NATURAL RESOURCES EVALUATION

Osceola County

Old Lake Wilson Road Project Development and Environment (PD&E) Study

Limits of Project: County Road 532 to Sinclair Road

Osceola County, FL

Financial Management No.: 448781-1-22-01

Efficient Transportation Decision Making (ETDM) Report No.: 14456

Date: September 2022

The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried out by the Florida Department of Transportation (FDOT) pursuant to 23 U.S.C. § 327 and a Memorandum of Understanding dated May 26, 2022, and executed by the Federal Highway Administration and FDOT.

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EXECUTIVE SUMMARY

Osceola County in cooperation with the Florida Department of Transportation (FDOT), District 5, is conducting a Project Development and Environment (PD&E) Study to evaluate the proposed widening of Old Lake Wilson Road. The study area, which is maintained by Osceola County, traverses approximately 2.5 miles of Old Lake Wilson Road from Osceola Polk Line Road (County Road 532) to Sinclair Road. The project proposes to widen Old Lake Wilson Road from two to four lanes in order to increase capacity and improve safety along the corridor. The project occurs within Sections 22, 23, 26, 27, 34, 35, Township 25 South, and Range 27 East.

Old Lake Wilson Road is a north-south regional roadway connecting Ronald Reagan parkway in Polk County to U.S. 192 in Osceola County. Within the study area, Old Lake Wilson Road is an urban minor arterial, and generally a two-lane rural facility from Osceola Polk Line Road (CR 532) to just south of Sinclair Road. The majority of the project has an existing typical section which includes two 12-foot-wide travel lanes, one in each direction, and four-foot-wide unpaved shoulders. The right-of-way width is generally 130 feet; however, beginning approximately 900 feet south of Assembly Court to approximately 1,230 feet south of Fairfax Drive/Marker Avenue the right-of-way width increases incrementally and ultimately reaches a maximum of 250 feet in the vicinity of the Interstate 4 (I-4) overpass.

The alternatives analysis involved consideration of a no-build alternative; two roadway widening alternatives (Alternatives 1 and 2); I-4 bridge replacement and Davenport Creek bridge culvert replacement alternatives; intersection alternatives including signals and roundabouts; and bike lanes and sidewalks in each direction.

Alternative 1 was selected as the Preferred Alternative based on avoidance and minimization of impacts, public input, costs, and a range of technical components. Alternative 1 includes a four-lane divided typical section with two 11-foot travel lanes, a 10-foot sidewalk on the west side, and a six-foot sidewalk on the east side.

The stormwater runoff from the project will be collected in curb inlets and conveyed to existing stormwater management facilities. Existing permitted ponds were identified along the Old Lake Wilson Road corridor. The permitted ponds were designed to include additional treatment volume to accommodate the future four-lane widening of Old Lake Wilson Road.

This Natural Resources Evaluation (NRE) has been prepared as part of the PD&E Study to assess the widening alternatives and identify potential impacts to natural resources throughout the Old Lake Wilson Road corridor. The purpose of this NRE is to document protected species and their habitats and verify the locations of wetlands and surface waters within the project corridor in order to determine potential impacts to these resources, provide rationale to support species effect determinations, identify avoidance and minimization measures, and quantify mitigation for the recommended preferred alternative. This NRE has been prepared in accordance with the *Wetlands and Other Surface Waters and Protected Species and Habitat* chapters of the FDOT's *PD&E Manual* (FDOT, 2020) and the current Natural Resources Evaluation Outline and Guidance (FDOT, 2020).

The Preferred Alternative is located within the following United States Fish and Wildlife Service (USFWS) Consultation Areas (CA): Audubon's crested caracara (*Polyborus plancus audubonii*), Everglade snail kite

(*Rostrhamus sociabilis plumbeus*), Florida scrub-jay (*Aphelocoma coerulescens*), red-cockaded woodpecker (*Dryobates borealis*), sand skink (*Neoseps reynoldsi*) and blue-tailed mole skink (*Eumeces egregious lividus*), and Lake Wales Ridge plants. The Preferred Alternative falls within the Core Foraging Areas (CFA) for two wood stork colonies. The existing habitats in the study area may also support other federally protected species, as well as state protected species. Based on the results of the general wildlife and species-specific surveys, data collection, and USFWS' effect determination key, the Preferred Alternative will not jeopardize the continued existence of a protected species and/or result in the destruction or adverse modification of critical habitat. However, additional coordination with wildlife agencies will be required during the design and permitting phase, and additional wildlife surveys may be required prior to construction. **Table ES-1** identifies the protected species that were evaluated in this document, their regulatory status, and the effect determination under the Preferred Alternative.

Table ES-1: Effect Determinations for Protected Species

Common Name	Scientific Name	Status	Effect Determination
Reptiles			
American alligator	*Alligator mississippiensis*	FT (S/A)	NO EFFECT
Blue-tailed mole skink	*Plestiodon egregius*	FE	NO EFFECT
Eastern indigo snake	*Drymarchon couperi*	FT	MANLAA
Gopher tortoise	*Gopherus polyphemus*	C / ST	MANLAA
Sand skink	Neoseps reynoldsi	FT	NO EFFECT
Birds			
Audubon's crested caracara	*Polyborus plancus audubonii*	FT	NO EFFECT
Southern bald eagle	*Haliaeetus leucocephalus*	BGEPA / MBTA	--
Everglade snail kite	*Rostrhamus sociabilis plumbeus*	FE	NO EFFECT
Florida burrowing owl	*Athene cunicularia floridana*	ST	NAEA
Florida sandhill crane	*Antigone canadensis pratensis*	ST	NAEA
Florida scrub-jay	*Aphelocoma coerulescens*	FT	NO EFFECT
Little blue heron	*Egretta caerulea*	ST	NAEA
Red-cockaded woodpecker	*Dryobates borealis*	FE	NO EFFECT
Roseate spoonbill	*Platalea ajaja*	ST	NO EFFECT
Southeastern American kestrel	*Falco sparverius Paulus*	ST	NAEA
Tricolored heron	*Egretta tricolor*	ST	NAEA
Wood stork	*Mycteria americana*	FT	MANLAA
Mammals			
Florida black bear	*Ursus americanus floridanus*	M	--
Southern fox squirrel	*Sciurus niger*	M	--
Plants			
Pine-woods Bluestem	*Andropogon arctatus*	ST	NEA
Ashe's Savory	*Calamintha ashei*	ST	NEA
Avon Park Rabbit-bells	*Crotalaria avonensis**	FE	NO EFFECT
Britton's beargrass	*Nolina brittonia*	FE	NO EFFECT
Carter's warea	*Warea carteri*	FE	NO EFFECT

Common Name	Scientific Name	Status	Effect Determination
Celestial Lily	*Nemastylis floridana*	SE	NEA
Chapman's sedge	*Carex chapmanii*	ST	NEA
Clasping warea	*Warea amplexifolia**	FE	NO EFFECT
Cutthroat grass	*Panicum abscissum*	SE	NEA
Florida beargrass	*Nolina atopocarpa*	ST	NEA
Florida Bonamia	*Bonamia grandiflora**	FT/SE	NO EFFECT
Florida jointweed	*Polygonella basiramia**	FE	NO EFFECT
Florida spiny-pod	*Matelea floridana*	SE	NEA
Florida willow	*Salix floridana*	SE	NEA
Garrett's Scrub Balm	*Dicerandra christmanii**	FE	NO EFFECT
Giant orchid	*Pteroglossaspis ecristata*	ST	NEA
Hartwrightia	*Hartwrightia floridana*	SE	NEA
Highlands Scrub Hypericum	*Hypericum cumulicola**	FE	NO EFFECT
Lewton's polygala	*Polygala lewtonii**	FE	NO EFFECT
Many-flowered Grass-pink	*Calopogon multiflorus*	ST	NEA
Nodding Pinweed	*Lechea cernua*	ST	NEA
Paper-like Nailwort	*Paronychia chartacea ssp.**	FT/SE	NO EFFECT
Piedmont jointgrass	*Coelorachis tuberculosa*	ST	NEA
Pine Pinweed	*Lechea divaricate*	SE	NEA
Pinescrub bluestem	*Schizachyrium niveum*	SE	NEA
Pine-woods Bluestem	*Andropogon arctatus*	ST	NEA
Plume polybody	*Polypodium plumula*	SE	NEA
Pygmy fringe tree	*Chionanthus pygmaeus**	FE	NO EFFECT
Sand butterfly pea	*Centrosema arenicola*	ST	NEA
Scrub blazing star	*Liatris ohlingerae**	FE	NO EFFECT
Scrub buckwheat	*Eriogonum longifolium var. gnaphalifolium**	FT/SE	NO EFFECT
Scrub lupine	*Lupinus aridorum**	FE	NO EFFECT
Scrub Mint	*Dicerandra frutescens**	FE	NO EFFECT
Scrub pigeon-wing	*Clitoria fragans**	FT/SE	NO EFFECT
Scrub plum	*Prunus geniculata**	FE	NO EFFECT
Short-leaved Rosemary	*Conradina brevifolia**	FE	NO EFFECT
Small's jointweed	*Polygonella myriophylla**	FE	NO EFFECT
Star anise	*Illicium parviflorum*	SE	NEA
Swamp plume polybody	*Polypodium ptilodon*	SE	NEA

MANLAA = May Affect, Not Likely to Adversely Affect
NEA = No Effect Anticipated
NAEA = No Adverse Effect Anticipated
* Indicates Lake Wales Ridge plants

Wetlands and other surface waters (OSW) with potential to be affected by the proposed project were identified within the Old Lake Wilson Road study area. An assessment was performed for wetlands and OSW in accordance with the Uniform Mitigation Assessment Method (UMAM) pursuant to Chapter 62-345, F.A.C., to determine the functional value provided by the wetlands and OSW and the amount of mitigation required to offset adverse impacts. OSW classified as permitted reservoirs were not included

in the assessment as mitigation will not be required for impacts to these OSW. The Preferred Alternative will directly impact approximately 0.49 acres of wetlands and 0.05 acres of other surface waters. Secondary impacts to adjacent wetlands are approximately 0.04 acres. The total project impacts result in a functional loss of 0.302 units for state and federal jurisdictional wetlands. Mitigation for unavoidable adverse wetland impacts will be provided through the purchase of credits from a private mitigation bank to satisfy all mitigation requirements of Part IV, Chapter 373 F.S., and U.S.C. 1344.

No Essential Fish Habitat (EFH) has been identified within the study area. According to the Efficient Transportation Decision-Making (ETDM) Summary Report #14456, dated September 7, 2021, National Marine Fishery Service (NMFS) staff concluded that the project will not impact EFH; therefore, an EFH assessment is not required.

SECTION 1 PROJECT OVERVIEW

1.1 Project Description

The Old Lake Wilson Road Project Development and Environment (PD&E) Study evaluated capacity and systems linkage from CR 532 to Sinclair Road in Osceola County, a distance of approximately 2.5 miles. The project limits are shown in **Figure 1-1**.

In the existing condition, Old Lake Wilson Road, also known as County Road 545, hereinafter referred to as Old Lake Wilson Road, is a two-lane undivided, rural roadway from CR 532 to approximately one-quarter mile south of Sinclair Road, the project's northern terminus.

The existing typical section includes two 12-foot wide travel lanes, one in each direction, and four-foot-wide unpaved shoulders. The right-of-way width is generally 130 feet; however, beginning approximately 900 feet south of Assembly Court to approximately 1,230 feet south of Fairfax Drive/Marker Avenue, the right-of-way width increases incrementally and ultimately reaches a maximum of 250 feet in the vicinity of the I-4 overpass.

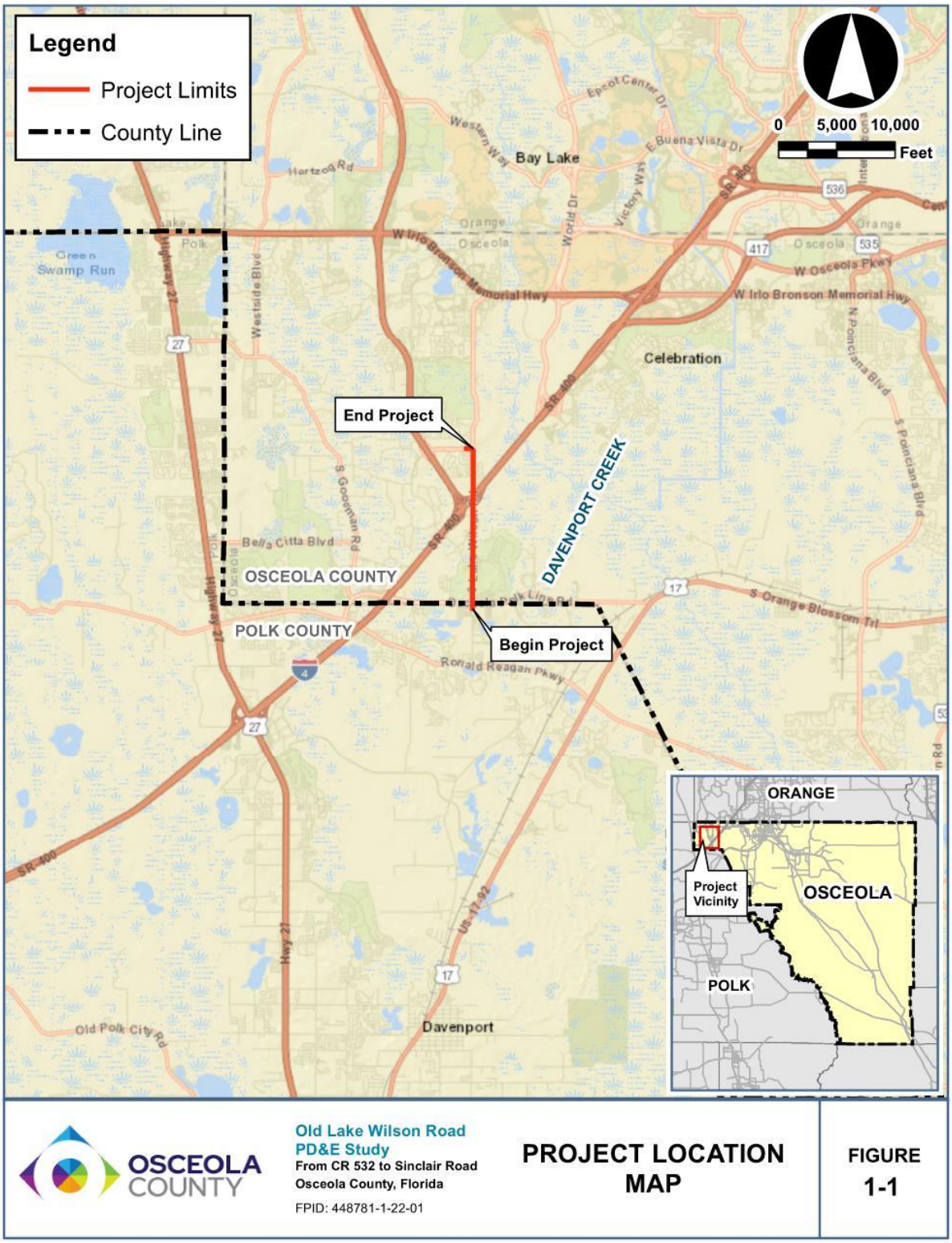
Starting approximately one-quarter mile south of Sinclair Road, Old Lake Wilson Road transitions to an urban roadway with type E curb on the inside shoulders and type F curb on the outside shoulders. Approaching Sinclair Road, two 12-foot travel lanes are provided in the northbound direction while one 12-foot wide travel lane is provided in the southbound direction.

Both termini, CR 532 and Sinclair Road, are signalized intersections. Additionally, there are five unsignalized intersections within the study limits. These include: Excitement Drive, Spine Road, Assembly Court, Fairfax Drive / Marker Avenue and Pendant Court.

There are three bridges within the study limits: Gathering Drive/Reunion Boulevard over Old Lake Wilson Road, the southbound onramp from SR 429 to eastbound I-4 and Old Lake Wilson Road over I-4. Additionally, there are three bridge culverts within the study limits: Old Lake Wilson Road over Golf Cart Crossing #1, Old Lake Wilson Road over Golf Cart Crossing #2, and Old Lake Wilson over Davenport Creek.

The project involves evaluating the widening of the existing two-lane undivided rural roadway to a four-lane divided roadway and the addition of bicycle and pedestrian features.

Figure 1-1: Project Location Map



1.2 Purpose and Need

The purpose and need for the project is based on two main elements: capacity and system linkage. The need for these improvements is described below.

1.2.1 Transportation Demand/Capacity

In the future year (2050) no-build condition, this segment of Old Lake Wilson Road is projected to operate at Level of Service (LOS) F with Annual Average Daily Traffic (AADT) exceeding 30,000 vehicles. In the existing condition, this section of Old Lake Wilson Road operates at a LOS F with an AADT of approximately 20,000 vehicles, exceeding the current two-lane capacity of 15,900 vehicles.

1.2.2 System Linkage

Old Lake Wilson Road begins as Lake Wilson Road at CR 54 in Polk County, becomes Old Lake Wilson Road at CR 532, and terminates at US 192 in Osceola County, a distance of approximately six miles. Polk County is in the final design phase for the four-lane widening of Lake Wilson Road from CR 54 to CR 532; moreover, the segment from Sinclair Drive to US 192 is currently a four-lane divided facility. This leaves a 2.5-mile two-lane segment from CR 532 to south of Sinclair Road, which constrains the overall capacity of Old Lake Wilson. Additionally, the two-lane section of roadway creates a gap for bicycle and pedestrian features.

1.3 Alternatives Analysis Summary

The alternatives analysis involved consideration of two roadway and bridge typical sections, a no-build alternative, and intersection evaluations. The Alternatives Analysis can be found in Section 4 of the Preliminary Engineering Report (PER).

1.3.1 Roadway Typical Sections

Two typical sections were developed to support the Old Lake Wilson purpose and need for capacity and system linkage improvements.

- Build Alternative 1
  Typical Section 1 is a four-lane divided typical section with two 11-foot wide travel lanes and a five-foot wide bike lane in each direction separated by a 37.5-foot raised median. A 10-foot wide sidewalk is provided on the west side with four feet of sod between the curb and sidewalk, and a six-foot wide sidewalk is provided on the east side with a three-foot sod strip between the curb and the sidewalk. This typical section requires a minimum of 117.5 feet of right of way and has a design speed of 45 mph and a posted speed of 45 mph.
- Build Alternative 2
  Typical Section 2 is a four-lane divided typical section with two 11-foot wide travel lanes and a seven-foot wide buffered bike lane in each direction separated by a 37.5-foot raised median. An 8-foot wide sidewalk is provided on the west side with four feet of sod between the curb and sidewalk, and a six-foot wide sidewalk is provided on the east side with a three-foot sod strip between the curb and the sidewalk. This typical section requires a minimum of 119.5 feet of right of way and has a design speed of 45 mph and a posted speed of 45 mph.
- No-Build Alternative

The No-Build Alternative assumes that Old Lake Wilson Road will remain in its current roadway condition with no improvements other than routine maintenance. The No-Build Alternative remains a viable option throughout the duration of the study. The primary advantages of the No-Build Alternative are that it does not require any capital or expenditure of local, state, or federal transportation funds, and it results in no impacts to the social, natural, cultural, or physical environment. Conversely, the No-Build Alternative does not fulfill the purpose and need to improve capacity and system linkage.

1.3.2 Bridge Typical Sections

The study evaluated both widening and replacement options to accommodate a four-lane typical section with bicycle and pedestrian features. Two bridge alternatives were evaluated.

- Bridge Alternative 1
  Bridge Typical Section 1 includes maintaining the existing Old Lake Wilson Road bridge over I-4 to serve as the future northbound bridge. It includes the addition of a raised sidewalk along the east side of the bridge. The two travel lanes will be 11 feet wide and a 2.5 foot inside shoulder and 8.3 foot outside shoulder/bike lane will be provided. The new southbound bridge will be constructed at a higher elevation to accommodate the future I-4 Beyond the Ultimate improvements. It includes two 11-foot wide travel lanes, a wide 19-foot inside shoulder, and an 8.3-foot outside shoulder/bike lane separated from a 10-foot sidewalk by a concrete barrier. The wide inside lane is required so that this new bridge can accommodate four lanes of traffic when the existing Old Lake Wilson Road bridge is demolished and rebuilt at a higher elevation as part of the I-4 Beyond the Ultimate project. The total width of the new bridge is 62.8 feet.

