity foraging Roseate spoonbill (<i>Platalea ajaja</i>) (T), low intensity foraging Woodstork (<i>Mycteria americana</i>) (FT), low intensity foraging	
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):					
N/A					
Additional relevant factors:					
Assessment conducted by: Sydney Hauser/Ryan Ellis/Ryan DeSimone				Assessment date(s): 01/17/2025, 01/27/2025	

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

Site/Project Name: Central Polk Parkway East PD&E Study FPID: 451419-1-22-01	Application Number:	Assessment Area Name or Number: W46, W51, W63
Impact or Mitigation: Impact	Assessment Conducted by: Sydney Hauser/Ryan Ellis/Ryan DeSimone	Assessment Date: 1/17/2025, 1/27/2025

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

Enter Notes below (do NOT score each subcategory individually)

.500(6)(a) Location and Landscape Support		a. Quality and quantity of habitat support outside of AA.	Moderate
		b. Invasive plant species.	Torpedo grass
		c. Wildlife access to and from AA (proximity and barriers).	Wildlife is impeded by US17/92 to the east but connected with other natural areas north and south
		d. Downstream benefits provided to fish and wildlife.	Moderate
		e. Adverse impacts to wildlife in AA from land uses outside of AA.	Some adverse impact from rail road and roadway
		f. Hydrologic connectivity (impediments and flow restrictions).	Wetlands connect south out of study area.
Current	With Impact	g. Dependency of downstream habitats on quantity or quality of discharges.	Moderate
		h. Protection of wetland functions provided by uplands (upland AAs only).	Moderate
5	0	Additional Notes: Wildlife access and usage may be restricted by roadways, railroads and other development; though species can move along the undeveloped areas.	

.500(6)(b) Water Environment (n/a for uplands)		a. Appropriateness of water levels and flows.	Typical
		b. Reliability of water level indicators.	Typical
		c. Appropriateness of soil moisture.	Appropriate
		d. Flow rates /points of discharge.	Typical
		e. Fire frequency/severity.	Low/ none
		f. Type of vegetation.	Moderate amounts of inappropriate species
		g. Hydrologic stress on vegetation.	None observed
		h. Use by animals with hydrologic requirements.	None observed
		i. Plant community composition associated with water quality (i.e., plants tolerant of poor WQ).	Appropriate
		j. Water quality of standing water by observation (i.e., discoloration, turbidity).	Turbidity observed in some places
Current	With Impact	k. Water quality data for the type of community.	Appropriate
		l. Water depth, wave energy, and currents.	0-6 inches
6	0	Additional Notes: Water levels within the assessment areas is typical for the type of wetland system. Wetlands receive run off from surrounding areas but undeveloped areas also create a natural buffer.	

.500(6)(c) Community Structure		I. Appropriate/desirable species	Some inappropriate species present
		II. Invasive/exotic plant species	Found in shrub and herbaceous stratum but not dominant
		III. Regeneration/recruitment	Typical
		IV. Age, size distribution.	Typical
		V. Snags, dens, cavity, etc.	None observed
		VI. Plants' condition.	Typical
		VII. Land management practices.	None observed
		VIII. Topographic features (refugia, channels, hummocks).	N/a
		IX. Submerged vegetation (only score if present).	N/a
		X. Upland assessment area	N/a
Current	With Impact	Additional Notes: Assessment areas consisted of mostly native species.	
6	0		

Raw Score = Sum of above scores/30 (if uplands, divide by 20)	
Current	With Impact
0.57	0

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

Impact Delta (ID)	
Current - w/Impact	0.57

NOTE: If impact is proposed to be mitigated at a mitigation bank that was assessed using UMAM, then the credits required for mitigation is equal to Functional Loss (FL). If impact mitigation is proposed at a mitigation bank that was not assessed using UMAM, then UMAM cannot be used to assess impacts; use the assessment method of the mitigation bank.