- Bridge Alternative 2
  Bridge Typical Section 2 over I-4 is the same as Bridge Typical Section 1; however, the sidewalk on the new southbound bridge is eight feet wide, and the total bridge width is 60.8 feet.

- Davenport Creek Bridge Culvert (Culvert # 924147)
  The bridge over Davenport Creek was considered for widening or replacement. Due to the age and existing conditions of the bridge culvert, it is unlikely that simply widening to accommodate the proposed improvements will meet expectations as to future Design Service Life. For this reason, Bridge Culvert #924147 was recommended to be replaced with a quadruple 12’ x 8’ box culvert to accommodate the proposed improvements. The proposed typical section is a paved two-lane roadway with 10-foot lanes and a six-foot shoulder with 4.5-foot paved shoulder on the roadway approaches, and six-foot paved shoulder at the bridge.

1.3.3 Intersection Alternatives

Intersection alternatives were evaluated at six intersections within the project limits. The following intersection types were considered at each location:

- CR 532 – Traffic signal (existing traffic signal)
- Excitement Drive – Two-way stop control (full median opening), roundabout, signalized R-cut, and unsignalized R-cut

- Spine Road – Traffic signal, roundabout
- Assembly Court – Two-way stop control (full median opening), roundabout
- Fairfax Drive/Marker Avenue – Traffic signal, roundabout
- Sinclair Road – Traffic signal (existing traffic signal)

1.4 Preferred Alternative

The selection of the Preferred Alternative included the avoidance and minimization of impacts, costs, consistency with the Old Lake Wilson Road typical section to the north and the proposed Lake Wilson Road to the south, and input received at the Alternatives Public Meeting held on February 22, 2022. Alternative 1 was selected as the Preferred Alternative.

1.4.1 Roadway Typical Section

The Preferred Alternative typical section (**Figure 1-2**) consists of a four-lane divided high speed curbed roadway with a design speed of 45 mph and a posted speed of 45 mph. The median is 37.5 feet wide. Vehicles are accommodated in 11-foot travel lanes (two in each direction), with five-foot-wide bike lanes adjacent to the outside travel lanes. Pedestrians are accommodated on a 10-foot sidewalk on the west side of Old Lake Wilson Road and a six-foot wide sidewalk on the east side. At the I-4 bridge approaches, runoff is collected in shoulder gutter inlets and conveyed to the existing infield stormwater pond or roadside ditches. The right of way width varies from 170 to 204 feet for this typical section, while the existing right of way is 130 feet.

1.4.2 Bridge Typical Section (I-4)

The Preferred Alternative bridge typical section over I-4 (**Figure 1-3**) includes restriping the existing bridge to accommodate two northbound travel lanes. A raised sidewalk will be added to the existing bridge. The northbound bridge includes two 11-foot travel lanes, an 8.25-foot bike lane, and a seven-foot raised sidewalk. There is a 2.5-foot inside travel lane shoulder and fencing along the sidewalk. The northbound and southbound lanes are separated by 20 feet. A new southbound bridge would be constructed at a higher elevation with a wider inside shoulder that would accommodate future I-4 improvements. This new bridge would include two 11-foot travel lanes and a 10-foot wide protected shared use path. The inside shoulder for the southbound bridge is 19-feet wide and has a fence. The bike lane is 8.25-feet wide and there is a traffic barrier protecting the sidewalk with a fence on the outside.

Figure 1-2: Preferred Alternative - Roadway Typical Section 1

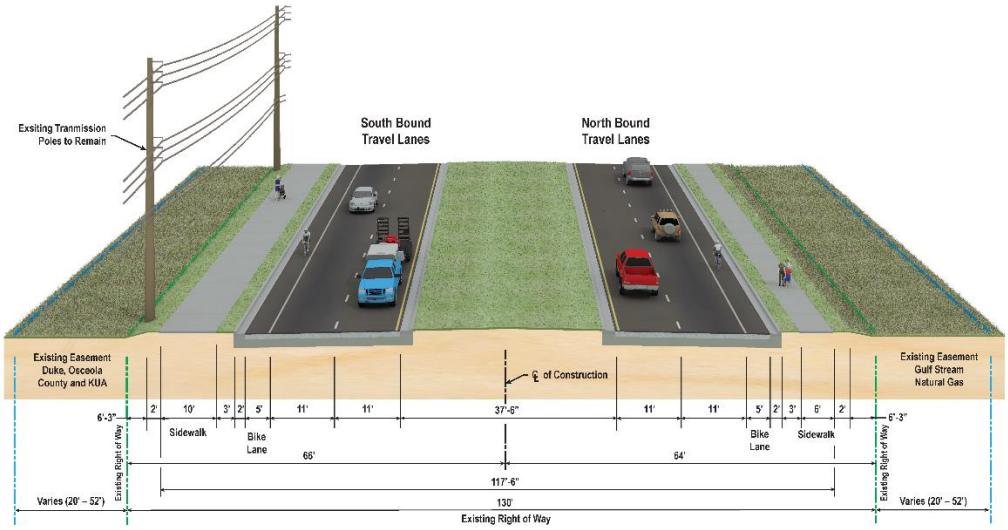
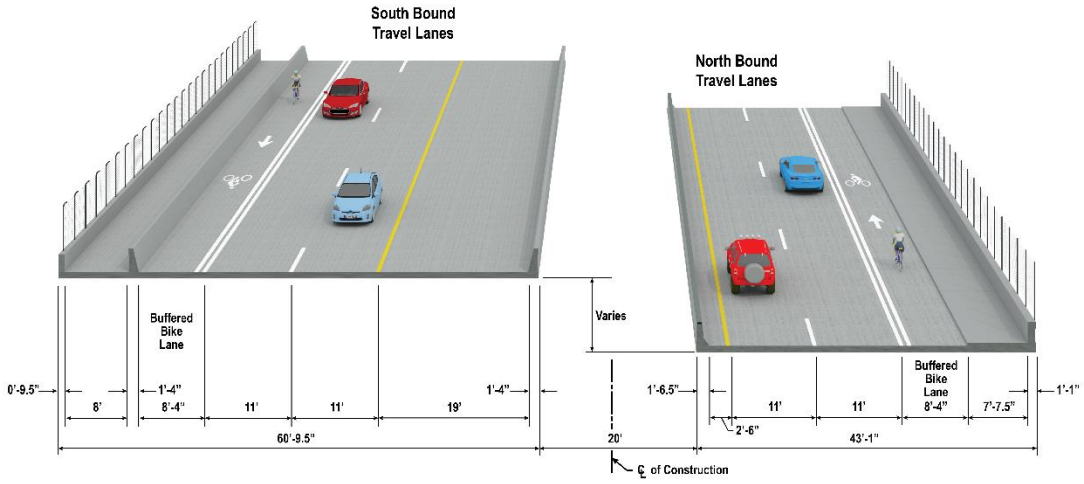


Figure 1-3: Preferred Alternative - Bridge Typical Section 1



1.4.3 Intersections

Based on the intersection alternatives analysis, the intersections for the preferred alternative are described below.

- Old Lake Wilson Road & Osceola Polk Line Road (C.R. 532)
  - Due to operational performance, it was determined that the northbound approach requires an exclusive right turn lane.
  - Due to operational performance, it was determined that the westbound approach requires a second exclusive right turn lane.
- Old Lake Wilson Road & Excitement Drive:
  - It was determined the installation of a southbound directional median opening and a northbound U-turn (unsignalized R-cut) is required.
- Old Lake Wilson Road & Spine Road:
  - It was determined that a signalized intersection would be installed.
  - Due to operational performance, it was determined that the northbound approach requires an exclusive left turn lane.
  - Due to operational performance, it was determined that the southbound approach requires an exclusive right turn lane.
- Old Lake Wilson Road & Assembly Court:
  - It was determined that a full median opening with a northbound exclusive right turn lane and a southbound exclusive left turn lane would be required.
- Old Lake Wilson Road & Fairfax Drive/Marker Avenue:
  - It was determined that a signalized intersection would be installed. The intersection requires additional right of way due to the additional through lane in each direction. There will be a raised median dividing north and south lanes and an exclusive left and right turning lane for both north and southbound directions.
- Old Lake Wilson Road & Sinclair Road:
  - Due to operational performance, it was determined that the northbound approach requires a second exclusive left turn lane.
  - Due to operational performance, it was determined that the eastbound approach requires an exclusive left turn lane and a shared left-through lane.
  - Due to operational performance, it was determined that the eastbound approach requires a second exclusive right turn lane, requiring additional right of way.

Graphical representations of the intersections for the preferred alternative can be found in the Concept Plans Appendix C of the PER.

1.4.4 Proposed Drainage

The project is within the jurisdiction of the South Florida Water Management District (SFWMD) and the Florida Department of Environmental Protection (FDEP). The stormwater management approach is to minimize cultural and environmental impacts, as well as right-of-way, maintenance, and construction costs by utilizing permitted pond sites that account for future improvements of Old Lake Wilson Road.

The project is divided into 8 sub-basins based on the existing roadway profile, roadside ditch profiles, and culvert and cross drain locations. Historical permit data indicates that the existing ponds were originally sized to accommodate the future (four-lane) condition. The Pond Siting Report (PSR), under separate cover, was developed to document Osceola County, FDOT, and SFWMD stormwater requirements and identify existing and/or planned stormwater management facilities with additional storage capacity to accommodate the runoff from the widening of Old Lake Wilson Road.

The viability of the existing permitted stormwater management facilities was evaluated. Treatment requirements for the future four-lane widening of Old Lake Wilson Road were based on Typical Section 2, representing the maximum percent impervious of the proposed typical section alternatives. Based on the review of existing permits, mitigation for the FDEP and SFWMD stormwater requirements can be provided within the existing ponds identified along the project corridor. Nutrient loading calculations demonstrate that the pollutant loading can be accommodated within the existing permitted ponds identified along the project corridor.

For more information including descriptions of each basin, pond site alternative, and floodplain compensation site and further explanations of design and limiting discharge criteria, please refer to the Pond Siting Report. The recommended preferred pond alternatives are listed in **Table 1-1** below.

Table 1-1: Preferred Pond Alternatives

Basin	Preferred Pond Alternative
Basin 1	Existing Pond 370
Basin 2	Existing Pond 374
Basin 3	Existing Pond 491
Basin 4	Existing Pond 362/Pond 9
Basin 5	Existing Pond 108A
Basin 6	Existing Ponds 105A and 105B
Basin 7	Existing Pond 8
Basin 8	Existing Pond 6

1.5 Environmental Assessment Study Area

The Old Lake Wilson Road study area is considered to be the areas directly or indirectly affected by the proposed action and not merely the immediate area involved in the action. It encompasses the geographic extent of the environmental changes that may result from the action. For purposes of this study, the study area includes all lands within 600 feet of the existing County right-of-way. The Preferred Alternative, including proposed ponds sites, is located almost entirely within the existing right-of-way.

1.6 Report Contents and Purpose

This Natural Resources Evaluation (NRE) has been prepared as part of the PD&E Study to assess the various Old Lake Wilson Road widening alternatives and identify potential impacts to natural resources throughout the corridor. The purpose of this NRE is to document protected species and habitat and

identify the location of wetlands and surface waters within the project corridor in order to determine potential impacts to these resources, provide rationale to support species effect determinations, identify avoidance and minimization measures, and quantify mitigation necessary for the recommended preferred alternative. This NRE has been prepared in accordance with the Wetlands and Other Surface Waters and Protected Species and Habitat chapters of the FDOT's PD&E Manual (FDOT, 2020) and the current Natural Resources Evaluation Outline and Guidance (FDOT, 2020).

SECTION 2 EXISTING ENVIRONMENTAL CONDITIONS

Prior to field surveys, staff ecologists reviewed the most currently available information to identify existing conditions within the study area. Land use, soils and other natural features were identified to determine what resources occur or have the potential to occur within the Old Lake Wilson Road Study Area. This information includes land use maps provided by the South Florida Water Management District (SFWMD). The land use descriptions were based on the Florida Land Use, Cover and Forms Classification System (FLCUFCS) (FDOT, 1999). Other information included but was not limited to:

- U.S. Geographic Survey (USGS) Topographic Maps (https://viewer.nationalmap.gov/launch/)
- Natural Resources Conservation Service (NRCS) Soil Maps (https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm)
- Florida Natural Areas Inventory (FNAI) Cooperative Land Cover Maps (https://www.fnai.org/services/coop-land-cover)
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) Maps (https://www.fws.gov/wetlands/data/mapper.html)
- USFWS Consultation Area and Critical Habitats Maps (https://crithab.fws.gov/)
- USFWS Information for Planning and Consultation (IPAC) (https://ipac.ecosphere.fws.gov/)
- USFWS Wood Stork Nesting Colonies and Core Foraging Areas Maps
- National Marine Fisheries Service (NMFS) Essential Fish Habitat (EFH) Maps (https://www.habitat.noaa.gov/protection/efh/habitatmapper.html)
- Florida Fish and Wildlife Conservation Commission (FWC) Scrub-Jay Observation Maps (http://myfwc.com/research/gis/)
- FWC Red-Cockaded Woodpecker Observation Maps (http://geodata.myfwc.com/datasets/red-cockaded-woodpecker-observation-locations)
- FWC Wildlife Occurrence Maps (http://geodata.myfwc.com/datasets)
- FWC Species Action Plans (http://myfwc.com/wildlifehabitats/imperiled/species-action-plans/)
- FDOT Efficient Transportation Decision Making (ETDM) Summary Report #14456 (https://etdmpub.fla-etat.org/est/#)
- Audubon Florida EagleWatch Public Nest App

(https://cbop.audubon.org/conservation/about-eaglewatch-program)

2.1 Land Use

The land uses within the Old Lake Wilson Road study area were first characterized by SFWMD online resources and later verified by ecologists during field reviews. The Old Lake Wilson Road study corridor is highly developed with little natural habitat. The FLUCFCS types include urban and built-up, upland forests, water, wetlands, transportation, and utilities (**Figures 2-1**). A detailed list of the land uses within the study area is provided in **Table 2-1.** Additional descriptions of the land uses are located in **Appendix A. Figure 2-2** shows the topographic map of the study area**.** Photographs of representative habitats within the study area are provided in **Appendix B.**

Table 2-1: FLUCFCS within the Old Lake Wilson Road Study Area

FLUCFCS CODE	FLUCFCS DESCRIPTION	AREA (ac)
120	RESIDENTIAL, MEDIUM DENSITY	82
131	RESIDENTIAL, HIGH DENSITY, FIXED	3
133	RESIDENTIAL, HIGH DENSITY,	33
134	RESIDENTIAL, HIGH DENSITY, MULTIPLE UNITS	24
139	RESIDENTIAL, HIGH DENSITY, UNDER CONS.	1
140	COMMERCIAL AND SERVICES	22
182	GOLF COURSES	100
441	CONIFEROUS PLANTATIONS	12
530	RESERVOIRS	6
617	MIXED WETLAND HARDWOODS	21
630	WETLAND FORESTED MIXED	6
814	ROADS AND HIGHWAYS	74
831	ELECTRIC POWER FACILITIES	8
	TOTAL	**392**

Figure 2-1: FLUCFCS Map

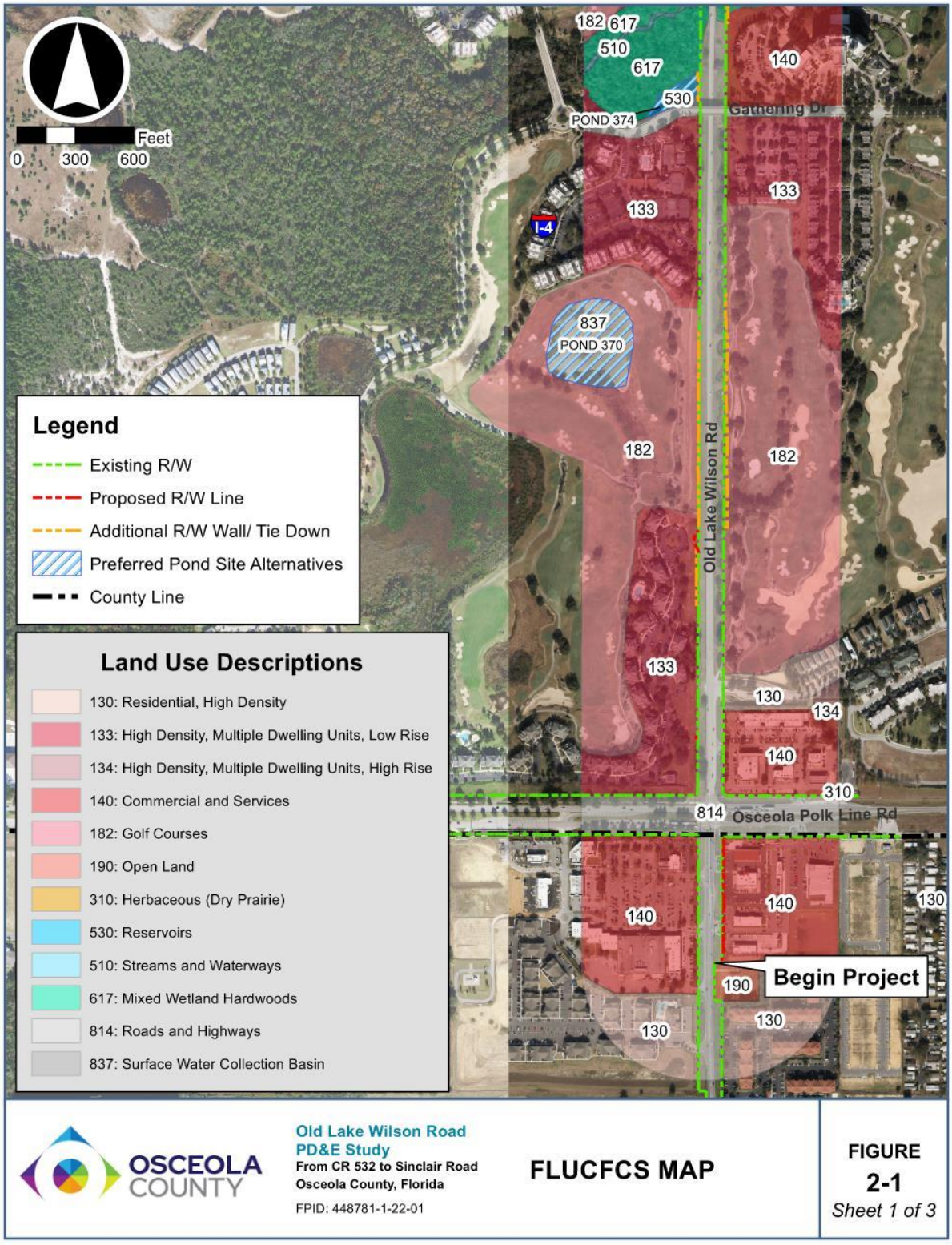


Figure 2-1: FLUCFCS Map

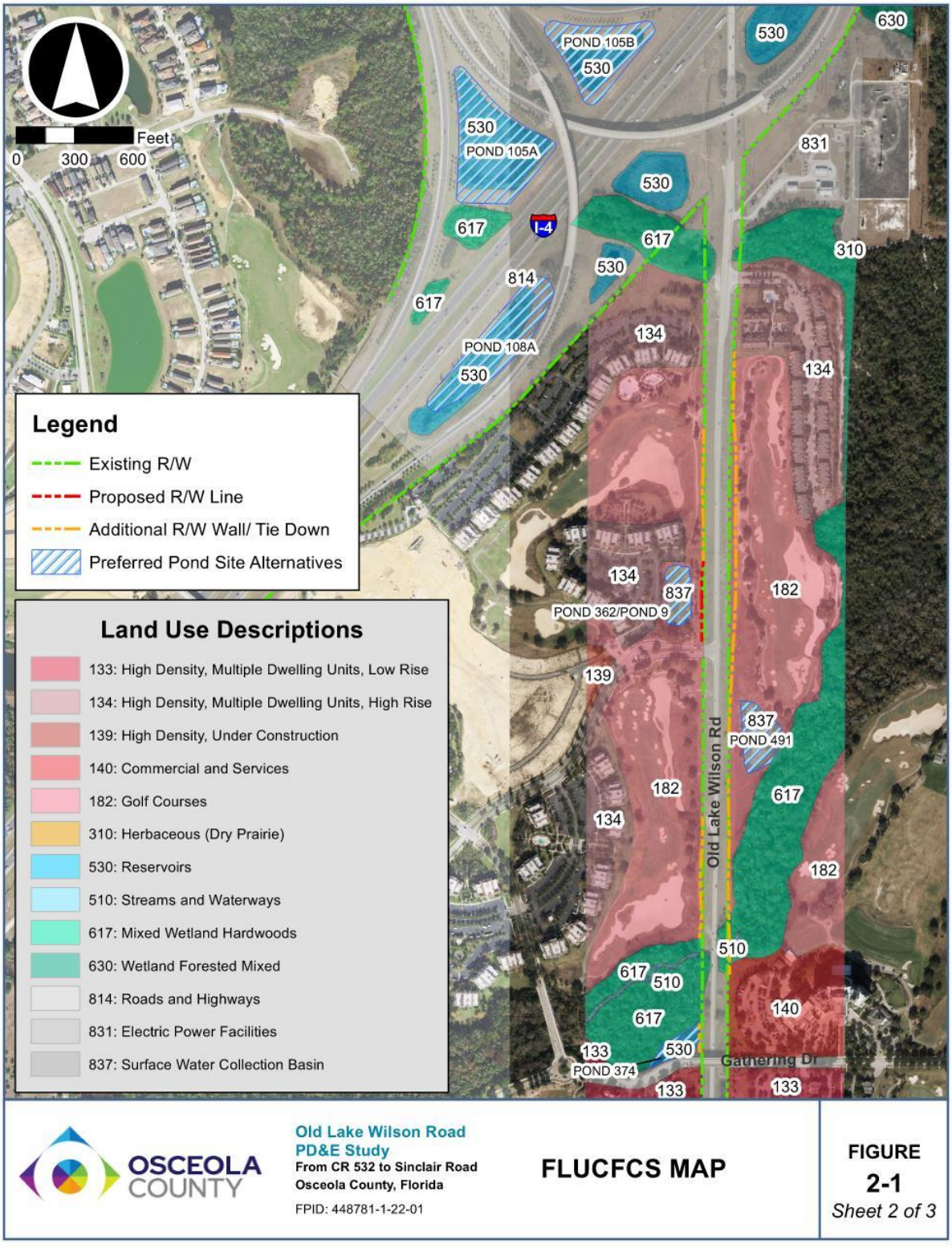
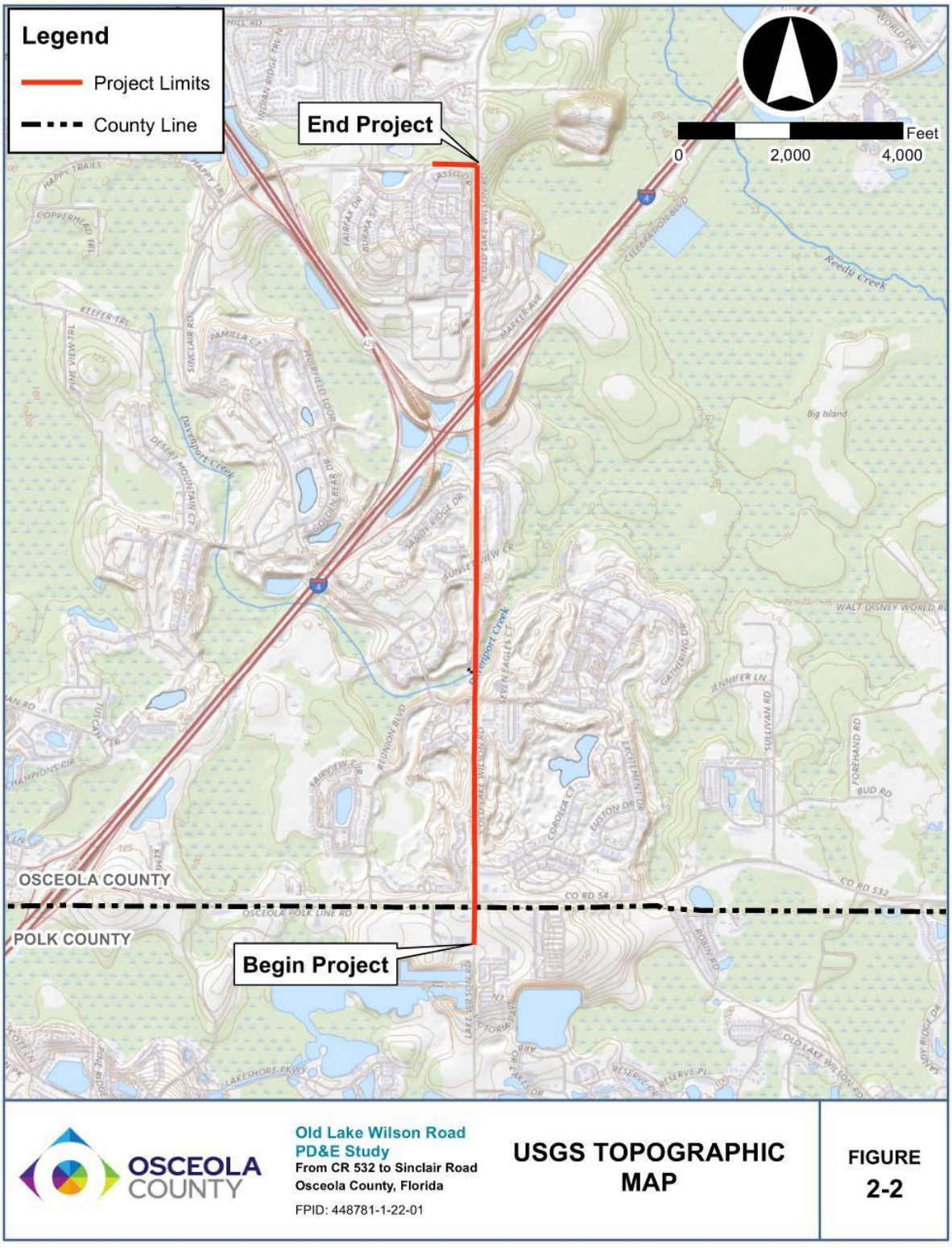


Figure 2-1: FLUCFCS Map

Figure 2-2: Topographic Map



2.2 Soils

The soil surveys for Osceola County (USDA NRCS, 1979) and Polk County (USDA NRCS, 1990) were reviewed to determine the soil types and characteristics within the Old Lake Wilson Road study area. According to the soil surveys, there are eight different soil types within the Old Lake Wilson Road Study area. **Table 2-2** lists and summarizes soil types within the study area. The soil types and locations are depicted in **Figures 2-3.**

The soils within the study area include Hydrologic Soil Group (HSG) A and A/D. For soils assigned a dual HSG, the first letter applies to the drained condition, and the second letter applies to the undrained condition.

Table 2-2: Soil Types Within the Old Lake Wilson Road Study Area

Soil No.	USDA Soil Name	Seasonal High Ground Water		HSG	Soil Classification		
		Depth (inches)	Duration (months)		Depth (inches)	Unified	AASHTO
3*	Candler Sand, 0 to 5 percent slopes	> 80	---	A	0-80	SP, SP-SM	A-3
7	Candler Sand, 0 to 5 percent slopes	> 80	---	A	0-62	SP, SP-SM	A-3
					62-80	SP-SM	A-3
					---	---	A-2-4
8	Candler Sand, 5 to 12 percent slopes	> 80	---	A	0-62	SP, SP-SM	A-3
					62-80	SP-SM	A-3
					---	---	A-2-4
15	Hontoon Muck, frequently ponded, 0 to 1 percent slopes	0	---	A/D	0-70	PT	---
34	Pomello Fine Sand, 0 to 5 percent slopes	24-42	---	A	0-47	SP, SP-SM	A-3
37	Pompano Fine Sand, frequently , 0 to 1 percent slopes	0	---	A/D	0-80	SP, SP-SM	A-3
							A-2-4
40	Samsuls Muck, frequently ponded, 0 to 1 percent slopes	0	---	A/D	0-22	PT	---
					22-65	SP-SM	A-3
					---	SM, SP	A-2-4
42	Smyrna Fine Sand, 0 to 2 percent slopes	6-18	---	A/D	0-14	SP, SP-SM	A-3
					14-25	SM, SP-SM	A-3, A-2-4
					25-56	SP, SP-SM	A-3
					56-80	SM, SP-SM	A-3, A-2-4

* Only soil type within study area to occur in Polk County

Figure 2-3: NRCS Soils Map

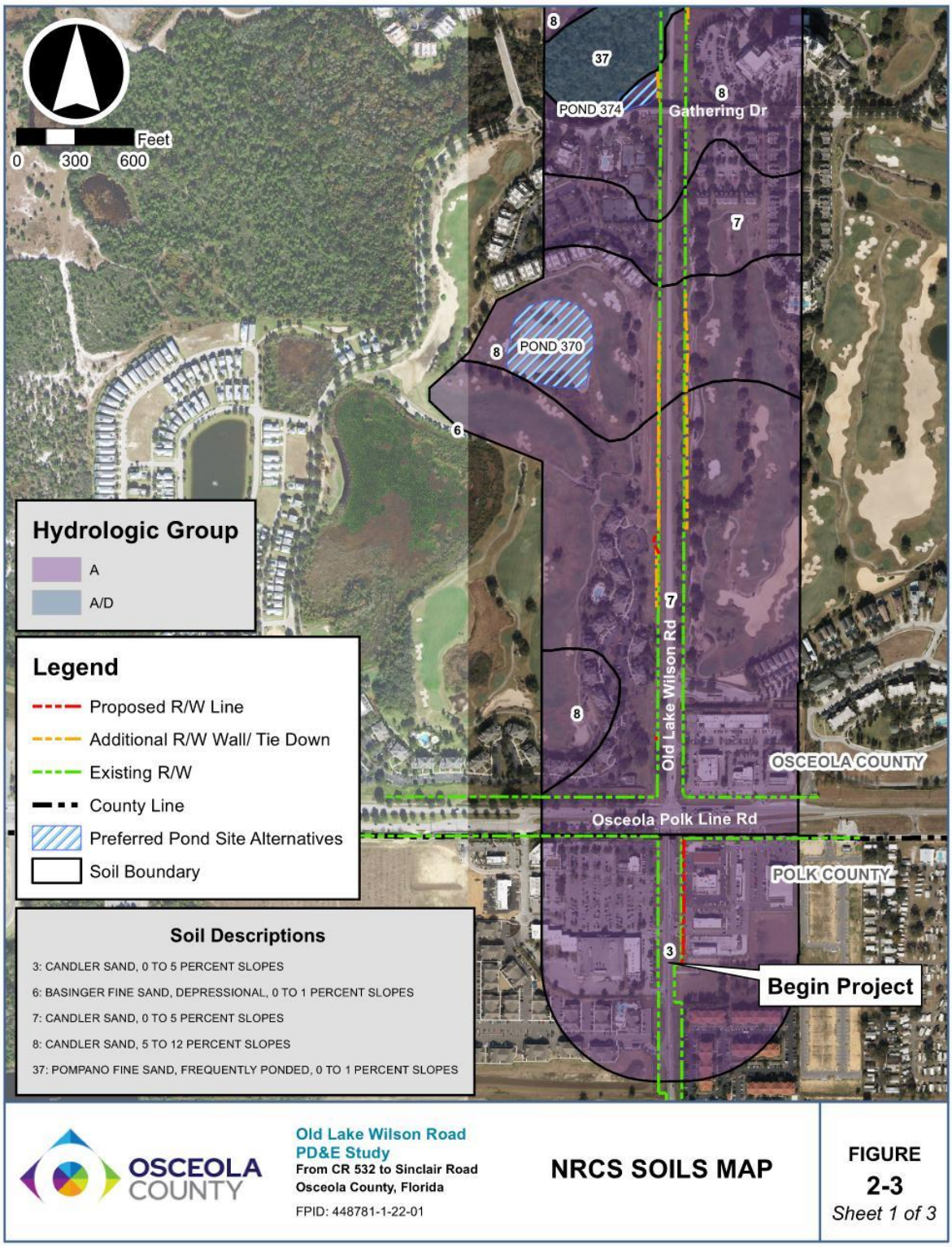


Figure 2-3: NRCS Soils Map

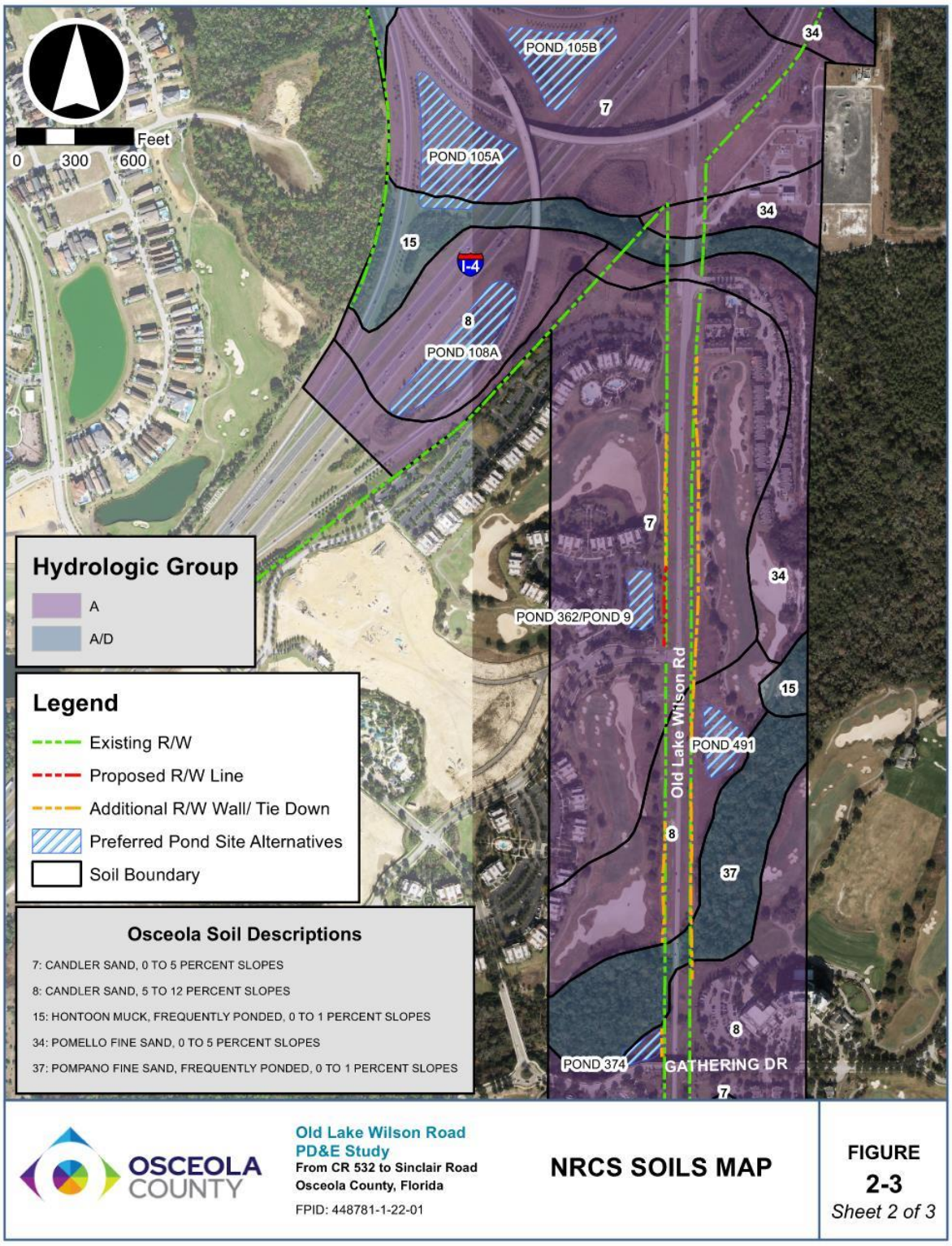
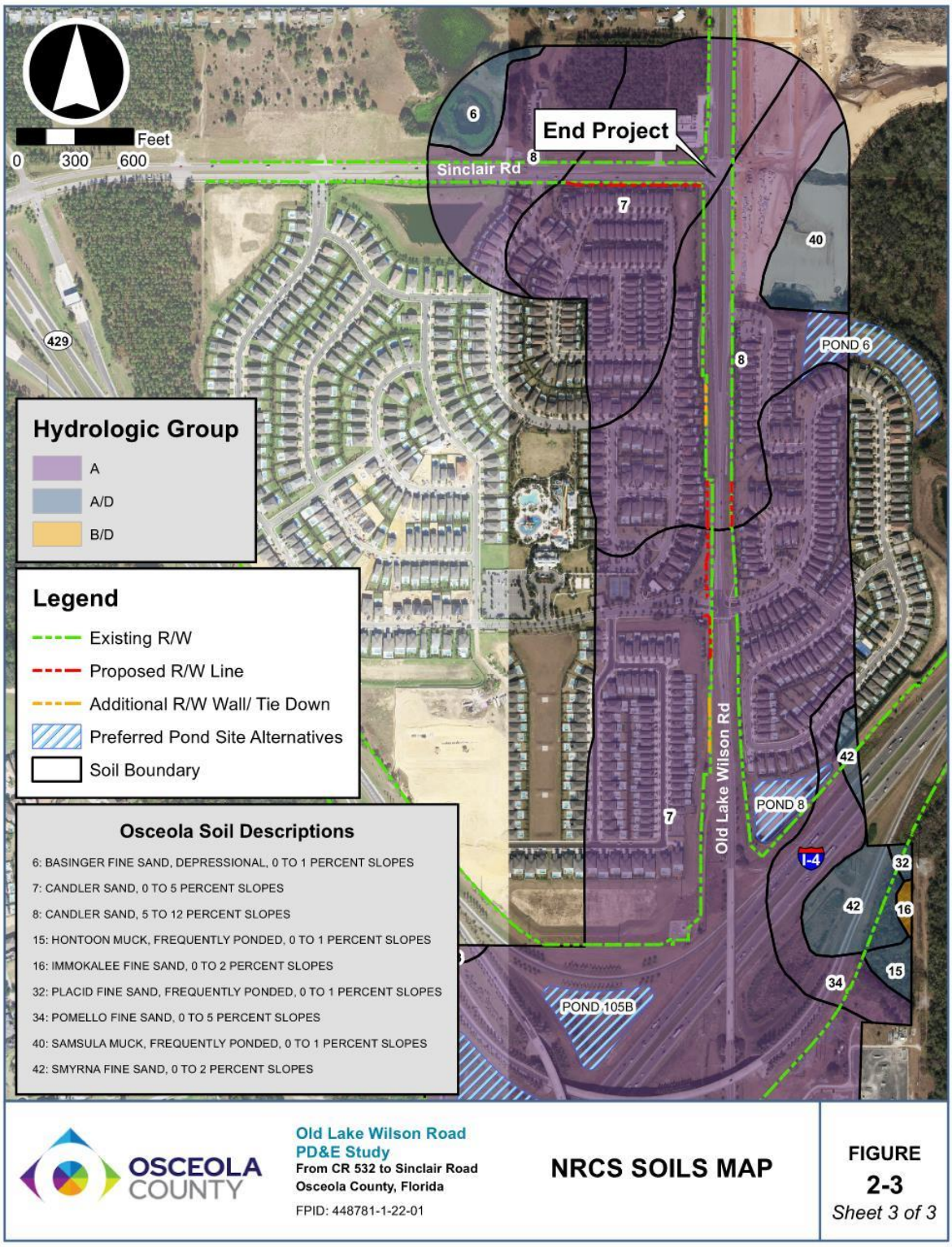


Figure 2-3: NRCS Soils Map



2.3 Public and Conservation Lands

Conservation Easements (CEs) associated with the Reunion Planned Development are located near the Davenport Creek crossing adjacent to the existing Old Lake Wilson Road right of way (Figure 2-4). These were permitted in SFWMD Conceptual Permit 49-01107-P "Magnolia Creek Multi Use Planned Development" issued May 9, 2001. The CE documentation is included in **Appendix C**. The CE east of the road is identified as Area 3 and the CE west of the road is identified as Area 8. The CE was recorded on October 7, 2002, in the Osceola County Official Record Book 2123, Pages 1031-1047. In addition, the CE west of the road was recorded again on January 3, 2003, in the Osceola County Official Record Book 2170, Pages 2341-2350. The CEs include the wetlands, surface waters, and 50-foot undisturbed upland buffers. The CE polygons adjacent to the road have been identified as W3E (east of the road) and W5SA (west of the road) and were permitted as part of a mitigation plan to offset adverse wetland impacts. Any direct impacts to either of these CE polygons will require a CE release by SFWMD, a modification to the mitigation plan of the existing SFWMD permit, mitigation to replace the mitigative value of the mitigation area, and mitigation to offset the proposed adverse wetland impacts.