Additional Notes:

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

Site/Project Name Central Polk Parkway East PD&E Study FPID: 451419-1-22-01		Application Number		Assessment Area Name or Number W46, W49, W51, W52, W55, W57, W61, W63	
FLUCCs code 615 Streams and Lake Swamps (Bottomland)		Further classification (optional)		Impact Type Direct Impact	Assessment Area Size Acres
Basin/Watershed Name/Number HUC 030901010601	Affected Waterbody (Class) Class III		Special Classification (i.e.OFW, AP, other local/state/federal designation of importance) None		
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands					
The assessment area are systems that are mostly surrounded by residential development some with nearby on-going construction. Hydrological alterations including water control structures to other surface waters are located throughout.					
Assessment area description					
The vegetative community is dominated by native trees such as swamp bay and red maple with under story of elderberry. Willow and primrose willow are dominant near the culvert.					
Significant Nearby Features			Uniqueness (considering the relative rarity in relation to the regional landscape.)		
Functions Filtering of runoff, sediments or pollutants, potential foraging, roosting or nesting habitat for various passerines, habitat for small mammals, reptiles, and amphibians.			Mitigation for previous permit/other historic use		
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)		
Small amounts of roosting habitat for wading birds, possibly Florida bonneted bat (<i>Eumops floridanus</i>), pacerine birds			Little blue heron (<i>Egretta caerulea</i>) (T), low intensity foraging Tricolor heron (<i>Egretta canadensis</i>) (T), low intensity foraging Roseate spoonbill (<i>Platalea ajaja</i>) (T), low intensity foraging Woodstork (<i>Mycteria americana</i>) (FT), low intensity foraging		
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):					
Additional relevant factors:					
Assessment conducted by: Sydney Hauser/Ryan Ellis/Ryan DeSimone			Assessment date(s): 01/27/25		

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

Site/Project Name: Central Polk Parkway East PD&E Study FPID: 451419-1-22-01	Application Number:	Assessment Area Name or Number: W46, W49, W51, W52, W55, W57, W61, W63
Impact or Mitigation: Impact	Assessment Conducted by: Sydney Hauser/Ryan Ellis/Ryan DeSimone	Assessment Date: 01/27/25

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

Enter Notes below (do NOT score each subcategory individually)

.500(6)(a) Location and Landscape Support		a. Quality and quantity of habitat support outside of AA.	Moderate
		b. Invasive plant species.	Peruvian primrose willow
		c. Wildlife access to and from AA (proximity and barriers).	Wildlife is impeded by US17/92 and residential development
		d. Downstream benefits provided to fish and wildlife.	Moderate
		e. Adverse impacts to wildlife in AA from land uses outside of AA.	Medium density development impacts surrounding wildlife utilization with some severity
		f. Hydrologic connectivity (impediments and flow restrictions).	Wetlands connect east of site at some locations but are generally restricted by development
Current	With Impact	g. Dependency of downstream habitats on quantity or quality of discharges.	Moderate
		h. Protection of wetland functions provided by uplands (upland AAs only).	Low
4	0	Additional Notes: Wildlife access is inhibited by the road and nearby development.	

.500(6)(b) Water Environment (n/a for uplands)		a. Appropriateness of water levels and flows.	Typical
		b. Reliability of water level indicators.	Typical
		c. Appropriateness of soil moisture.	Appropriate
		d. Flow rates /points of discharge.	Typical
		e. Fire frequency/severity.	Low/ none
		f. Type of vegetation.	Moderate amounts of inappropriate species
		g. Hydrologic stress on vegetation.	None observed
		h. Use by animals with hydrologic requirements.	None observed
		i. Plant community composition associated with water quality (i.e., plants tolerant of poor WQ).	Appropriate
		j. Water quality of standing water by observation (i.e., discoloration, turbidity).	Turbidity observed in some places
Current	With Impact	k. Water quality data for the type of community.	Appropriate
		l. Water depth, wave energy, and currents.	0-6 inches
3	0	Additional Notes: Water levels within the assessment areas is typical for the type of system. Wetland receives runoff and turbidity was observed from nearby development.	

.500(6)(c) Community Structure		I. Appropriate/desirable species	Some inappropriate species present
		II. Invasive/exotic plant species	Present in shrub and herbaceous stratum
		III. Regeneration/recruitment	Typical
		IV. Age, size distribution.	Typical
		V. Snags, dens, cavity, etc.	None observed
		VI. Plants' condition.	Typical
		VII. Land management practices.	None observed
		VIII. Topographic features (refugia, channels, hummocks).	N/a
		IX. Submerged vegetation (only score if present).	N/a
		X. Upland assessment area	N/a
Current	With Impact	Additional Notes: Habitat mostly native tree species	
5	0		

Raw Score = Sum of above scores/30 (if uplands, divide by 20)	
Current	With Impact
0.40	0

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

Impact Delta (ID)	
Current - w/Impact	0.40

NOTE: If impact is proposed to be mitigated at a mitigation bank that was assessed using UMAM, then the credits required for mitigation is equal to Functional Loss (FL). If impact mitigation is proposed at a mitigation bank that was not assessed using UMAM, then UMAM cannot be used to assess impacts; use the assessment method of the mitigation bank.

Additional Notes:

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

Site/Project Name Central Polk Parkway East PD&E Study FPID: 451419-1-22-01		Application Number		Assessment Area Name or Number W3, W9, W16, W35	
FLUCCs code 630 Wetland Forested Mixed		Further classification (optional)		Impact Type Direct Impact	Assessment Area Size Acres
Basin/Watershed Name/Number HUC 030901010601	Affected Waterbody (Class) Class III		Special Classification (i.e.OFW, AP, other local/state/federal designation of importance) None		
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands					
Assessment areas are forested systems bordered by new construction, roadways, and natural, undeveloped areas. Standing water and evidence of dumping were present. Some of these systems are connected via roadside ditches/swales.					
Assessment area description The systems are dominated by red maple, swamp bay, dahoon holly, slash pine, and swamp fern.					
Significant Nearby Features			Uniqueness (considering the relative rarity in relation to the regional landscape.)		
Functions Filtering of runoff, sediments or pollutants, potential foraging, roosting or nesting habitat for various passerines, habitat for small mammals, reptiles, and amphibians.			Mitigation for previous permit/other historic use		
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) Small amounts of roosting habitat for wading birds, possibly Florida bonneted bat (<i>Eumops floridanus</i>) and pacerine birds			Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) Little blue heron (<i>Egretta caerulea</i>) (T), low intensity foraging Tricolor heron (<i>Egretta canadensis</i>) (T), low intensity foraging Roseate spoonbill (<i>Platalea ajaja</i>) (T), low intensity foraging Woodstork (<i>Mycteria americana</i>) (FT), low intensity foraging		
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):					
Additional relevant factors:					
Assessment conducted by: Sydney Hauser/Ryan Ellis/Ryan DeSimone			Assessment date(s): 1/17/2025, 1/27/2025		

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

Site/Project Name: Central Polk Parkway East PD&E Study FPID: 451419-1-22-01	Application Number:	Assessment Area Name or Number: W3, W9, W16, W35
Impact or Mitigation: Impact	Assessment Conducted by: Sydney Hauser/Ryan Ellis/Ryan DeSimone	Assessment Date: 1/17/2025, 1/27/2025

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

Enter Notes below (do NOT score each subcategory individually)

.500(6)(a) Location and Landscape Support		a. Quality and quantity of habitat support outside of AA.	Moderate
		b. Invasive plant species.	Peruvian primrose willow
		c. Wildlife access to and from AA (proximity and barriers).	Wildlife is impeded by US17/92 and residential development
		d. Downstream benefits provided to fish and wildlife.	Moderate
		e. Adverse impacts to wildlife in AA from land uses outside of AA.	Medium density development impacts surrounding wildlife utilization with some severity
		f. Hydrologic connectivity (impediments and flow restrictions).	Wetlands connect east of site at some locations but are generally restricted by development
Current	With Impact	g. Dependency of downstream habitats on quantity or quality of discharges.	Moderate
		h. Protection of wetland functions provided by uplands (upland AAs only).	Low
		Additional Notes: Wildlife access is inhibited by roadways and surrounding development.	
5	0		

.500(6)(b) Water Environment (n/a for uplands)		a. Appropriateness of water levels and flows.	Typical
		b. Reliability of water level indicators.	Typical
		c. Appropriateness of soil moisture.	Appropriate
		d. Flow rates /points of discharge.	Typical
		e. Fire frequency/severity.	Low/ none
		f. Type of vegetation.	Moderate amounts of inappropriate species
		g. Hydrologic stress on vegetation.	None observed
		h. Use by animals with hydrologic requirements.	None observed
		i. Plant community composition associated with water quality (i.e., plants tolerant of poor WQ).	Appropriate
		j. Water quality of standing water by observation (i.e., discoloration, turbidity).	Turbidity observed in some places
Current	With Impact	k. Water quality data for the type of community.	Appropriate
		l. Water depth, wave energy, and currents.	0-6 inches
		Additional Notes: Water levels within the assessment areas is typical for the type of system. The water in systems were heavily impacted by surface water runoff from the road.	
6	0		