2.4 Other Natural Features

No other significant natural features were identified within the limits of the Old Lake Wilson Road study area including special aquatic sites, sanctuaries and refuges, Wild and Scenic Rivers, Aquatic Preserves, and Outstanding Florida Waters; nor does it provide designated critical habitat or Essential Fish Habitat to federally protected or managed species.

Figure 2-4: Conservation Easement Map

SECTION 3 PROTECTED SPECIES AND HABITAT

A protected species and habitat assessment was conducted in accordance with the PD&E Manual, *Protected Species and Habitat* (FDOT, 2020) to determine the potential effects of the proposed transportation project on protected species and habitat. The term protected species refers to those species that are protected by law, regulation, or rule. The term listed species refers to species that are threatened or endangered at the federal or state level and identified in the Endangered Species Act (ESA) or 1973, as amended; the Florida Endangered and Threatened Species Act, Section 379.2291, Florida Statutes (F.S.); the Florida Regulated Plant Index (5B-40.0055, and Florida Administrative Code (FAC).

3.1 Efficient Transportation Decision Making

During the ETDM process, Planning and Programming Screens were prepared for the Old Lake Wilson Road study area. Environmental Technical Advisory Team (ETAT) representatives reviewed project information and provided comments about potential direct and indirect effects to resources under their jurisdiction. According to the ETDM Summary Report No. 14456, dated September 7, 2021, the USFWS and SFWMD indicated the project alternative may create a "Moderate" Degree of Effect (DOE) on protected species and habitat resources while the FWC and FDACS assigned a DOE of "Minimal".

3.2 Methodology

The study methodology included GIS analysis, agency coordination, agency database searches and field reviews. Ecologists familiar with Florida's protected species and natural habitats conducted general field surveys between January and July 2021. The field surveys were performed through pedestrian surveys conducted during daylight hours to document the presence or evidence of protected species utilizing habitat within the study area.

The study area included in ecological pedestrian surveys was generally defined as portions of the project corridor within and abutting the existing ROW that supported habitats with the potential to support protected species. These areas varied within the project corridor, specifically north and south of I-4. Habitats south of I-4 are almost all developed, including landscaping with turf and/or ornamental species. In these areas, pedestrian transects were limited to approximately 500 feet or until hardscape (parking areas, roads, etc.) was encountered. Conversely, some portions of the project corridor north of I-4 have not yet been developed and exhibit some characteristics of native habitats. Within these area, pedestrian transects were extended up to 1,000 feet perpendicular to the existing edge of pavement and limited by hardscape or other barriers matching methods used south of I-4. The ecologists also documented habitat types and predominant plant species, including general wetland limits, during the reviews.

3.3 Potentially Occurring Listed Species

A total of **58** protected species have the potential to occur in the Old Lake Wilson Road study area, according to the information obtained during the preliminary data collection. These include 5 reptile, 12 bird, 2 mammal, and 39 plant species shown in **Table 3-1**. Ecologists determined a species' potential occurrence in the study area based on its habitat preferences and distributions, existing site conditions, historical data, and multiple field surveys. The likelihood of occurrence was rated as low, moderate, high, or observed. A low rating indicated that the species is known to occur in Osceola County, but suitable

habitat is not present within the study area. A moderate rating indicates that the species occurs in Osceola County, suboptimal habitat or limited suitable habitat occurs within the study area, but the species has not been observed during field reviews or documented within the study area. A high rating indicates that the species occurs within Osceola County, suitable habitat is present within the study area and the species is suspected to occur or has been previously documented within the study area. Observed species are those that have been observed during the evaluation for this PD&E study. Protected species occurrences within the Old Lake Wilson Road study area are shown in **Figure 3-1**.

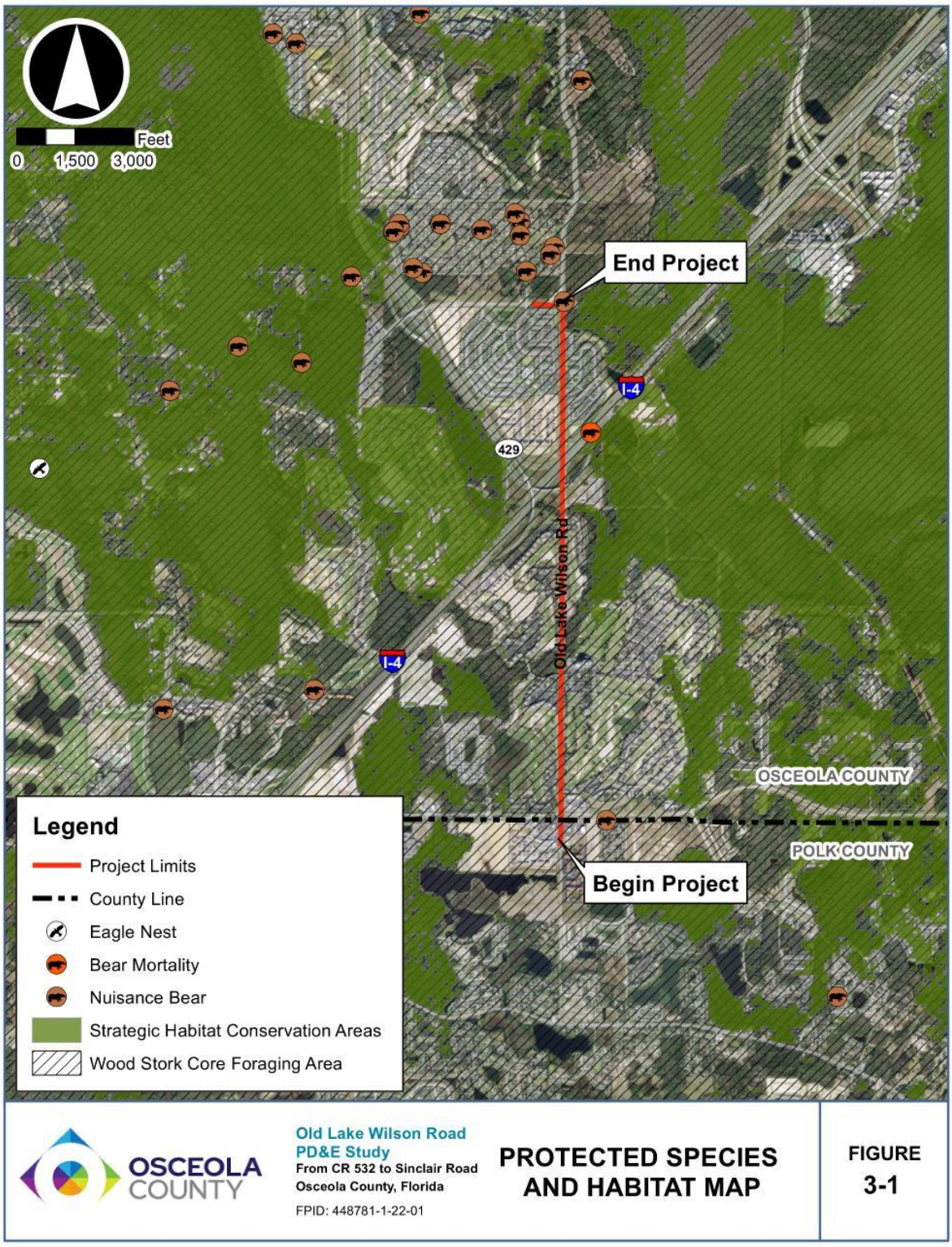
Table 3-1: Protected Species with Potential to Occur in the Old Lake Wilson Study Area

Common Name	Scientific Name	Status	Potential Occurence
Reptiles			
American Alligator	*Alligator mississippiensis*	FT (S/A)	MODERATE
Blue-tailed Mole Skink	*Plestiodon egregius*	FE	LOW
Eastern Indigo Snake	*Drymarchon couperi*	FT	MODERATE
Gopher Tortoise	*Gopherus polyphemus*	C / ST	MODERATE
Sand skink	Neoseps reynoldsi	FT	LOW
Birds			
Audubon's Crested Caracara	*Polyborus plancus audubonii*	FT	LOW
Southern Bald Eagle	*Haliaeetus leucocephalus*	BGEPA / MBTA	MODERATE
Everglade Snail Kite	*Rostrhamus sociabilis plumbeus*	FE	LOW
Florida Burrowing Owl	*Athene cunicularia floridana*	ST	MODERATE
Florida Sandhill Crane	*Antigone canadensis pratensis*	ST	MODERATE
Florida Scrub-jay	*Aphelocoma coerulescens*	FT	LOW
Little Blue Heron	*Egretta caerulea*	ST	MODERATE
Red-cockaded Woodpecker	*Dryobates borealis*	FE	LOW
Roseate Spoonbill	*Platalea ajaja*	ST	LOW
Southeastern American kestrel	*Falco sparverius Paulus*	ST	LOW
Tricolored Heron	*Egretta tricolor*	ST	MODERATE
Wood Stork	*Mycteria americana*	FT	MODERATE
Mammals			
Florida Black Bear	*Ursus americanus floridanus*	M	LOW
Southern Fox Squirrel	*Sciurus niger*	M	LOW
Plants			
Ashe's Savory	*Calamintha ashei*	ST	LOW
Avon Park Rabbit-bells	*Crotalaria avonensis**	FE	LOW
Britton's Beargrass	*Nolina brittonia**	FE	LOW
Carter's Warea	*Warea carteri**	FE	LOW
Celestial Lily	*Nemastylis floridana*	SE	LOW
Chapman's Sedge	*Carex chapmanii*	ST	LOW
Clasping Warea	*Warea amplexifolia**	FE	LOW
Cutthroat Grass	*Panicum abscissum*	SE	LOW
Florida Beargrass	*Nolina atopocarpa*	ST	LOW
Florida Bonamia	*Bonamia grandiflora**	FT/SE	LOW
Florida Jointweed	*Polygonella basiramia**	FE	LOW

Common Name	Scientific Name	Status	Potential Occurence
Florida Spiny-pod	*Matelea floridana*	SE	LOW
Florida Willow	*Salix floridana*	SE	LOW
Florida Ziziphus	*Ziziphus celata*	FE	LOW
Garrett's Scrub Balm	*Dicerandra christmanii**	FE	LOW
Giant Orchid	*Pteroglossaspis ecristata*	ST	LOW
Hartwrightia	*Hartwrightia floridana*	ST	LOW
Highlands Scrub Hypericum	*Hypericum cumulicola**	FE	LOW
Lewton's Polygala	*Polygala lewtonii**	FE	LOW
Many-flowered Grass-pink	*Calopogon multiflorus*	ST	LOW
Nodding Pinweed	*Lechea cernua*	ST	LOW
Papery Whitlow-wort	*Paronychia chartacea**	FT/SE	LOW
Piedmont Jointgrass	*Coelorachis tuberculosa*	ST	LOW
Pine Pinweed	*Lechea divaricate*	SE	LOW
Pinescrub Bluestem	*Schizachyrium niveum*	SE	LOW
Pine-woods Bluestem	*Andropogon arctatus*	ST	LOW
Plume Polybody	*Polypodium plumula*	SE	LOW
Pygmy Fringe Tree	*Chionanthus pygmaeus**	FE	LOW
Sand Butterfly Pea	*Centrosema arenicola*	SE	LOW
Sandlace	*Polygonella myriophylla**	FE	LOW
Scrub Blazing Star	*Liatris ohlingerae**	FE	LOW
Scrub Buckwheat	*Eriogonum longifolium var. gnaphalifolium**	FT/SE	LOW
Scrub Lupine	*Lupinus aridorum**	FE	LOW
Scrub Mint	*Dicerandra frutescens**	FE	LOW
Scrub Pigeon-wing	*Clitoria fragans**	FT/SE	LOW
Scrub Plum	*Prunus geniculata**	FE	LOW
Short-leaved Rosemary	*Conradina brevifolia**	FE	LOW
Star Anise	*Illicium parviflorum*	SE	LOW
Swamp Plume Polybody	*Polypodium ptilodon*	SE	LOW

E = Endangered T = Threatened M = FWC Managed C = Candidate
BGEPA = Bald and Golden Eagle Protection Act
MBTA = Migratory Bird Treaty Act
* Indicates Lake Wales Ridge plants

Figure 3-1: Protected Species and Habitat Map



3.4 Federally Listed Species and Designated Critical Habitat

The study area is located entirely within the USFWS Consultation Area (CA) for the Audubon's crested caracara, Everglade snail kite, Florida scrub-jay, red-cockaded woodpecker, sand skink and blue-tailed mole skink, and Lake Wales Ridge plants. A CA is intended to identify the geographical landscape where each federally listed species is most likely to occur. Portions of the study area also fall within two wood stork Core Foraging Areas (CFA), which include suitable foraging areas important to the reproductive success of known wood stork nesting colonies. The existing habitats in the study area may also support other federally protected species including the southern bald eagle, eastern indigo snake, and gopher tortoise, a candidate species. No designated critical habitat occurs within the study area.

3.4.1 Audubon's Crested Caracara

The project is located within the USFWS CA for the Audubon's crested caracara. It is a resident, non-migratory species in Florida that prefers grasslands and pastures in the south-central region of the state, particularly in Glades, Desoto, Highlands, Okeechobee, and Osceola Counties (USFWS, 1999). Historically, caracara have inhabited dry or wet prairies with scattered cabbage palms (*Sabal palmetto*) and occasionally used lightly wooded areas next to those prairies. Many of those areas were converted and frequently replaced by pastures with non-native sod-forming grasses that still support caracaras. The caracara is classified as threatened due to habitat loss and population decline (Layne, 1996). No critical habitat has been designated for the Audubon's crested caracara.

The corridor is highly developed and lacks the grassland habitat preferred by the caracara. Due to the lack of suitable nesting and foraging habitat within the proposed project area, a species-specific survey was not conducted. According to FNAI's Biodiversity Matrix Query, no individuals have been documented within the project vicinity. No suitable habitat nor individuals were observed during the field reviews. Due to the lack of suitable habitat, the proposed project will have "**no effect**" on the Audubon's crested caracara.

3.4.2 Everglade Snail Kite

The project is located within the USFWS CA for the Everglade snail kite. The Everglade snail kite is classified as endangered due to a "very small population and increasingly limited amount of freshwater marsh with sufficient water to ensure an adequate supply of snails" (Bureau of Sport Fisheries and Wildlife, 1973, p. 120). The USFWS has designated critical habitat for the snail kites, which consists of freshwater marshes near south Florida. The Everglade snail kite is a non-migratory subspecies only found in Florida, particularly near large watersheds (e.g., Everglades, Lake Okeechobee) and the shallow vegetated edges of lakes that support the apple snail (*Pomacea paludosa*), the primary component of the snail kite's diet.

The corridor is highly developed and lacks the freshwater marshes and large waterbodies suited for snails and snail kites. No critical habitat for the snail kite occurs within the project corridor. According to FNAI's Biodiversity Matrix Query, no individuals have been documented within the project vicinity. No suitable habitat and no individuals were observed during the field review. Due to the lack of suitable habitat, the proposed project will have "**no effect**" on the Everglade snail kite.

3.4.3 Florida Grasshopper Sparrow

The project is located within the USFWS CA for the Florida grasshopper sparrow. The Florida grasshopper sparrow was listed as endangered because of habitat loss and degradation resulting from conversion of native vegetation to improved pasture and agriculture (51 FR 27492). The Florida grasshopper sparrow is a subspecies of grasshopper sparrow that is endemic to the dry prairie region of central and south Florida. This subspecies is extremely habitat specific and relies on fire every two or three years to maintain its habitat (USFWS, 1999). The primary habitat consists of large (>50 hectares), treeless (less than one tree per acre), and relatively poorly drained prairies dominated by saw palmetto and dwarf oaks (Delany et al., 1985). It is known to occur only in Highlands, Okeechobee, Osceola, and Polk counties (Robertson & Woolfenden, 1992; Delany, 1996). No critical habitat has been designated for the Florida grasshopper sparrow.

The corridor is highly developed and lacks the prairie habitats preferred by the grasshopper sparrow. No suitable habitat and no individuals were observed during the field reviews. Due to the lack of suitable habitat, the proposed alternatives will have "**no effect**" on the Florida grasshopper sparrow.

3.4.4 Florida Scrub-jay

The project is located within the USFWS CA for the Florida scrub-jay. The Florida scrub-jay is classified as threatened due to habitat loss, degradation, and fragmentation (USFWS, 1987). They only occur on ancient dune ecosystems and scrub habitats of peninsular Florida. The entire population of scrub-jays is divided into five sub-regions associated with the major sand deposits of Florida.

The corridor is highly developed and lacks the scrub habitats preferred by the Florida scrub-jay. No suitable habitat and no individuals were observed during field reviews. According to the Florida Scrub-Jay Statewide Survey Map, 1992-1993 (Fitzpatrick et al, 1994) the nearest scrub-jays were documented more than a mile east of the start of the project limits and located within an area which has since been developed. Due to the lack of suitable habitat, the proposed project will have "**no effect**" on the Florida scrub-jay.

3.4.5 Red-Cockaded Woodpecker

The project is located within the USFWS CA for the red-cockaded woodpecker (RCW). The RCW is listed by the USFWS as endangered due to habitat loss, degradation and fragmentation (35 FR 16047). The species is still widely distributed throughout the state, but the largest populations occur on federally managed lands in the panhandle (USFWS, 1999). RCW habitat consists of pine stands or pine-dominated forests with little to no understory and numerous old growth pines, particularly longleaf pines. It excavates cavities in the living part of pine trees, typically choosing trees greater than 80 years old. No critical habitat has been designated for the RCW.

The corridor is highly developed and lacks old growth pines preferred by RCWs. No suitable habitat and no individuals were observed during the field review. Due to the lack of suitable habitat, the proposed project will have "**no effect**" on the red-cockaded woodpecker.

3.4.6 Sand Skink and Blue-tailed Mole Skink

The project is located within the USFWS CA for the sand and blue-tailed mole skinks. Both the sand skink and blue-tailed mole skink are classified as threatened due to habitat loss, degradation and fragmentation (USFWS, 1999). They possess a variety of morphological adaptations for a fossorial lifestyle, such as vestigial and practically non-functioning legs, greatly reduced eyes, and reduced or absent external ear openings. These species are highly adapted to life in sand, spending most of their time "swimming" in loose sand in search of food, shelter, and mates. Their "swimming" motion leaves a sinusoidal ("S"-shaped) track in the soil surface that can be identified through visual pedestrian surveys.

The USFWS sand skink guidelines identify skink habitat as areas that are (1) within the Consultation Area; (2) support suitable skink soils; and (3) at or above 82-feet above sea level. The study area is mapped as containing suitable soils (Candler, Pomello, Pompano, Samsula, and Smyrna) and is above 82 feet in elevation for skinks. For these reasons, a Skink Habitat Assessment was performed on June 16, 2021, to determine if the habitat within the right-of-way was suitable for skinks. Observed conditions within the habitat assessment areas include disturbance from current land use with surrounding development and roadways limiting connectivity to suitable habitat. Consequently, a request was submitted to the USFWS to exempt further survey efforts, specifically coverboard surveys, for skinks on September 7, 2021. A letter of concurrence from the USFWS was received on September 30, 2021, which verified the existing conditions would likely preclude sand skinks and blue-tailed mole skinks from utilizing habitats within the project area. Therefore, a coverboard survey for sand skinks or their tracks is not required. The Skink Habitat Assessment and USFWS exemption request can be viewed in **Appendix D**. USFWS concurrence documentation is provided in **Appendix E**. Due to the lack of suitable habitat, the proposed project will have "**no effect**" on skinks.

3.4.7 Lake Wales Ridge and Other Federally-Listed Plants

The project is located within the USFWS CA for the Lake Wales Ridge Plants group. The Lake Wales Ridge is the remnant of an ancient dune that runs north and south through peninsular Florida. According to FNAI and USFWS, 19 federally-protected plant species associated with the Lake Wales Ridge have potential to occur within the study area. These species are indicated with an asterisk (*) in **Table 3-1**.

The corridor is highly developed and plant species occurring within the existing right-of-way consists of bahiagrass (*Paspalum notatum*) and other turf grasses. The existing right-of-way was observed to be mowed and maintained with landscape features throughout the corridor. Due to development and limited natural areas occurring within the study area, these species are unlikely to occur within or adjacent to the project footprint. Ecologists did not observe federally protected plants during field reviews. Due to the lack of habitat and the project footprint remaining almost entirely within the existing mowed and maintained right-of-way, the proposed project will have "**no effect**" on federally listed plants.