.500(6)(c) Community Structure		I. Appropriate/desirable species	Some inappropriate species present
		II. Invasive/exotic plant species	Present in shrub stratum
		III. Regeneration/recruitment	Typical
		IV. Age, size distribution.	Typical
		V. Snags, dens, cavity, etc.	None observed
		VI. Plants' condition.	Typical
		VII. Land management practices.	None observed
		VIII. Topographic features (refugia, channels, hummocks).	N/a
		IX. Submerged vegetation (only score if present).	N/a
		X. Upland assessment area	N/a
Current	With Impact	Additional Notes: Habitat mostly native tree species with signs of tree stress and escaped landscape plants in some zones.	
6	0		

Raw Score = Sum of above scores/30 (if uplands, divide by 20)	
Current	With Impact
0.57	0

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

Impact Delta (ID)	
Current - w/Impact	0.57

NOTE: If impact is proposed to be mitigated at a mitigation bank that was assessed using UMAM, then the credits required for mitigation is equal to Functional Loss (FL). If impact mitigation is proposed at a mitigation bank that was not assessed using UMAM, then UMAM cannot be used to assess impacts; use the assessment method of the mitigation bank.

Additional Notes:

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

Site/Project Name Central Polk Parkway East PD&E Study FPID: 451419-1-22-01		Application Number		Assessment Area Name or Number W24, W37, W45, W48, W50, W53, W54, W62	
FLUCCs code 640 Vegetated Non-Forested Wetlands		Further classification (optional)		Impact Type Direct Impact	Assessment Area Size Acres
Basin/Watershed Name/Number HUC 030901010601	Affected Waterbody (Class) Class III		Special Classification (i.e.OFW, AP, other local/state/federal designation of importance) None		
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands					
Assessment areas are mostly surrounded by natural areas and is well buffered from disturbance by neighboring land uses. These are mostly large interconnected systems to wetlands and other surface waters.					
Assessment area description Assessment areas are vegetated non-forested wetlands that are surrounded by undeveloped lands and interconnected wetlands. The sytem is dominated by low-lying seasonably flooded basins and meadows typically containing sawgrass or cattail.					
Significant Nearby Features None			Uniqueness (considering the relative rarity in relation to the regional landscape.) Herbaceous and open water wetlands are similar throughout the project area		
Functions Filtering of runoff, sediments or pollutants, potential foraging, roosting or nesting habitat for various passerines, habitat for small mammals, reptiles, and amphibians.			Mitigation for previous permit/other historic use		
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) Small amounts of foraging habitat for wading birds, possibly Florida bonneted bat (<i>Eumops floridanus</i>), freshwater fish species, fresh water turtles.			Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) Little blue heron (<i>Egretta caerulea</i>) (T), low intensity foraging Tricolor heron (<i>Egretta canadensis</i>) (T), low intensity foraging Roseate spoonbill (<i>Platalea ajaja</i>) (T), low intensity foraging Woodstork (<i>Mycteria americana</i>) (FT), low intensity foraging		
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):					
Additional relevant factors:					
Assessment conducted by: Ryan DeSimone			Assessment date(s): 01/17/25		

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

Site/Project Name: Central Polk Parkway East PD&E Study FPID: 451419-1-22-01	Application Number:	Assessment Area Name or Number: W24, W37, W45, W48, W50, W53, W54, W62
Impact or Mitigation: Impact	Assessment Conducted by: Ryan DeSimone	Assessment Date: 01/17/25

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

Enter Notes below (do NOT score each subcategory individually)

.500(6)(a) Location and Landscape Support		a. Quality and quantity of habitat support outside of AA.	Moderate
		b. Invasive plant species.	Torpedo grass
		c. Wildlife access to and from AA (proximity and barriers).	Wildlife is impeded by US17/92 to the east but connected with other natural areas north and south
		d. Downstream benefits provided to fish and wildlife.	Moderate
		e. Adverse impacts to wildlife in AA from land uses outside of AA.	Some adverse impact from rail road and roadway
		f. Hydrologic connectivity (impediments and flow restrictions).	Wetlands connect north west and out of study area.
		Current	With Impact
		h. Protection of wetland functions provided by uplands (upland AAs only).	Moderate
6	0	Additional Notes: Wildlife access and usage may be restricted by US17/92 (high traffic road); though species can move along the undeveloped areas.	