3.4.8 Wood Stork

The wood stork is classified as threatened by the USFWS due to the reduction in food base attributed to a loss of suitable foraging habitat (SFH). The wood stork is associated with freshwater and estuarine wetlands that are used for nesting, roosting, and foraging. Nesting typically occurs in medium to tall trees that occur in stands located in swamps or islands surrounded by open water (Ogden, 1991; Rodgers et al.

1996). Preferred foraging habitat includes wetlands with a mosaic of submerged and/or emergent aquatic depressions in marshes or swamps where fish become concentrated during periods of receding water levels. No critical habitat has been designated for the wood stork.

According to the USFWS South Florida Ecological Service office, the habitats within 18.6 miles of a wood stork breeding colony are considered to be wood stork CFAs. The study area is entirely within the CFA of two wood stork colonies: Lake Russell and Gatorland. No wood storks or wood stork rookeries were observed during the field review. Minimal suitable habitat was observed adjacent to the bridge over Davenport Creek. The majority of this area is heavily forested and would preclude wood stork foraging. The Preferred Alternative will impact 0.02 acres of SFH. In accordance with the *South Florida Programmatic Concurrence Key for the Wood Stork* (USFWS, 2010) (**Appendix F**), the proposed project (A) impacts SFH at a location greater than 0.47 mile from a colony site; and (B) impacts to SFH is less than 0.5 acre; therefore, the proposed project "**may affect, but is not likely adversely affect**" the wood stork.

3.4.9 American Alligator

The American alligator is listed as threatened due to its similarity of appearance to the American crocodile (*Crocodylus actus*). This listing status allows for state-approved management and control programs in addition to federal protections. Because of these actions, the alligator is no longer biologically endangered or threatened. Alligators occur throughout Florida but prefer to use freshwater lakes and slow-moving rivers and their associated wetlands. No critical habitat has been designated for the American alligator.

American crocodiles inhabit brackish or saltwater habitats, which include ponds, coves, and creeks within mangrove swamps. The northern end of the crocodile's range is in South Florida, where they can be found along the coast and occasionally encountered inland in freshwater habitats along the southern Florida coast. The proposed project is not within the range of the American crocodile nor near the Florida coast. There are no brackish or saltwater habitats within the proposed project area that could support crocodiles.

Suitable habitat for the American alligator was observed within the study area. The habitat includes a creek that runs through the forested wetlands and the reservoirs within the study area. No alligators were observed during the field review. While the project will impact alligator habitat, the extent of impacts relative to habitat within the corridor will be minimal and alligators will be able to continue to fulfill their life history strategies. Additionally, their listing status is based on their similarity of appearance to the American crocodile, whose habitat requirements are not supported within the proposed project. The USFWS recognizes that the American alligator is biologically secure throughout its range (52 FR 21059-21064). Based on the information provided above, the proposed project will have "**no effect**" on the American alligator.

3.4.10 Eastern Indigo Snake

The eastern indigo snake is listed by the USFWS as threatened due to over-collecting for the pet trade as well as habitat loss and fragmentation (USFWS, 1999). The eastern indigo snake is widely distributed throughout central and south Florida. They occur in a broad range of habitats, from scrub and sandhill to wet prairies and mangrove swamps. Eastern indigo snakes are mostly closely associated with habitats

occupied by gopher tortoises whose burrows provide refugia from cold or desiccating conditions (USFWS, 1999). No critical habitat has been designated for the eastern indigo snake.

Suitable habitat for the eastern indigo snake was observed within the study area. No eastern indigo snakes were observed during the field review. Suitable habitat for the gopher tortoise was observed and one gopher tortoise burrow was identified within the proposed project area. A 100% gopher tortoise survey was not conducted during this PD&E Study but will be required before construction activities commence. To address any potential effects to the eastern indigo snake to the eastern indigo snake, all potentially occupied gopher tortoise burrows within the limits of construction will be excavated and the *Standard Protection Measures for the Indigo Snake* (USFWS, 2013; **Appendix G**) will be implemented during construction activities. As a result, the proposed project "**may affect, but is not likely to adversely affect**" the eastern indigo snake. This effect determination was made using the following sequence from the *Eastern Indigo Snake Effect Determination Key* (USFWS, 2017) (**Appendix H**): A-B-C-D-E.

3.4.11 *Gopher Tortoise*

The gopher tortoise is a Candidate for listing under the ESA by the USFWS and listed as threatened by the FWC. They occur in the southeastern Coastal Plain from Louisiana to South Carolina; the largest portion of the population is located in Florida (FWC, 2012). Gopher tortoises require well-drained, sandy soils for burrowing and nest construction, with a generally open canopy and an abundance of herbaceous ground cover, particularly broadleaf grasses, wiregrass (*Aristida stricta*), legumes, and fruits for foraging. Gopher tortoises can be found in most types of upland communities, including disturbed areas and pastures. No critical habitat has been designated for the gopher tortoise.

Suitable gopher tortoise habitat was observed within the study area. A 100% gopher tortoise survey was not conducted. One gopher tortoise burrow was observed within the study area, but not within the footprint of the Preferred Alternative. No individual gopher tortoises were observed during the field review. A permit may be necessary from FWC if tortoises are present within 25-feet of any permanent or temporary construction area. Based on the information provided above, the proposed project "**may affect, but is not likely to adversely affect**" the gopher tortoise.

3.5 State Listed Species

3.5.1 Florida Burrowing Owl

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

Due to development and limited natural areas occurring within the study area, minimal suitable habitat was observed within the study area. The golf course and open land areas adjacent to the existing right-of-way may provide suitable habitat for the burrowing owl. Ecologists did not observe burrowing owls or their burrows during the field surveys. Burrowing owls usually dig their own burrows but are known to utilize gopher tortoise and armadillo burrows. As aforementioned, one gopher tortoise burrow was

observed within the study area during field reviews. Pre-construction surveys will be conducted to adhere to the components of the Imperiled Species Management Plan (ISMP) and the *Conservation and Permitting Guidelines for the Florida Burrowing Owl* (FWC, 2018a); therefore, there is "**no adverse effect anticipated**" for the burrowing owl as a result of the proposed project. If burrowing owls are observed onsite, coordination with the FWC will occur to discuss avoidance, minimization, and permitting options as applicable.

3.5.2 Florida Sandhill Crane

The Florida sandhill crane is listed by the FWC as threatened due to the loss and degradation of nesting and foraging habitat from development and hydrologic alteration to their potential nesting habitat (FWC, 2013b). It is widely distributed throughout most of peninsular Florida. Sandhill cranes rely on shallow marshes for roosting and nesting and open upland and wetland habitats for foraging (Wood and Nesbitt, 2001).

Ecologists did not observe Florida sandhill cranes during field surveys. Suitable foraging habitat occurs throughout the study area, and consists primarily of the roadway right-of-way, adjacent golf course, and existing stormwater ponds. Suitable nesting habitat occurs within the existing stormwater ponds associated with I-4. Avoidance measures that eliminate the need for FWC take permitting include: (1) avoid impacts to natural wetlands used for breeding, feeding, or sheltering; (2) avoid activities within 400 feet of active nest; and (3) avoid land use conversion within 1,500 feet of the nest site until after young are capable of sustained flight. A pre-construction survey will be conducted to adhere to the components of the ISMP and the Conservation and Permitting Guidelines for the Sandhill Crane; therefore, "**no adverse effect anticipated**" for the Florida sandhill crane resulting from the proposed project.

3.5.3 Southeastern American Kestrel

The southeastern American kestrel is listed by the FWC as threatened due to habitat loss, degradation and fragmentation, as well as lack of regulatory protection (FWC, 2013c). The southeastern American kestrel is the only non-migratory, permanent resident kestrel of Florida. However, the seasonal occurrence of a migratory subspecies of the northern American kestrel (*Falco sparverius sparverius*) occurs from September through March in Florida. Confident identification of southeastern American kestrels can only be made during the portion of the breeding season when migratory species are not present (FWC, 2013c). The southeastern American kestrel is a secondary cavity nester, preferring habitats of sandhill and open pine savannah maintained by fire. They can be found in pine habitats, woodland edges, prairies, pastures, and agricultural lands.

Ecologists did not observe kestrels or potential cavity trees during field surveys. Suitable habitat for the southeastern American kestrel is limited within the study area, and primarily consists of foraging habitat associated with the adjacent golf course. ETAT comments from FWC recommended that surveys for southeastern American kestrels be conducted during breeding season (April to August), with surveys from May to July being ideal to avoid confusion with the migratory subspecies. However, areas of suitable habitat near the northern terminus of the project, consisting of coniferous plantations, have been recently developed and no longer provide suitable habitat. Activities within the 492-foot (150-meter) buffer of an active nest are considered to cause take. Preconstruction surveys will be conducted in accordance with the *Species Conservation Measures and Permitting Guidelines for the Southeastern American Kestrel*

(FWC, 2020) as applicable if potential nesting habitat is to be impacted during future project phases. Based on the information provided, there is "**no adverse effect anticipated**" for the southeastern American kestrel.

3.5.4 Imperiled Wading Birds

Three wading birds have the potential to occur in the study area. These species are the little blue heron, roseate spoonbill, and tricolored heron. These species are listed by the FWC as threatened due to the loss and degradation of habitat, particularly from hydrologic alterations to their essential foraging areas (FWC, 2013d). Little blue herons, roseate spoonbills and tricolored herons are widely distributed throughout peninsular Florida. Wading birds depend on healthy wetlands and vegetated areas suitable for resting and breeding which are near foraging areas (FWC, 2013d). They forage in freshwater, brackish, and saltwater habitats. They tend to nest in multi-species colonies of a variety of woody vegetation types including cypress, willow, maple, black mangrove and cabbage palm (FNAI, 2001).

Ecologists did not observe any imperiled wading birds during field surveys. No wading bird rookeries occur within the study area. No nesting activity was observed during field surveys. Potential foraging habitat is limited to the existing stormwater ponds and Davenport Creek. Wetland impact avoidance and minimization measures have been implemented, including utilizing the existing stormwater ponds. Compensatory mitigation will be provided for adverse impact to wetlands. These measures are anticipated to mitigate impacts to these species. Therefore, there is "**no adverse effect anticipated"** for wading birds resulting from the proposed project.

3.5.5 State Listed Plant Species

Through regulation by the FDACS Division of Plant Industry, Florida protects plant species native to the state that are endangered, threatened, or commercially exploited. The Florida Regulated Plant Index includes all plants listed as endangered, threatened, or commercially exploited as defined in Chapter 5B-40.0055, F.A.C. According to FNAI, 19 state listed plant species have potential to occur within the proposed project area (**Table 3-1**).

The corridor is highly developed and plant species occurring within the existing right-of-way consist of primarily of bahiagrass and other turf grasses. Due to development and limited natural areas occurring within the study area, these species are unlikely to occur within or adjacent to the project footprint. Ecologists did not observe any protected plant species during field reviews. The existing right-of-way was observed to be mowed and maintained with landscape features throughout the corridor. Due to the lack of habitat and the project footprint remaining almost entirely within the existing mowed and maintained right-of-way, there is "**no effect anticipated**" as a result of the proposed project to state listed plant species.

3.6 Other Protected Species or Habitats

3.6.1 Southern Bald Eagle

The bald eagle was removed from the ESA in 2007 and Florida's Endangered and Threatened Species list; however, it remains protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. Bald eagles tend to nest in the tops of very tall trees that provide unobstructed lines of sight to nearby habitats, particularly lakes and other open waters. Because eagles are piscivorous (fish-eating)

raptors, nearly all eagles' nests occur within 1.8 miles of water (Wood et.al., 1989). No critical habitat has been designated for the bald eagle.

According to the FWC's Eagle Nest locator and the Audubon Florida EagleWatch Public Nest App, the nearest nest (Nest OS231) is located more than 1.5 miles from the project corridor. The proposed project will have no impact on the bald eagle since the project activities will occur outside of the 660-foot buffer protection zone for bald eagle nests.

3.6.2 Florida Black Bear

The Florida black bear was removed from Florida's Endangered and Threatened Species list in 2018; however, it remains protected under Chapter 68A-4.009 F.A.C., Florida Black Bear Conservation Plan. The study area is located in the common range of the FWC South Central Bear Management Unit (BMU). Common areas have the second highest density of bear locations, and these areas are where bears are spreading from their core areas and spending a fair amount of their time.

The black bear utilizes a large variety of habitats but prefer large contiguous forested tracts with mast-producing trees and berry producing shrubs. Due to the existing development within the Old Lake Wilson Road corridor, these types of habitats are limited and found outside the project area. Suitable habitat occurs adjacent to the study area, particularly the Reedy Creek corridor. The mobility of bears and other wildlife though the project area is limited by the surrounding development as evidence by the FWC data. The most current FWC data for the Florida black bear was reviewed and documents one bear mortality (2017) and one recent bear call (2021) within the study area (**Figure 3-1**). The proposed project will have no impact on the Florida black bear based on the lack of habitat and bear utilization within the project corridor, as the majority of bear activity occurs outside the project limits in areas of suitable habitat associated with the Reedy Creek corridor.

3.6.3 Southern Fox Squirrel

The southern fox squirrel was removed from Florida's Endangered and Threatened Species list in 2018; however, it remains protected under Chapter 68A-4001, 68A-1.004, and 68A-29.002(1)c F.A.C. The southern fox squirrel inhabits open, fire-maintained longleaf pine, turkey oak, sandhills, and flatwoods (FNAI, 2001; FWC, 2013). Additionally, they are known to utilize suburban habitats including parks and golf courses.

Ecologists did not observe individuals or nests during the field. Additionally, minimal suitable habitat was observed within the study area and is limited to the adjacent golf course as recent construction has eliminated suitable habitat near the northern terminus of the proposed project. The proposed project will have no impact on the southern fox squirrel due to the lack of suitable habitat within the proposed project area.

3.6.4 Strategic Habitat Conservation Areas

Strategic Habitat Conservation Areas (SHCA) are lands in need of protection to maintain natural communities and viable populations of many species that are indicators of the state's biological diversity. In 1994, FWC biologists completed a project entitled Closing the Gaps in Florida's Wildlife Habitat Conservation System (Cox et al 1994), which assessed the security of rare and imperiled species on existing conservation lands in Florida. This research identified important habitat areas in Florida with no

conservation protection. These SHCA serve as a foundation for conservation planning for species protection through habitat conservation.

SHCA occurs within the study area (**Figure 3-1**). The SHCA occurs within the wetlands toward the center of the project limits and again in the upland forests at the end of the project limits. No regulatory action is required for impacts to SHCA.

3.6.5 Aquatic Preserves and Outstanding Florida Waters

Special protection is given to Outstanding Florida Waters (OFW) per Section 62.302.700 F.A.C. Activities or discharges within an OFW, or which significantly degrade an OFW, must meet a more stringent public interest test as outlined in Section 373.414(1)(a), F.S. (2020). There are no OFWs within the Old Lake Wilson Road study area.

SECTION 4 WETLANDS AND OTHER SURFACE WATERS

Ecologists performed an evaluation to determine if wetlands or OSW occur within the study area. The wetland evaluation relied on literature reviews and field surveys to identify the location, extent, and functional value of wetlands in the study area; the potential direct, indirect, or cumulative effects of the project's actions to those wetlands; and available mitigation options to satisfy permit requirements from regulatory agencies. This wetland evaluation was performed in accordance with the Presidential Executive Order (EO) 11990 ("Protection of Wetlands"); U.S. Department of Transportation (USDOT) Order 5560.1A ("Preservation of the Nation's Wetlands"); Federal Highway Administration Technical Advisory T6640.8A regarding the preservation of environmental documents; and the Wetlands and Other Surface Waters of the FDOT's PD&E Manual.

4.1 Efficient Transportation and Decision Making

According to the ETDM Summary Report No. 14456, dated September 7, 2021, the SFWMD indicates the project alternative may create a "Moderate" Degree of Effect (DOE), while the FDEP, EPA, and USFWS indicate a "Minimal" DOE to wetlands and surface waters. Primary issues include an increase in stormwater runoff and pollutants into surface waters and wetlands and the need for an Environmental Resource Permit and an environmental evaluation.

4.2 Methodology

The study methodology included GIS analysis, ETAT comments review, agency coordination, agency database searches, and field reviews. **Section 2** lists the data sources utilized for review. Ecologists familiar with Florida's natural plant communities conducted a wetland evaluation to identify wetlands and OSW as part of the Old Lake Wilson Road Study. A formal wetland delineation to determine jurisdictional boundaries was not performed; however, the general limits of wetlands and other surface waters were identified in the field using the criteria established in Rule 62-340, F.A.C., and the USACE's Wetland Delineation Manual (USACE, 1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (USACE, 2010). Additionally, wetland boundaries were verified by existing environmental permits throughout the corridor. The wetland limits have not been reviewed by SFWMD, FDEP, or USACE. Wetlands and surface waters were classified per the FLUCFCS (FDOT, 1999) and the Classification of Wetlands and Deepwater Habitat of the United States

(NWI) (Cowardin et al. 1979). The UMAM was utilized, per Chapter 62-345, F.A.C, for the functional assessment of wetlands within the Old Lake Wilson Road Study.

4.3 Wetland Habitats and Other Surface Waters

Wetlands and other surface waters with potential to be affected by the proposed project were identified within the study area (**Figure 4-1**). The project corridor is highly developed with limited natural wetland systems identified within the project area. The following section includes a brief description of each wetland type and OSW within the study area. **Table 4-1** details each wetland, including wetland identification number, FLUCFCS classification, and NWI classification. FLUCFCS classifications are based on the results of the data analysis and field reviews of the study area. NWI classifications were not altered and are based on the listed classification of the nearest NWI wetland system as applicable.

4.3.1 Mixed Wetland Hardwoods

FLUCFCS: 617
NWI: PFO1C
Wetlands: WL 1A, WL 1B, WL 2A, WL 2B, WL 4, WL 5,

Mixed wetland hardwood forest is associated with Davenport Creek and an unnamed tributary to Davenport Creek located south of I-4. Other wetlands occur within the infield of the I-4 Interchange. The wetlands within WL 1A and WL 1B and their 50-foot upland buffers outside of the right of way are located within a conservation easement (see Section 2.3). Observed vegetation within these habitats include bald cypress (*Taxodium distichum*), red maple (*Acer rubrum*), water oak (*Quercus nigra*), cabbage palm (*Sabal palmetto*), Carolina willow (*Salix caroliniana*), elderberry (*Sambucas canadensis*), saltbush (*Baccharis halimifolia*), Peruvian primrose-willow (*Ludwigia peruviana*), cinnamon fern (*Osmunda cinnamomea*), cattail (*Typha* spp.), soft rush (*Juncus* spp.), pickerel weed (*Pontederia cordata*), and duckweed (*Lemna* spp.). The Preferred Alternative may result in approximately 0.480 acres of direct wetland impacts and 0.338 acres of secondary impacts. No impacts to the adjacent CEs are anticipated as a result of the Preferred Alternative.

4.3.2 Wetland Forested Mixed

FLUCFCS: 630
NWI: PFO1C
Wetlands: WL 3

Wetland forested mixed habitat occurs adjacent to the eastern right-of-way of the I-4 Interchange. Observed vegetation includes red maple, cabbage palm, slash pine (*Pinus elliotti*), water oak, Carolina willow, saltbush, and cinnamon fern. No impacts to WL 3 are anticipated.

4.3.3 Freshwater Marshes

FLUCFCS: 641
NWI: PEM1C, PAB3H
Wetlands: WL 6

Freshwater marsh is located west of the gas station at the intersection of Old Lake Wilson Road and Sinclair Road. This marsh is associated with a natural pond and also include emergent vegetation.

Vegetation includes saltbush, soft rush, maidencane (*Panicum hemitomon*), cordgrass (*Spartina bakeri*), and water lily (*Nymphaea* spp.). No impacts to WL 6 are anticipated.

4.3.4 Streams and Waterways

FLUCFCS: 510
NWI: PFO1C
Surface Waters: Davenport Creek (SW 2)

Streams and waterways include rivers, creeks, canals, and other linear bodies of water. Davenport Creek is located north of the Gathering Drive overpass. Davenport Creek discharges into Reedy Creek. Davenport Creek may be within State Owned Sovereign and Submerged Lands (SSL). A determination from FDEP will be required to verify the presence and/or location of SSL within the study area. Use of SSL will require authorization in the form of modifying the existing Public Easement or recording a new Public Easement per Chapter 18-21, F.A.C. The Preferred Alternative may result in 0.047 acres of direct impacts to Davenport Creek (SW 2) associated with the Davenport Creek bridge replacement. Impacts to SW2 are considered temporary and not adverse, as the creek will remain in the post construction condition; therefore, no mitigation is anticipated.