.500(6)(b) Water Environment (n/a for uplands)		a. Appropriateness of water levels and flows.	Typical
		b. Reliability of water level indicators.	Typical
		c. Appropriateness of soil moisture.	Appropriate
		d. Flow rates /points of discharge.	Typical
		e. Fire frequency/severity.	Low/ none
		f. Type of vegetation.	Moderate amounts of inappropriate species
		g. Hydrologic stress on vegetation.	None observed
		h. Use by animals with hydrologic requirements.	None observed
		i. Plant community composition associated with water quality (i.e., plants tolerant of poor WQ).	Appropriate
		j. Water quality of standing water by observation (i.e., discoloration, turbidity).	Turbidity observed in some places
Current	With Impact	k. Water quality data for the type of community.	Appropriate
6	0	l. Water depth, wave energy, and currents.	0-6 inches
		Additional Notes: Water levels within the assessment areas is typical for the type of wetland system. Wetlands receive run off from surrounding undeveloped areas creating a natural buffer to wetland.	

.500(6)(c) Community Structure		I. Appropriate/desirable species	Some inappropriate species present
		II. Invasive/exotic plant species	Minimal in shrub and herbaceous stratum
		III. Regeneration/recruitment	Typical
		IV. Age, size distribution.	Typical
		V. Snags, dens, cavity, etc.	None observed
		VI. Plants' condition.	Typical
		VII. Land management practices.	None observed
		VIII. Topographic features (refugia, channels, hummocks).	N/a
		IX. Submerged vegetation (only score if present).	N/a
		X. Upland assessment area	N/a
Current	With Impact	Additional Notes: Assessment areas consisted of mostly native species such as nymphaea, nuphar, and lemna.	
4	0		

Raw Score = Sum of above scores/30 (if uplands, divide by 20)	
Current	With Impact
0.53	0

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

Impact Delta (ID)	
Current - w/Impact	0.53

NOTE: If impact is proposed to be mitigated at a mitigation bank that was assessed using UMAM, then the credits required for mitigation is equal to Functional Loss (FL). If impact mitigation is proposed at a mitigation bank that was not assessed using UMAM, then UMAM cannot be used to assess impacts; use the assessment method of the mitigation bank.

Additional Notes:

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

Site/Project Name Central Polk Parkway East PD&E Study FPID: 451419-1-22-01		Application Number		Assessment Area Name or Number W2, W4, W11, W21, W23, W24, W25, W27, W36, W37, W41, W45, W47, W62, W64, W66	
FLUCCs code 641 Freshwater marshes		Further classification (optional)		Impact Type Direct Impact	
Assessment Area Size Acres					
Basin/Watershed Name/Number HUC 030901010601		Affected Waterbody (Class) Class III		Special Classification (i.e.OFW, AP, other local/state/federal designation of importance) None	
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands					
The assessment areas are herbaceous freshwater marsh systems, mostly connected to wetlands and other surface waters through hydrological alterations such as water control structures, ditches, and swales.					
Assessment area description					
Assessment areas are freshwater marshes located throughout the cooridor. Assessment area consisted of mostly native species but with moderate density invasive plant species. Hydrological alterations are present in the form of water control structures, ditches, and swales.					
Significant Nearby Features				Uniqueness (considering the relative rarity in relation to the regional landscape.)	
Functions Filtering of runoff, sediments or pollutants, potential foraging, roosting or nesting habitat for various passerines, habitat for small mammals, reptiles, and amphibians.				Mitigation for previous permit/other historic use	
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)	
Small amounts of forgaging habitat for wading birds, possibly Florida bonneted bat (<i>Eumops floridanus</i>), freshwater fish species, fresh water turtles.				Little blue heron (<i>Egretta caerulea</i>) (T), low intensity foraging Tricolor heron (<i>Egretta canadensis</i>) (T), low intensity foraging Roseate spoonbill (<i>Platalea ajaja</i>) (T), low intensity foraging Woodstork (<i>Mycteria americana</i>) (FT), low intensity foraging	
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):					
N/A					
Additional relevant factors:					
Assessment conducted by: Sydney Hauser/Ryan Ellis/Ryan DeSimone				Assessment date(s): 1/17/2025, 1/27/2025	