4.3.5 Reservoirs

FLUCFCS: 530
NWI: N/A
Surface Water: SW 1, SW 3, SW 4, SW 5, SW 6, SW 7, SW 8, SW 9

Reservoirs are artificial impoundments of water used for irrigation, flood control, municipal and rural water supplies. Reservoirs occur throughout the study area; however, they are all permitted stormwater ponds. Impacts to these OSWs will not require mitigation. The Preferred Alternative may result in 0.006 acres of impacts to SW 1.

Figure 4-1: Wetlands and Surface Waters Map

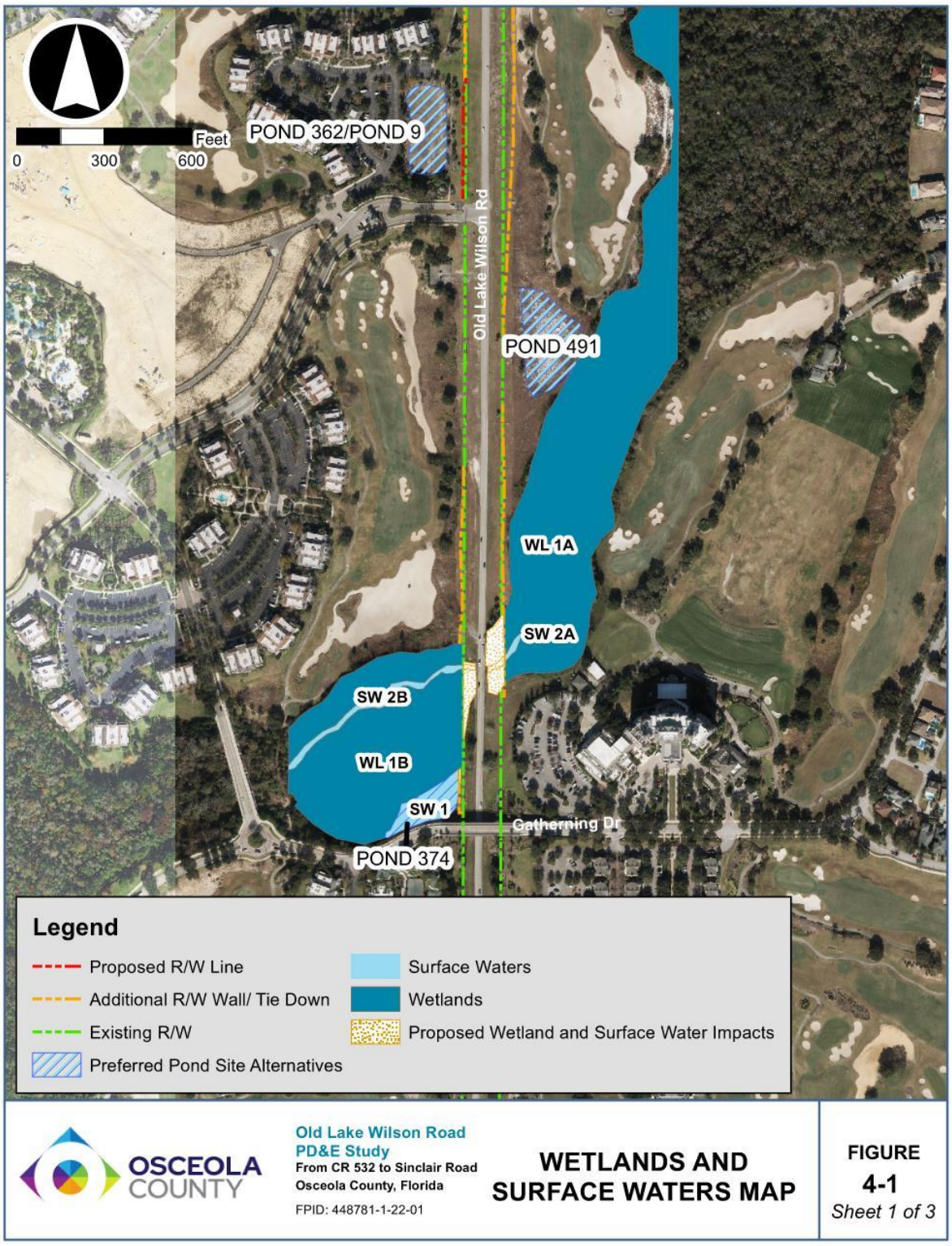


Figure 4-1: Wetlands and Surface Waters Map

Figure 4-1: Wetlands and Surface Waters Map

Table 4-1: Wetlands and Other Surface Waters in the Old Lake Wilson Road Study Area

Wetland Number	FLUCFCS Classification	USFWS NWI Classification	Description
WL 1A	617	PFO1C	Mixed Wetland Hardwoods
WL 1B	617	PFO1C	Mixed Wetland Hardwoods
WL 2A	617	PFO1C	Mixed Wetland Hardwoods
WL 2B	617	PFO1C	Mixed Wetland Hardwoods
WL 3	630	PFO1C	Wetland Forested Mixed
WL 4	617	PFO1C	Mixed Wetland Hardwoods
WL 5	617	PFO1C	Mixed Wetland Hardwoods
WL 6	641	PEM1C/PAB3H	Freshwater Marsh
SW 1	530	N/A	Reservoirs
SW 2A	510	PFO1C	Streams and Waterways
SW 2B	510	PFO1C	Streams and Waterways
SW 3	530	N/A	Reservoirs
SW 4	530	N/A	Reservoirs
SW 5	530	N/A	Reservoirs
SW 6	530	N/A	Reservoirs
SW 7	530	N/A	Reservoirs
SW 8	530	N/A	Reservoirs
SW 9	530	N/A	Reservoirs

4.4 Wetland and Other Surface Water Impacts

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

4.4.1 Direct Impacts

The Preferred Alternative will result in **0.49 acres** of direct impacts to wetlands and **0.05 acres** of direct impacts to other surface waters. (**Table 4-2**). No direct impacts to the CEs associated with Davenport Creek are anticipated from the construction of the Preferred Alternative.

4.4.2 Indirect Impacts

The Preferred Alternative may create indirect impacts to wetlands. Adverse indirect impacts (secondary impacts) were calculated using a 25-ft buffer from the direct wetland impact. The Preferred Alternative will result in 0.34 acres of secondary impacts (**Table 4-2**).

4.4.3 Cumulative Impacts

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

Table 4-2: Potential Wetland and OSW Impacts from the Preferred Alternative

Wetland ID	FLUCFCS	Description	Direct Impact (Acres)	Secondary Impact (Acres)
WL 1A	617	Mixed Wetland Hardwoods	0.20	0.08
WL 1B	617	Mixed Wetland Hardwoods	0.01	0.02
WL 2A	510	Mixed Wetland Hardwoods	0.06	0.09
WL 2B	510	Mixed Wetland Hardwoods	0.22	0.15
SW 1	530	Reservoirs	0.01	0
SW 2A	510	Streams and Waterways	0.03	0
SW 2B	510	Streams and Waterways	0.01	0
Total Impacts				
Direct Wetland Impacts		Secondary Wetland Impacts		Surface Water Impacts
0.49 (ac)		0.34 (ac)		0.05 (ac)

4.5 Avoidance and Minimization

The Preferred Alternative was designed to avoid and minimize wetlands, OSW's, and protected species and habitat impacts to the greatest extent practicable throughout the PD&E study. This was accomplished by utilizing existing stormwater ponds and designing the Build Alternatives within the existing right-of-way. Additionally, the bridge crossing at Davenport Creek includes replacement with a concrete box culvert (CBC) bridge crossing and avoids and minimizes impacts associated with replacement with a single or multi-span bridge structure. Avoidance and minimization measures will continue to be evaluated during the design and permitting phases of the proposed project.

4.6 Wetland Assessment

Wetlands and OSW with potential to be affected by the proposed project were identified within the Old Lake Wilson Road study area. The wetland assessment was conducted in accordance with the UMAM, as described in Chapter 62-345, F.A.C. The UMAM is the state-wide methodology for determining the functional value provided by wetlands and other surface waters and the amount of mitigation required to offset adverse impacts to those areas for regulatory permits. The proposed impacts to the existing permitted stormwater facilities were not included in the wetland assessment as mitigation is not anticipated. The results of the UMAM assessment are provided in **Table 4-3**. These values may be refined

during the design and permitting phases of the proposed project. UMAM data forms are provided in **Appendix I**.

Table 4-3: Proposed Wetland Functional Loss Due to Impacts from Preferred Alternative

Wetland ID	Wetland Type	Impact Type	UMMA Delta	Impact Area (ac.)	Functional Loss
WL 1A, 1B	Forested	Direct	0.60	0.20	0.120
		Secondary	0.07	0.10	0.007
WL 2, 2A	Forested	Direct	0.57	0.28	0.159
		Secondary	.07	.24	0.016
				Total Direct Functional Loss	**0.279**
				Total Secondary Functional Loss	**0.023**
				Total Functional Loss	**0.302**

4.7 Wetlands Finding

The Preferred Alternative was evaluated for impacts to wetlands in accordance with EO 11990 and USDOT Order 5560.1A . The Preferred Alternative will be constructed almost entirely within the existing right-of-way to avoid impacts to wetlands. Unavoidable wetland and surface impacts outside the existing right-of-way are associated with the replacement of the bridge culvert at Davenport Creek. Due to the age and condition of the existing bridge, it was determined that replacement was the only option. In order to minimize impacts to wetlands, the Preferred Alternative proposes to replace the existing bridge culvert with a new four cell, 12'x8' concrete box colvert to accommodate the proposed improvements.

Based on the above considerations, it is determined that there is no practicable alternative to the proposed construction in wetlands and the proposed action includes all practicable measures to minimize harm to wetlands which may result from such use.

4.8 Conceptual Mitigation

The proposed project will directly impact 0.48 acres of jurisdictional wetlands and have secondary impacts to 0.338 acres of adjacent wetlands. Mitigation for unavoidable adverse wetland impacts (0.259 UMAM units) which will result from the construction of this project will be mitigated pursuant to Section 373.4137, F.S., to satisfy all mitigation requirements of Part IV of Chapter 373, F.S., and U.S.C. §1344. Compensatory mitigation for this project will be completed through the use of mitigation banks and any other mitigation options that satisfy state and federal requirements. The study area is located within the Reedy Creek Regulatory Basin. Currently, multiple mitigation banks within the impacted watershed, including Reedy Creek, Southport Ranch, Florida, and Bullfrog Bay mitigation banks, have available credits to provide the appropriate mitigation.

SECTION 5 ESSENTIAL FISH HABITAT

NMFS is the regulatory agency responsible for the nation's living marine resources and their habitats, including EFH. This authority is designated by the Magnuson-Stevens Fishery Conservation and

Management Act (MSFCMA), as amended. The MSFCMA designates EFH as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity" (16 U.S.C. § 1802(10).

In accordance with the MSFMCA, Section 7 of the ESA, and Part 2, Chapter 17, Essential Fish Habitat, of the FDOT's PD&E Manual, the Old Lake Wilson Road Study area was evaluated for potential EFH. According to the ETDM Summary Report No. 14456, dated September 7, 2021, NMFS staff concluded that the project will not impact EFH; therefore, an EFH assessment is not required.

SECTION 6 ANTICIPATED PERMITS

Most land alteration projects, including construction and maintenance activities, are regulated by numerous state and federal agencies and require environmental permits prior to the commencement of construction. Permit applications are reviewed by regulatory agencies for their consistency with regulatory criteria and/or the project's effect on resources (e.g., navigation, wetland function, protected species and their habitats). During the permit application process, the lead regulatory agencies may request input from other agencies to ensure the project will not adversely impact a regulated or protected resource under their purview. For protected species, a species-specific permit may be required prior to issuance of the environmental permit. The following is a list of anticipated permits needed from state and federal agencies for the proposed project.

6.1 State 404 Permit

Section 404 of the CWA established a program to regulate the discharge of dredge or fill material into the waters of the United States, including wetlands. Responsibility for Section 404 was previously administered by the USACE. However, the State of Florida requested and was granted authority on December 22, 2020 (85 FR 83553), to operate the Section 404 Program for work in most non-tidal waters in the state. The State 404 Program is administered by the FDEP. All waters of the United States with potential to be impacted by the proposed project are not retained by the USACE and are therefore assumed by FDEP. Based on the amount of wetland and surface water impacts, a State 404 Individual Permit is anticipated.

6.2 National Pollutant Discharge Elimination System Permit

As authorized by the CWA, the National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating point source discharges from construction activities. The EPA has delegated its authority to implement the NPDES program to FDEP. Based on potential ground disturbance of over one acre, it is anticipated that the NPDES permit will be required for the proposed project.

6.3 SFWMD Environmental Resource Permit

The Environmental Resource Permit (ERP) program is jointly administered by the FDEP and the five water management districts in the state. Section 373, FS, and Chapter 62.330, FAC, outline the rules and regulations and establish thresholds for when an environmental resource permit is required from the state. The project is located within the jurisdiction of the SFWMD. An Individual ERP is anticipated for the proposed project. The ERP will serve as the Water Quality Certification under Section 401 to the CWA and is required for the FDEP 404 permit, above.

Two CEs associated with previous SFWMD permits occur within the study area. Impacts to the CEs will need to be addressed during permitting. Both easements are associated with SFWMD Permit No. 49-01107-P. The first was recorded on October 7, 2002 (OR2123/1031), and the second was recorded on January 3, 2003 (OR2170/2341). Proposed construction within an existing CE will require coordination with SFWMD staff for a partial CE release. This request includes using UMAM to determine the ecological value of the portion of the easement to be released, and a proposal of either an exchange of land that has an equal or greater ecological value than the easement being released, or the requestor would purchase mitigation credits that provide equal or greater ecological value in exchange for the release. Once the exchange or mitigation credit proposal is deemed appropriate by SFWMD staff, they recommend action to the district's Governing Board. The recommendation is then added to the board's public meeting agenda. This is typically scheduled 60 days after the SFWMD receives a complete release request.

6.4 Gopher Tortoise Relocation Permit

Gopher tortoises and their burrows are protected by Chapter 68A-27.003, F.A.C. A gopher tortoise relocation permit must be obtained from the FWC before disturbing burrows or if construction activities occur within 25 feet of a gopher tortoise burrow. The number of gopher tortoise burrows located within 25 feet of the project footprint will determine the type of gopher tortoise relocation permit that is needed. Based on the results of the pedestrian field surveys, the proposed project will require a "10 or Fewer Burrows" permit from FWC. A 100% gopher tortoise survey should be completed during the design of the project to finalize potential permit needs. Surveys, permitting, excavation, and relocation must be performed by an FWC Authorized Gopher Tortoise Agent.

SECTION 7 CONCLUSION

The Preferred Alternative will provide additional capacity on Old Lake Wilson Road, consistent with existing long-range transportation plans for the roadway and region and the stated purpose and need for this PD&E Study. The Preferred Alternative will avoid and minimize impacts to wetlands, protected species, and their habitats to the greatest extent practicable. Additional coordination with wildlife agencies during the design and permitting phase and additional wildlife surveys may be required prior to or during construction.

The Preferred Alternative will result in unavoidable wetland and other surface water impacts. During the design phase, the final impacts will be determined, and the appropriate mitigation will be calculated to satisfy the requirements of 33 U.S.C. § 1344 and Part IV of Chapter 373, FS.

7.1 Implementation Measures

To ensure the project will not adversely affect protected species or contribute to water quality degradation, the following measures will be implemented:

- Conduct a 100% pre-construction survey for the gopher tortoise in accordance with 68A-27.003 and the current FWC *Gopher Tortoise Permitting Guidelines* and coordinate with FWC to receive necessary permit authorizations prior to construction.
- Conduct a pre-construction survey for the Florida burrowing owl in accordance with 68A-27.003(a), 68A-27.001(4), F.A.C. and the current FWC *Florida Burrowing Owl Species Conservation*

and Permitting Guidelines and coordinate with FWC to receive the necessary authorizations and implement the appropriate conservation measures as needed prior to construction.

- Conduct a pre-construction survey for the Florida sandhill crane in accordance with 68A-27.003 F.A.C and the Florida Sandhill Crane Conservation Measures and Permitting Guidelines and coordinate with FWC to receive the necessary authorizations and implement the appropriate conservation measures as needed prior to construction.
- Conduct a pre-construction survey for the Southeastern American kestrel in accordance with 68A-27.003(2)(a), 68A-27.001(4), F.A.C. and the current FWC *Southeastern American Kestrel Species Conservation Measures and Permitting Guidelines* and coordinate with FWC to receive the necessary authorizations and implement appropriate conservation measures prior to construction.
- Provide mitigation for wetland impacts resulting from project design and construction per 373.4137, F.S. and 33 U.S.C. § 1344.
- Apply erosion and sediment controls and other best management practices prior to and throughout construction to prevent adverse impacts to wetland and aquatic resources adjacent to the project area.

7.2 Commitments

To ensure the project will not adversely affect protected species and their habitats, the following commitments will be implemented.

- Implement the Standard Protection Measures for the Eastern Indigo Snake during project construction.
- Conduct surveys for listed plants prior to construction and coordinate with the appropriate agency as needed if listed plants are observed within the project area.

7.3 Agency Coordination

7.3.1 Prior Coordination

In September of 2021, comments from the ETAT were provided in the ETDM Summary Report No. 14456. ETAT members submitted comments related to protected species and their habitats, noting the need for protected species surveys and coordination during the PD&E Study, and implementation of protection measures during construction. ETAT members also commented on potential impacts to wetlands and surface waters, noting the need to avoid and/or minimize impacts to wetlands, document cumulative impact criteria, meet water quality and quantity requirements, and implement proper best management practices during construction. Through the PD&E process, these issues have been addressed and documented in this report.

As previously mentioned in section 3.4.5, on September 30, 2021, the USFWS agreed the conditions within the existing right-of-way would likely preclude sand skinks and blue-tailed mole skinks from utilizing habitats within the project area. Therefore, a coverboard survey for sand skinks or their tracks is not required for the proposed project.

7.3.2 Continuing Coordination

The final NRE report will be provided to the relevant resource agencies for informational purposes with the proposed effect determinations for listed species and potential impacts to wetland resources. Agency coordination will continue throughout the design phase of the project when environmental permitting typically occurs. Environmental permits will be required from FDEP and SFWMD for the proposed project. Permit applications will be reviewed by the regulatory agencies for potential impacts to environmental resources. During the permitting process, the regulatory agencies will likely request commenting agencies to ensure consistency with regulatory criteria under their purview. In addition to coordination/consultation pertaining to protected species and wetland resources, FDOT will coordinatie with SHPO regarding historical resources, including potential impacts to archeological artifacts

SECTION 8 REFERENCES

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APPENDICES

Appendix A

Land Use Descriptions

Urban and Built-Up (FLUCFCS 100)

Urban and Built-Up lands consist of areas of intensive use with much of the land occupied by man-made-structures. This category includes residential, commercial, recreational, industrial, and institutional classifications. Urban and Built-Up lands within the project corridor include Medium Density Residential (FLUCFCS 120), High Density Residential (FLUCFCS 130-139), Commercial and Services (FLUCFCS 140), and Golf Courses (FLUCFCS 182).

The corridor is highly developed and the primary land use is Urban and Built-Up. These areas lack natural habitat, and as a result provide little to no habitat for listed species. Golf Courses can provide foraging habitat for burrowing owls, southeastern American kestrel, and southern fox squirrel; however, due to the surrounding development, it is unlikely these species would utilize this land use within the corridor.

Upland Forests (FLUCFCS 400)

Upland Forests consist of upland areas that support tree canopy closure of ten percent or more and includes both xeric and mesic forest communities. Upland forests occurring within the project corridor include Upland Mixed Forest (FLUCFCS 434) and Coniferous Plantations (FLUCFCS 441).

Upland Forests occur toward the northern terminus of the project corridor. Coniferous Plantations canopy species include slash pine (*Pinus elliottii*), cabbage palm (Sabal palmetto), and laurel oak (*Quercus laurifolia*). Sub-canopy and groundcover species include saw palmetto (*Serenoa repens*), American beautyberry (*Callicarpa americana*), dogfennel, and various sedges and grasses. Recent clearing has significantly reduced this land use type within the corridor and severed connectivity with larger tracts of undeveloped land.

Water (FLUCFCS 500)

Water includes all areas within the land mass of the United States that are predominantly or persistently water-covered. Examples of this land use include lakes, streams, waterways, and canals. This land use type occurs within the project corridor and includes Streams and Waterways (FLUCFCS 510) and Reservoirs (FLUCFCS 530).

Several reservoirs occur within the study area. Davenport Creek is the only stream within the corridor. These areas provide foraging habitat for listed wading birds.

Wetlands (FLUCFCS 600)

Wetlands consist of areas where the water is at, near, or above the land surface for a significant portion of most years. This category includes forested and non-forested wetlands. The wetlands occurring within the project corridor include Mixed Wetland Hardwoods (FLUCFCS 617), Wetland Forested Mixed (630), and Freshwater Marshes (641).

Mixed wetland hardwood forest is associated with Davenport Creek and an unnamed tributary to Davenport Creek located south of I-4. Other wetlands occur within the infield of the I-4 Interchange. Vegetation within these wetlands includes bald cypress (*Taxodium distichum*), red maple (*Acer rubrum*), water oak (*Quercus nigra*), cabbage palm (*Sabal palmetto*), Carolina willow (*Salix caroliniana*), elderberry (*Sambucas nigra*), salt bush (*Baccharis halimifolia*), primrose willow (*Ludwigia sp*.), cinnamon fern (*Osmunda cinnamomea*), cattail (*Typha sp*.), rush (*Juncus sp*), pickerel weed (*Pontederia cordata*), and duckweed (*Lemna sp*.). Freshwater marsh is located west of the gas station at the intersection of Old Lake Wilson Road and Sinclair Road. This marsh is associated with a natural pond and also include emergent vegetation. Vegetation includes saltbush, soft rush, maidencane (*Panicum hemitomon*), cordgrass (*Spartina bakeri*), and water lily (*Nymphaea* spp.). The wetlands within the corridor provide valuable habitat for listed species and common wildlife species.

Communication, Transportation, and Utilities (FLUCFCS 800)

Communication, transportation, and utilities include areas and facilities used for the movement of people and goods. Roads and Highways (FLUCFCS 814) and Electric Power Facilities (FLUCFCS 831) occur within the corridor and include Old Lake Wilson Road. The right-of-way throughout the corridor is mowed and maintained and provides little to no habitat for wildlife.

Appendix B

Photographs

Photo 1: Davenport Creek and WL 1A

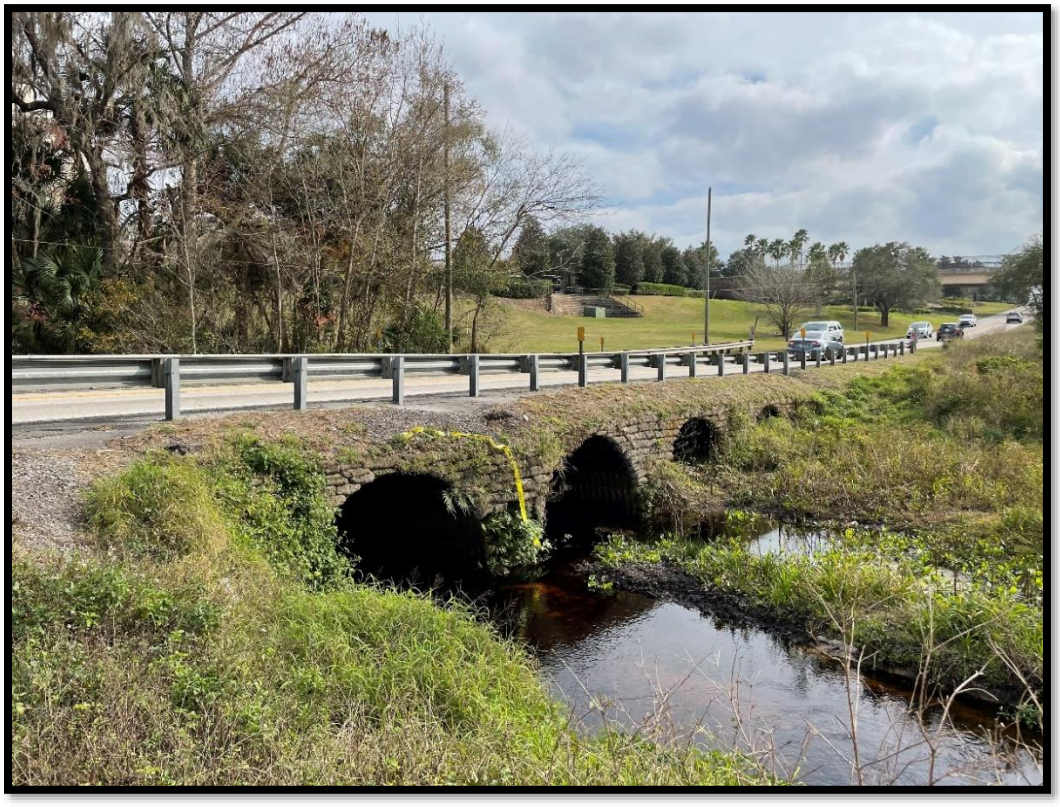


Photo 2: Davenport Creek crossing and WL 1B

Photo 3: Davenport Creek and WL 1B

Photo 4: Representative of habitat within WL 2A

Photo 5: Representative of habitat within WL 2 B

Photo 6: Old Lake Wilson right-of-way facing south

Photo 4: Old Lake Wilson right-of-way facing north

Photo 8: Old Lake Wilson right-of-way facing north

Photo 9: Recently cleared land near northern project terminus

Photo 10: Gathering Dr. Bridge

Appendix C

Conservation Easement Permit Documentation

LARRY WHALEY 17P
OSCEOLA COUNTY, FLORIDA
CLERK OF CIRCUIT COURT

CL 2002169001 OR 2123/1031
KMC Date 10/07/2002 Time 15:35:53

DOC STAMPS: 0.00

Return to
7855 Osceola Polk Line Road
orlando FL 33896

THIS SPACE RESERVED FOR RECORDER'S USE

DEED OF CONSERVATION EASEMENT

THIS DEED OF CONSERVATION EASEMENT is given this 28th day of August, 2002, by **Ginn-LA Orlando Ltd., LLLP**, 7855 suite A Osceola–Polk Line Road, Davenport, Fl 33896 ("**Grantor**"), to the South Florida Water Management District ("**District**" or "**Grantee**"). As used herein, the term Grantor shall include any and all heirs, successors or assigns of the Grantor, and all subsequent owners of the "Property" (as hereinafter defined) and the term Grantee shall include any successor or assignee of Grantee.

WITNESSETH

WHEREAS, the Grantor is the owner of certain lands situated in Osceola County, Florida, and more specifically described in Exhibit "A" attached hereto and incorporated herein ("**Property**"); and

WHEREAS, the Grantor desires to construct (name of project) Reunion Project fks Magnolia Creek ("**Project**") at a site in Osceola County, which is subject to regulatory jurisdiction of the District; and

WHEREAS, District Permit No. 49-01107-P ("**Permit**") authorizes certain activities which affect surface waters in or of the State of Florida; and

WHEREAS, this Permit requires that the Grantor preserve and/or mitigate wetlands under the District's jurisdiction; and

WHEREAS, the Grantor has developed and proposed as part of the permit conditions a conservation tract and maintenance buffer involving preservation of certain wetland and/or upland systems on the Property; and

WHEREAS, the Grantor, in consideration of the consent granted by the Permit, is agreeable to granting and securing to the Grantee a perpetual conservation easement as defined in Section 704.06, Florida Statutes (2000), over the Property which includes third party enforcement rights for the District.

NOW, THEREFORE, in consideration of the issuance of the Permit to construct and operate the permitted activity, and as an inducement to the District in issuing the Permit, together with other good and valuable consideration, the adequacy and receipt of which is hereby acknowledged, Grantor hereby grants, creates and establishes a perpetual conservation easement for and in favor of the Grantee upon the Property which shall run with the land and be binding upon the Grantor, and shall remain in full force and effect forever.

The scope, nature and character of this conservation easement shall be as follows:

1. It is the purpose of this conservation easement to retain land or water areas in their natural, vegetative, hydrologic, scenic, open, agricultural or wooded condition and to retain such areas as suitable habitat for fish, plants or wildlife. Those wetland and/or upland areas included in the conservation easement, which are to be enhanced or created pursuant to the Permit, shall be retained and maintained in the enhanced or created conditions required by the Permit.

To carry out this purpose, the following rights are conveyed to Grantee and the District by this easement:

(a) To enter upon the Property at reasonable times with any necessary equipment or vehicles to enforce the rights herein granted in a manner that will not unreasonably interfere with the use and quiet enjoyment of the Property by Grantor at the time of such entry; and

(b) To enjoin any activity on or use of the Property that is inconsistent with this conservation easement and to enforce the restoration of such areas or features of the Property that may be damaged by any inconsistent activity or use.

2. Except for restoration, creation, enhancement, maintenance and monitoring activities, or surface water management improvements, which are permitted or required by the Permit, the following activities are prohibited in or on the Property:

(a) Construction or placing of buildings, roads, signs, billboards or other advertising, utilities or other structures on or above the ground;

(b) Dumping or placing of soil or other substance or material as landfill, or dumping or placing of trash, waste or unsightly or offensive materials;

(c) Removal or destruction of trees, shrubs or other vegetation, except for the removal of exotic or nuisance vegetation in accordance with a District approved maintenance plan;

(d) Excavation, dredging or removal of loam, peat, gravel, soil, rock or other material substance in such manner as to affect the surface;

(e) Surface use, except for purposes that permit the land or water area to remain in its natural condition;

(f) Activities detrimental to drainage, flood control, water conservation, erosion control, soil conservation, or fish and wildlife habitat preservation including, but not limited to, ditching, diking and fencing;

(g) Acts or uses detrimental to such aforementioned retention of land or water areas;

(h) Acts or uses which are detrimental to the preservation of the structural integrity or physical appearance of sites or properties of historical, architectural or cultural significance.

3. Grantor reserves all rights as owner of the Property, including the right to engage in uses of the Property that are not prohibited herein and that are not inconsistent with any District rule, criteria, the Permit and the intent and purposes of this Conservation Easement. The District may permit passive recreational uses that are not contrary to the purpose of this conservation easement upon written approval. Notwithstanding the prohibitions specified in Subparagraphs (a) through (h) of Paragraph 2 above, Grantor expressly reserves the right to do the following:

(a) Grantor may maintain, repair, enhance and replace any existing utility lines, conduits, pipes and related equipment and improvements now existing on the Property (collectively, the "**Existing Facilities**"); provided, however, that in no event shall any enhancement of any Existing Facilities result in an increase in the area impacted by the Existing Facilities or increase the height of any existing power poles or transmission towers, unless a separate permit therefore is issued by Grantee.

(b) Provided that Grantor obtains all necessary permits from the District therefore, the Grantor may conduct limited land clearing for the purpose of constructing, and Grantor may construct facilities for passive recreational uses such as pervious docks, boardwalks, trails created using mulch or other pervious, educational signage and picnic tables and associated facilities. Grantor shall, not later than sixty, (60), days prior to the initiation of construction, submit a request for issuance of a permit for such activities to the District accompanied by plans for the construction of the proposed facilities. Such permit request shall also include, but not be limited to, a description of the intended use and the design, construction techniques and intended locations of the facilities proposed to be constructed by Grantor.

(c) The construction and use of the facilities described in subparagraphs (a) and (b) above shall be subject to the following conditions:

(i) Grantor shall minimize and avoid, to the fullest extent possible, impact to any wetland or upland buffer areas within the Conservation Easement Area and shall avoid materially diverting the direction of the natural surface water flow in such area;

(ii) Such facilities and improvements shall be constructed and maintained utilizing Best Management Practices;

(iii) Adequate containers for litter disposal shall be situated adjacent to such facilities and improvements and periodic inspections shall be instituted by the maintenance entity, to clean any litter from the area surrounding the facilities and improvements; and

(iv) This conservation easement shall not constitute permit authorization for the construction and operation of passive recreational facilities. Any such work shall be subject to all applicable federal, state, District or local permitting requirements.

4. No right of access by the general public to any portion of the Property is conveyed by this conservation easement.

5. Neither Grantee nor the district shall be responsible for any costs or liabilities related to the operation, upkeep or maintenance of the Property.

6. Grantor shall pay any and all real property taxes and assessments levied by competent authority on the Property.

7. Any costs incurred in enforcing, judicially or otherwise, the terms, provisions and restrictions of this conservation easement shall be borne by and recoverable against the nonprevailing party in such proceedings.

8. The District shall have third party enforcement rights of the terms, provisions and restrictions of this conservation easement. Enforcement of the terms, provisions and restrictions shall be at the discretion of the Grantee, or the District, and any forbearance on behalf of the Grantee or the District to exercise its rights hereunder in the event of any breach hereof by Grantor, shall not be deemed or construed to be a waiver of Grantee's or District's rights hereunder.

9. Grantee will hold this conservation easement exclusively for conservation purposes. Grantee will not assign its rights and obligations under this conservation easement except to another organization qualified to hold such interests under the applicable state laws, including, but not limited to, a Community Development District or a Property Owner's Association. No assignment shall be made unless the District gives prior written approval.

10. If any provision of this conservation easement or the application thereof to any person or circumstances is found to be invalid, the remainder of the provisions of this conservation easement shall not be affected thereby, as long as the purpose of the conservation easement is preserved.

11. All notices, consents, approvals or other communications hereunder shall be in writing and shall be deemed properly given if sent by United States certified mail, return receipt requested, addressed to the appropriate party or its successor-in-interest.

12. Any amendments or modifications to the terms, conditions, restrictions or purpose of this conservation easement, or any release or termination thereof, shall be subject to prior review and written approval by the District. The District shall be provided no less than ninety (90) days advanced notice in the manner described herein of any such proposed amendment, modification, termination or release. This conservation easement may be amended, altered, released or revoked only by written agreement between the parties hereto and the District or their heirs, assigns or successors-in-interest, which shall be filed in the public records in Osceola County.

13. This Conservation Easement is not intended to preclude continued discharge of stormwater onto the Property, so long as such discharge is in accordance with all necessary permits and authorizations.

TO HAVE AND TO HOLD unto Grantee forever. The covenants, terms, conditions, restrictions and purpose imposed with this conservation easement shall be binding upon Grantor, and shall continue as a servitude running in perpetuity with the Property.

Grantor hereby covenants with said Grantee that Grantor is lawfully seized of said Property in fee simple; that the Property is free and clear of all encumbrances that are inconsistent with the terms of this conservation easement and all mortgages and liens have been subordinated to this conservation easement; that Grantor has good right and lawful authority to convey this conservation easement; and that it hereby fully warrants and defends the title to the conservation easement hereby conveyed against the lawful claims of all persons claiming superior rights by virtue of any interest granted to such persons by, through or under Grantor.

IN WITNESS WHEREOF, Ginn-LA Orlando Ltd., LLLP has hereunto set its authorized hand this 27th day of August 28, 2002.

Signed, sealed and delivered
in the presence of:

MICHAEL T. Holleran (Print Name)

Thomas P.C. McCarthy (Print Name)

Ginn-LA Orlando Ltd., LLLP, a Georgia limited partnership ("**Owner**")

By: **GINN-ORLANDO GP, LLC**, a Georgia limited liability company, its general partner

By: _____

Name: JAMES COOPER

Title: VICE PRESIDENT

STATE OF FLORIDA)
) SS
COUNTY OF OSCEOLA)

On this 28 day of AUGUST, 2002, before me, the undersigned notary public, personally appeared James Cooper, personally known to me to be the person who subscribed to the foregoing instrument, as the (position) Vice President of (corporation) GINN-LA ORLANDO, LLLP, a Georgia limited partnership, and acknowledged that he executed the same on behalf of said corporation and that he was duly authorized to do so.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

NOTARY PUBLIC, STATE OF FLORIDA

Joyce Margaret Gilley

Print Name: JOYCE MARGARET Gilley

My Commission Expires:

Joyce Margaret Gilley
My Commission CC947009
Expires June 19, 2004

South Florida Water Management District

Legal Form Approved: South Florida Water Management District

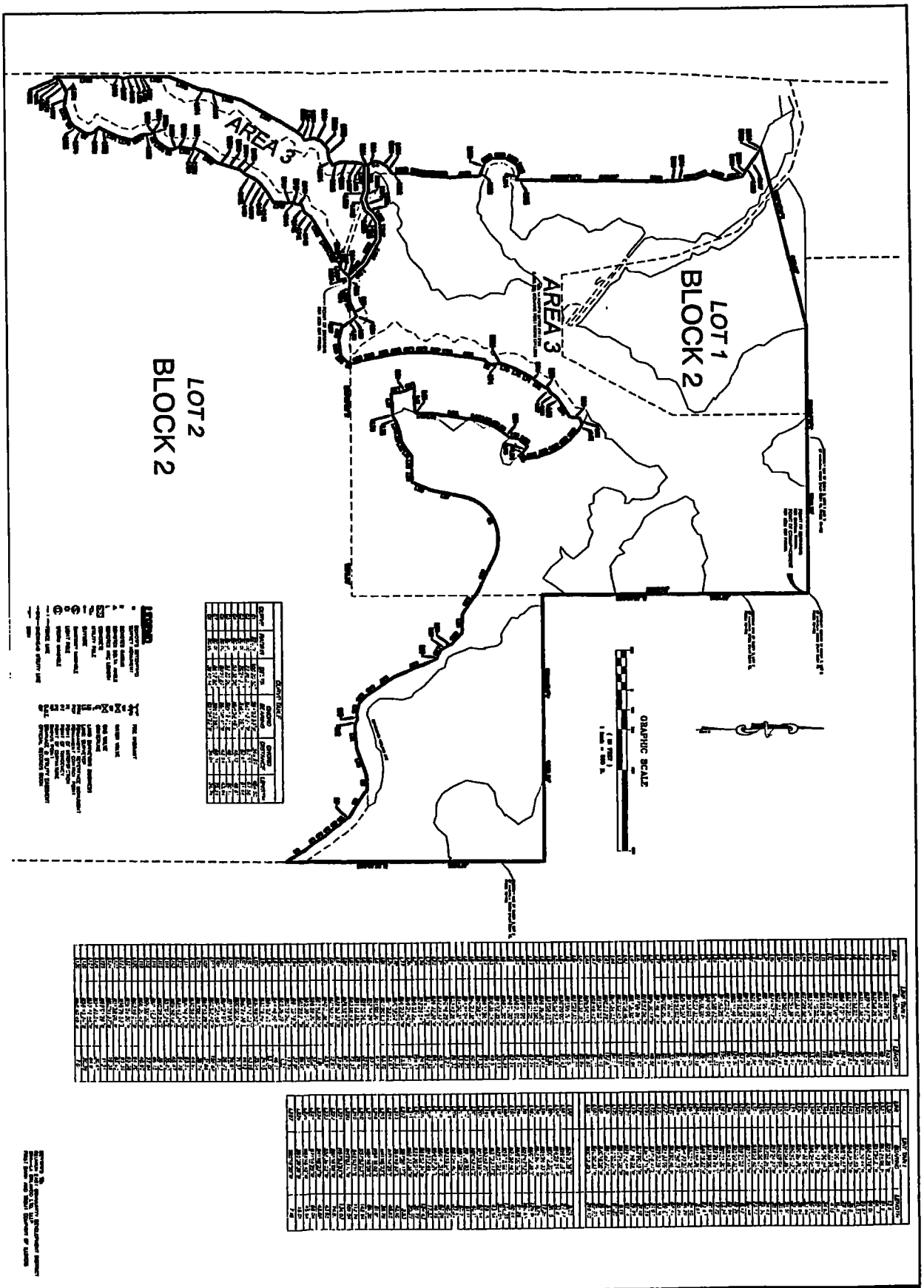
Legal Form Approved: By Office of Counsel

Date: August 2002

Exhibit "A"