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

Site/Project Name: Central Polk Parkway East PD&E Study FPID: 451419-1-22-01	Application Number:	Assessment Area Name or Number: W2, W4, W11, W21, W23, W24, W25, W27, W36, W37, W41, W45, W47, W62, W64, W66
Impact or Mitigation: Impact	Assessment Conducted by: Sydney Hauser/Ryan Ellis/Ryan DeSimone	Assessment Date: 1/17/2025, 1/27/2025

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

Enter Notes below (do NOT score each subcategory individually)

.500(6)(a) Location and Landscape Support		a. Quality and quantity of habitat support outside of AA.	Moderate
		b. Invasive plant species.	Minimal
		c. Wildlife access to and from AA (proximity and barriers).	Wildlife is impeded by US17/92 to the east but connected with other natural areas north and south
		d. Downstream benefits provided to fish and wildlife.	Moderate
		e. Adverse impacts to wildlife in AA from land uses outside of AA.	Some adverse impact from rail road and roadway
		f. Hydrologic connectivity (impediments and flow restrictions).	Wetlands connect south out of study area
Current	With Impact	g. Dependency of downstream habitats on quantity or quality of discharges.	Moderate
		h. Protection of wetland functions provided by uplands (upland AAs only).	Moderate
		Additional Notes: Wildlife access and usage is restricted by development and railroad; species can move along the undeveloped areas.	
6	0		

.500(6)(b) Water Environment (n/a for uplands)		a. Appropriateness of water levels and flows.	Typical
		b. Reliability of water level indicators.	Typical
		c. Appropriateness of soil moisture.	Appropriate
		d. Flow rates /points of discharge.	Typical
		e. Fire frequency/severity.	Low/ none
		f. Type of vegetation.	Moderate amounts of inappropriate species
		g. Hydrologic stress on vegetation.	None observed
		h. Use by animals with hydrologic requirements.	None observed
		i. Plant community composition associated with water quality (i.e., plants tolerant of poor WQ).	Appropriate
		j. Water quality of standing water by observation (i.e., discoloration, turbidity).	Turbidity observed in some places
Current	With Impact	k. Water quality data for the type of community.	Appropriate
		l. Water depth, wave energy, and currents.	0-6 inches
		Additional Notes: Water levels within the assessment areas is typical for the type of wetland system. Wetlands receive run off from development but also have some buffer from undeveloped areas.	
6	0		

.500(6)(c) Community Structure		I. Appropriate/desirable species	Some inappropriate species present
		II. Invasive/exotic plant species	Minimal invasive/exotic plants
		III. Regeneration/recruitment	Typical
		IV. Age, size distribution.	Typical
		V. Snags, dens, cavity, etc.	None observed
		VI. Plants' condition.	Typical
		VII. Land management practices.	None observed
		VIII. Topographic features (refugia, channels, hummocks).	N/a
		IX. Submerged vegetation (only score if present).	N/a
		X. Upland assessment area	N/a
Current	With Impact	Additional Notes: Assessment areas consisted of mostly native species and is almost entirely saw grass (<i>Cladium jamaicense</i>) with Virginia sweetspire (<i>Itea virginica</i>) and swamp bay (<i>Persea palustris</i>) at perimeter	
5	0		

Raw Score = Sum of above scores/30 (if uplands, divide by 20)	
Current	With Impact
0.57	0

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

Impact Delta (ID)	
Current - w/Impact	0.57

NOTE: If impact is proposed to be mitigated at a mitigation bank that was assessed using UMAM, then the credits required for mitigation is equal to Functional Loss (FL). If impact mitigation is proposed at a mitigation bank that was not assessed using UMAM, then UMAM cannot be used to assess impacts; use the assessment method of the mitigation bank.

Additional Notes:

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

Site/Project Name Central Polk Parkway East PD&E Study FPID: 451419-1-22-01		Application Number		Assessment Area Name or Number W28	
FLUCCs code 641 Freshwater marshes		Further classification (optional)		Impact Type Direct Impact	Assessment Area Size Acres
Basin/Watershed Name/Number HUC 030901010601	Affected Waterbody (Class) Class III		Special Classification (i.e.OFW, AP, other local/state/federal designation of importance) None		
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands					
Assessment area is surrounded by natural areas and is well buffered from disturbance by neighboring land uses. These are large interconnected systems.					
Assessment area description Assessment areas are freshwater marsh wetlands that are surrounded by undeveloped lands and interconnected wetlands. The sytem is dominated by open water areas with emergent freshwater plant species and free floating aquatic species.					
Significant Nearby Features None			Uniqueness (considering the relative rarity in relation to the regional landscape.) Herbaceous and open water wetlands are similar throughout the project area		
Functions Filtering of runoff, sediments or pollutants, potential foraging, roosting or nesting habitat for various passerines, habitat for small mammals, reptiles, and amphibians.			Mitigation for previous permit/other historic use		
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) Small amounts of foraging habitat for wading birds, possibly Florida bonneted bat (<i>Eumops floridanus</i>), freshwater fish species, fresh water turtles.			Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) Little blue heron (<i>Egretta caerulea</i>) (T), low intensity foraging Tricolor heron (<i>Egretta canadensis</i>) (T), low intensity foraging Roseate spoonbill (<i>Platalea ajaja</i>) (T), low intensity foraging Woodstork (<i>Mycteria americana</i>) (FT), low intensity foraging		
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):					
Additional relevant factors:					
Assessment conducted by: Ryan DeSimone			Assessment date(s): 01/17/25		

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

Site/Project Name: Central Polk Parkway East PD&E Study FPID: 451419-1-22-01	Application Number:	Assessment Area Name or Number: W28
Impact or Mitigation: Impact	Assessment Conducted by: Ryan DeSimone	Assessment Date: 01/17/25

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

Enter Notes below (do NOT score each subcategory individually)

.500(6)(a) Location and Landscape Support		a. Quality and quantity of habitat support outside of AA.	Moderate
		b. Invasive plant species.	Torpedo grass
		c. Wildlife access to and from AA (proximity and barriers).	Wildlife is impeded by US17/92 to the east but connected with other natural areas north and south
		d. Downstream benefits provided to fish and wildlife.	Moderate
		e. Adverse impacts to wildlife in AA from land uses outside of AA.	Some adverse impact from rail road and roadway
		f. Hydrologic connectivity (impediments and flow restrictions).	Wetlands connect north west and out of study area.
		Current	With Impact
h. Protection of wetland functions provided by uplands (upland AAs only).	Moderate		
6	0	Additional Notes: Wildlife access and usage may be restricted by US17/92 (high traffic road); though species can move along the undeveloped areas.	

.500(6)(b) Water Environment (n/a for uplands)		a. Appropriateness of water levels and flows.	Typical
		b. Reliability of water level indicators.	Typical
		c. Appropriateness of soil moisture.	Appropriate
		d. Flow rates /points of discharge.	Typical
		e. Fire frequency/severity.	Low/ none
		f. Type of vegetation.	Moderate amounts of inappropriate species
		g. Hydrologic stress on vegetation.	None observed
		h. Use by animals with hydrologic requirements.	None observed
		i. Plant community composition associated with water quality (i.e., plants tolerant of poor WQ).	Appropriate
		j. Water quality of standing water by observation (i.e., discoloration, turbidity).	Turbidity observed in some places
Current	With Impact	k. Water quality data for the type of community.	Appropriate
		l. Water depth, wave energy, and currents.	0-6 inches
6	0	Additional Notes: Water levels within the assessment areas is typical for the type of wetland system. Wetlands receive run off from surrounding undeveloped areas creating a natural buffer to wetland.	

.500(6)(c) Community Structure		I. Appropriate/desirable species	Some inappropriate species present
		II. Invasive/exotic plant species	Minimal in shrub and herbaceous stratum
		III. Regeneration/recruitment	Typical
		IV. Age, size distribution.	Typical
		V. Snags, dens, cavity, etc.	None observed
		VI. Plants' condition.	Typical
		VII. Land management practices.	None observed
		VIII. Topographic features (refugia, channels, hummocks).	N/a
		IX. Submerged vegetation (only score if present).	N/a
		X. Upland assessment area	N/a
Current	With Impact	Additional Notes: Assessment areas consisted of mostly native species such as nymphaea, nuphar, and lemna.	
		4	0

Raw Score = Sum of above scores/30 (if uplands, divide by 20)	
Current	With Impact
0.53	0

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

Impact Delta (ID)	
Current - w/Impact	0.53

NOTE: If impact is proposed to be mitigated at a mitigation bank that was assessed using UMAM, then the credits required for mitigation is equal to Functional Loss (FL). If impact mitigation is proposed at a mitigation bank that was not assessed using UMAM, then UMAM cannot be used to assess impacts; use the assessment method of the mitigation bank.

Additional Notes:

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