CL 2002169001

OR 2123/1037



BOUNDARY SURVEY

OF

CONSERVATION AREA 3

REUNION RESORT & CLUB OF ORLANDO

AREAS EAST OF COUNTY ROAD 545

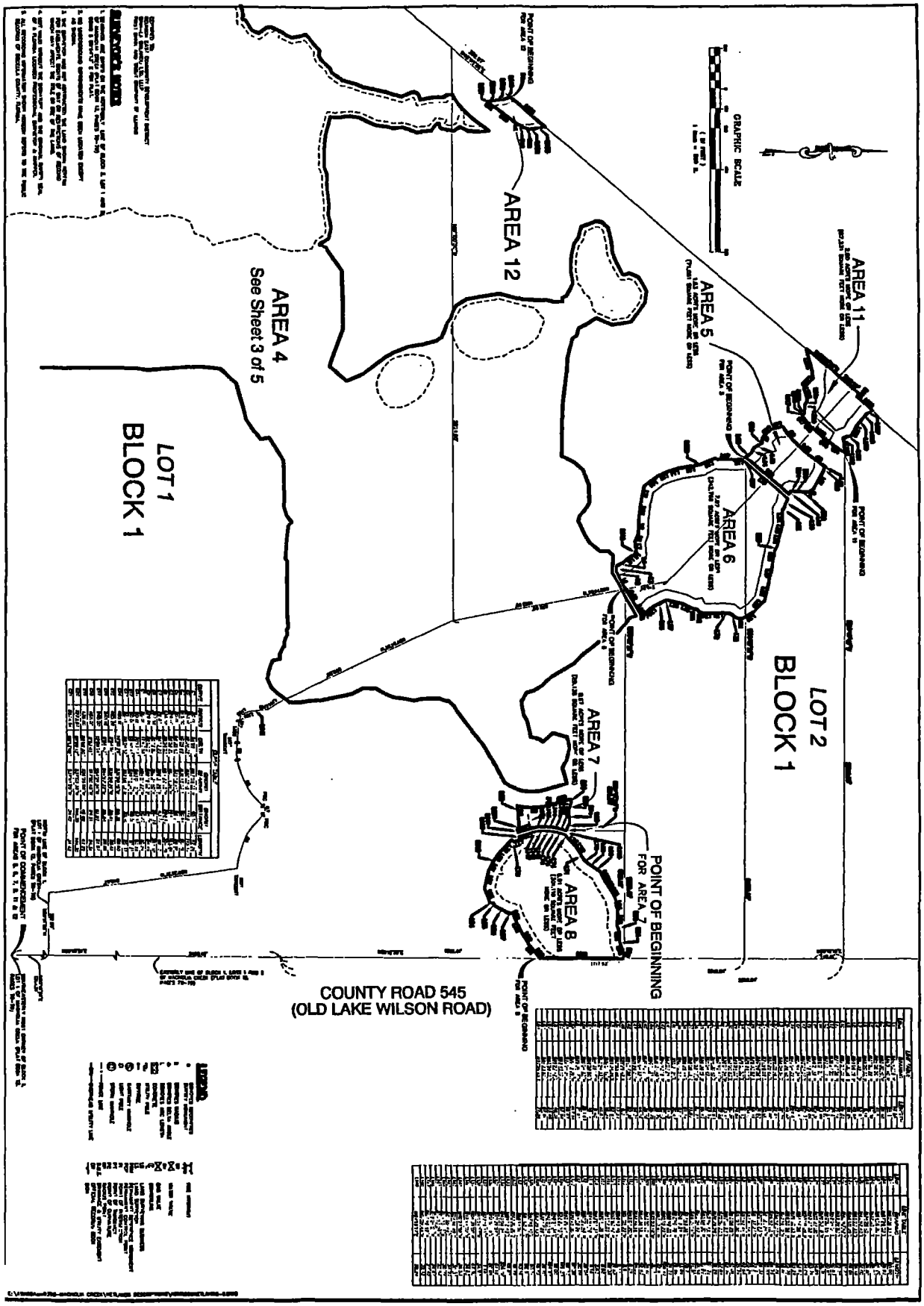
OSCEOLA COUNTY, FLORIDA SECTIONS 27,34-25-27

NO.	DATE	REVISIONS
1.	04/12/02	REVISED
2.	05/21/02	REVISED
3.	05/23/02	REVISED
4.	06/05/02	ADDED CERTIFICATIONS
5.	07/30/02	REVISED LESS OUT

BRETT A. MOSKOWITZ, PLS

SHEET 1 OF 2

10 of 11



JOB NO.		
FIELD DATE	11-08-01	
SCALE	1" = 200'	
DRAWN BY	MRD	
APPROVED BY	LJS	
DRAWING FILE		

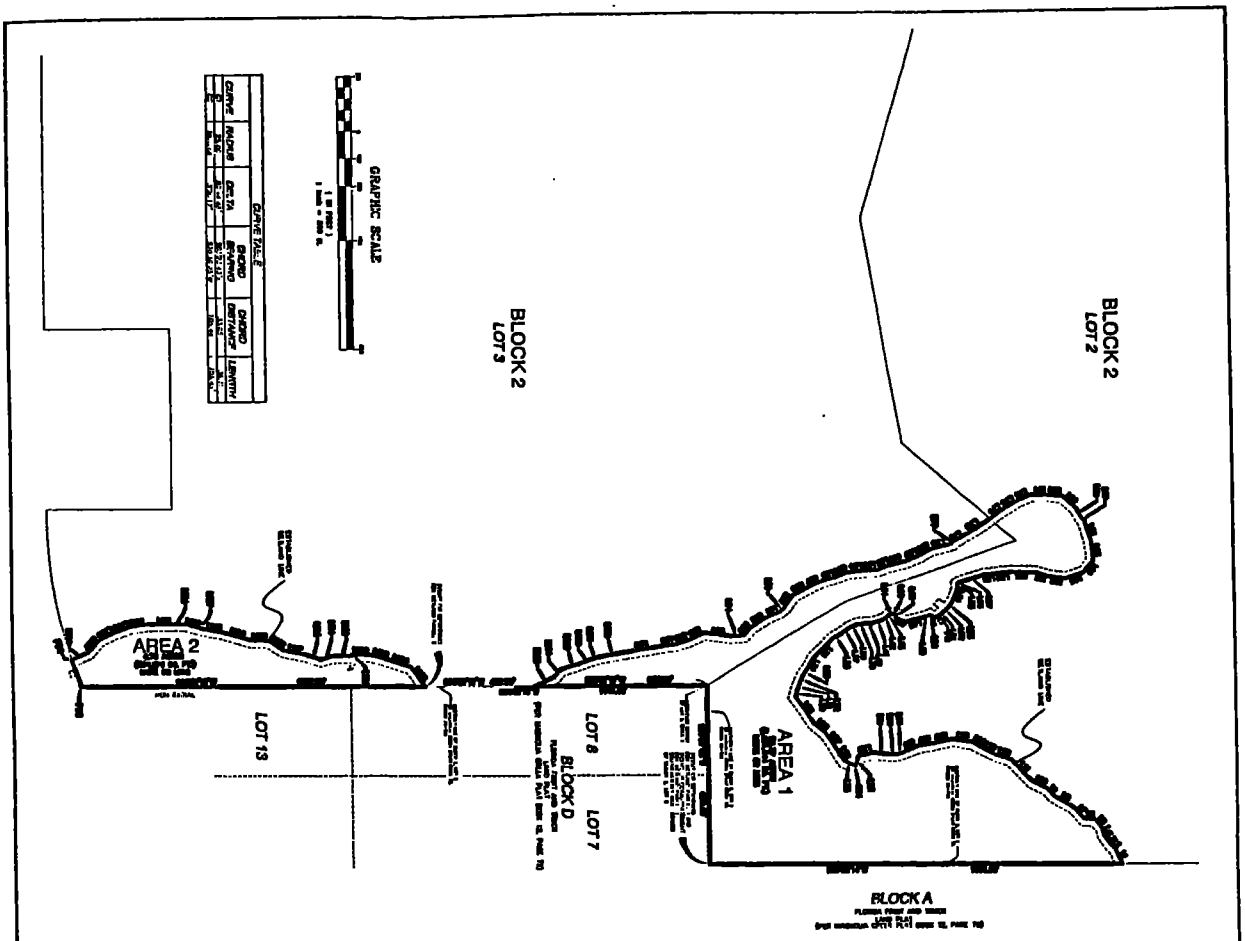
ASM

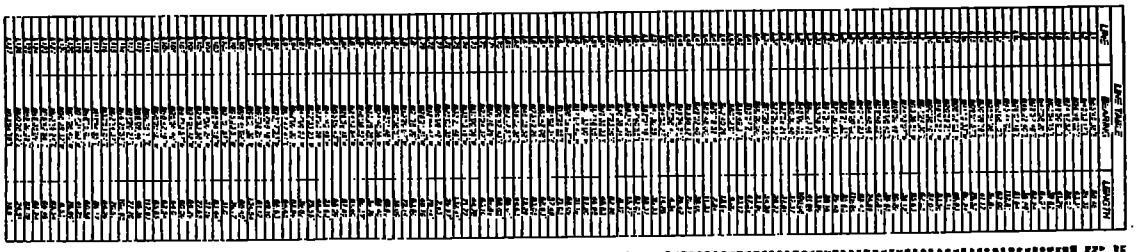
SKETCH OF DESCRIPTION
OF
CONSERVATION AREAS 5 THROUGH 8, 11 AND 12
ROBINSON RESORT & CLUB OF ORLANDO
EAST OF INTERSTATE 4 & WEST OF COUNTY ROAD 545
OSCEOLA COUNTY, FLORIDA SECTIONS 27,34-25-27

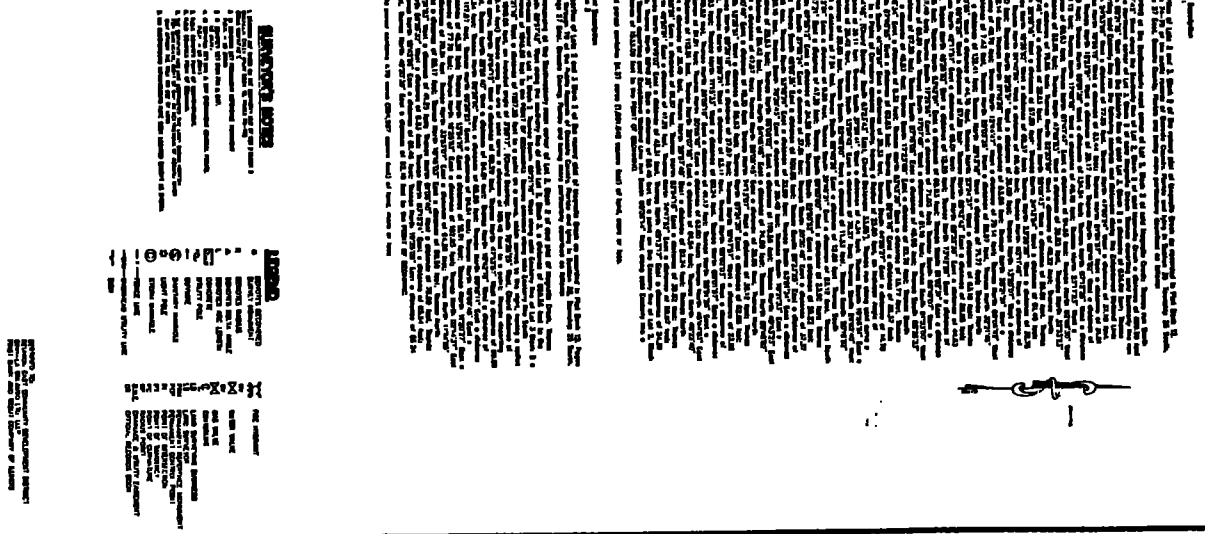
NO.	DATE	REVISIONS
1.	04/12/02	REVISED
2.	05/21/02	REVISED
3.	06/13/02	REVISED
4.	08/05/02	ADDED CERTIFICATIONS
5.	09/05/02	REVISED DESCRIPTIONS

BRETT A. MOSKOWITZ, P.L.S. #5011
NOT VALID WITHOUT THE SIGNATURE AND ORIGINAL RAISED SEAL OF A FLORIDA LICENSED PROFESSIONAL SURVEYOR & MAPPER

SHEET 4 OF 5







SKETCH OF DESCRIPTION
OF
CONSERVATION AREAS 1 AND 2
REUNION RESORT & CLUB OF ORLANDO
AREAS EAST OF COUNTY ROAD 545
OSCEOLA COUNTY, FLORIDA SECTIONS 27,34-25-27

NO.	DATE	REVISIONS
1.	04/12/02	REVISED
2.	05/21/02	REVISED
3.	05/23/02	REVISED
4.	08/05/02	ADDED CERTIFICATIONS

BRETT A. MOSCOVITZ, PLS #5011

SHEET 1 OF 1

Legal Description (Area 1):

A portion of Lots 2 and 3, Block 2 of the record plat of Magnolia Creek as recorded in Plat Book 12, Pages 74-79 of the public records of Osceola County, Florida and lying in Section 35, Township 25 South, Range 27 East, Osceola County, Florida and being more particularly described as follows:

BEGINNING at the Southeasterly most corner of Lot 2, Block 2 of said Magnolia Creek; Thence run South 89°57'42" West along the Southerly line of Lot 2, Block 2 of said Magnolia Creek a distance of 659.58 feet to the Northeast corner of Lot 3, Block 2 of said Magnolia Creek; Thence departing said Southerly line run South 00°21'16" West along the Easterly line of said Lot 3, Block 2 a distance of 636.69 feet; Thence departing said Easterly line run the following courses and distances along the Established Wetland Line: North 24°53'58" West a distance of 77.65 feet; Thence North 47°00'24" West a distance of 37.19 feet; Thence North 16°56'19" West a distance of 83.44 feet; Thence North 21°01'57" West a distance of 31.01 feet; Thence North 15°23'51" West a distance of 39.17 feet; Thence North 09°41'02" West a distance of 88.40 feet; Thence North 09°01'30" West a distance of 134.54 feet; Thence North 07°12'26" West a distance of 61.12 feet; Thence North 17°46'18" West a distance of 49.10 feet; Thence North 23°17'23" West a distance of 66.63 feet; Thence North 07°47'47" East a distance of 94.65 feet; Thence North 02°00'30" West a distance of 52.96 feet; Thence North 47°06'53" West a distance of 39.82 feet; Thence North 32°33'23" West a distance of 75.55 feet; Thence North 22°23'59" West a distance of 48.22 feet; Thence North 41°40'49" West a distance of 22.63 feet; Thence North 55°09'43" West a distance of 56.09 feet; Thence North 26°59'15" West a distance of 57.89 feet; Thence North 24°13'54" West a distance of 61.40 feet; Thence North 16°36'52" West a distance of 60.37 feet; Thence North 23°28'28" West a distance of 39.76 feet; Thence North 04°40'56" West a distance of 66.40 feet; Thence North 03°11'48" West a distance of 49.60 feet; Thence North 20°36'51" West a distance of 36.09 feet; Thence North 13°20'07" West a distance of 72.14 feet; Thence North 21°18'30" West a distance of 53.86 feet; Thence North 28°21'51" West a distance of 48.76 feet; Thence North 12°44'47" West a distance of 79.14 feet; Thence North 66°06'42" West a distance of 7.43 feet; Thence North 25°03'35" West a distance of 29.97 feet; Thence North 32°21'46" West a distance of 132.41 feet; Thence North 35°13'19" West a distance of 71.77 feet; Thence North 31°00'06" West a distance of 44.78 feet; Thence North 23°24'37" West a distance of 63.10 feet; Thence North 00°16'26" West a distance of 57.89 feet; Thence North 06°42'43" East a distance of 58.85 feet; Thence North 42°17'57" East a distance of 66.01 feet; Thence North 59°32'38" East a distance of 44.63 feet; Thence North 46°35'52" East a distance of 12.29 feet; Thence North 73°42'26" East a distance of 83.05 feet; Thence North 83°42'08" East a distance of 68.93 feet; Thence South 51°02'31" East a distance of 57.49 feet; Thence South 17°25'55" East a distance of 71.03 feet; Thence South 08°19'07" West a distance of 66.09 feet; Thence South 17°07'40" West a distance of 51.19 feet; Thence South 01°33'00" West a distance of 97.20 feet; Thence South 07°16'05" East a distance of 46.98 feet; Thence South 05°35'33" East a distance of 46.83 feet; Thence South 17°23'09" East a distance of 92.76 feet; Thence South 38°38'34" East a distance of 8.32 feet; Thence North 83°42'39" East a distance of 15.77 feet; Thence South 67°40'55" East a distance of 52.03 feet; Thence South 52°01'19" East a distance of 28.37 feet; Thence South 41°30'59" East a distance of 30.33 feet; Thence South 44°55'27" East a distance of 14.78 feet to a Point of Curvature concave Westerly, having a Radius of 25.00 feet, an Included Angle of 82°44'48", (Chord Bearing: South 03°23'43" East, Chord Distance: 33.05'), Thence run along said curve a distance of 36.11 feet; Thence South 37°58'41" West a distance of 4.34 feet; Thence South 19° 56'51" East a distance of 26.42 feet; Thence South 13°56'42" East a distance of 70.27 feet; Thence South 29°02'40" West a distance of 39.00 feet; Thence South 82°48'00" West a distance of 11.33 feet; Thence South 20°19'52" West a distance of 7.24 feet; Thence South 02°40'26" East a distance of 12.69 feet; Thence South 50°12'01" East a distance of 9.00 feet; Thence South 39°49'31" East a distance of 23.12 feet; Thence South 15°57'21" East a distance of 47.39 feet; Thence South 00°00'00" West a distance of 23.90 feet; Thence South 07°26'12" East a distance of 34.28 feet; Thence South 22°50'52" East a distance of 28.22 feet; Thence South 37°59'24" East a distance of 37.81 feet; Thence South 30°30'48" East a distance of 37.37 feet; Thence South 45°00'35" East a distance of 100.08 feet; Thence South 60°23'25" East a distance of 41.96 feet; Thence South 53°18'20" East a distance of 33.99 feet; Thence South 63°51'34" East a distance of 28.16 feet; Thence South 70°30'43" East a distance of 29.48 feet; Thence South 76°21'33" East a distance of 25.63 feet; Thence North 55°08'02" East a distance of 119.56 feet; Thence North 40°43'23" East a distance of 55.43 feet; Thence North 54°48'46" East a distance of 74.59 feet; Thence North 59°48'02" East a distance of 47.87 feet; Thence North 25°08'45" East a distance of 35.85 feet; Thence North 10°50'49" East a distance of 10.30 feet; Thence North 74°13'07" West a distance of 36.12

feet; Thence North 13°36'51" West a distance of 55.63 feet; Thence North 07°24'30" East a distance of 62.05 feet; Thence North 00°38'10" West a distance of 27.07 feet; Thence North 16°47'57" West a distance of 23.56 feet; Thence North 20°59'21" West a distance of 63.11 feet; Thence North 08°02'03" West a distance of 46.93 feet; Thence North 11°15'33" West a distance of 80.24 feet; Thence North 09°01'57" East a distance of 75.52 feet; Thence North 30°06'19" East a distance of 41.17 feet; Thence North 25°51'26" East a distance of 51.81 feet; Thence North 20°06'10" East a distance of 62.00 feet; Thence North 45°44'03" East a distance of 112.81 feet; Thence North 26°07'18" East a distance of 61.54 feet; Thence North 46°22'40" East a distance of 36.49 feet; Thence North 29°57'48" East a distance of 82.24 feet; Thence North 47°58'26" East a distance of 61.07 feet; Thence North 03°54'15" East a distance of 39.82 feet; Thence North 49°50'01" East a distance of 41.29 feet; Thence North 74°47'52" East a distance of 28.07 feet; Thence North 56°49'02" East a distance of 43.31 feet; Thence North 45°13'17" East a distance of 24.39 feet; Thence North 65°49'38" East a distance of 58.46 feet to a point on the Easterly line of Lot 2, Block 2; Thence departing said Established Wetland Line run South 00°36'14" West along said Easterly line a distance of 1533.00 feet to the POINT OF BEGINNING.

Said parcel contains 24.37 acres (1,061,645 square feet) of land, more or less.

Legal Description (Area 2):

A portion of Lots 2 and 3 Block 2 of the record plat of Magnolia Creek as recorded in Plat Book 12, Pages 74 through 79 of the Public Records of Osceola County, Florida and lying in Section 35, Township 25 South, Range 27 East, Osceola County, Florida and being more particularly described as follows:

Commencing at the Southeasterly most corner of Lot 2, Block 2 of said plat of Magnolia Creek, Thence South 89°57'42" West along the southerly line of said Lot 2, Block 2, a distance of 659.58 feet to the Northeast corner of Lot 3, Block 2, Thence South 00°21'16" West along said Easterly line of Lot 3 Block 2 a distance of 1045.66 feet to the POINT OF BEGINNING; Thence continue along said Easterly line South 00°21'16" West a distance of 1287.25 feet to a point on a curve, which curves to the right, having a radius of 1810.08 feet, an included angle of 3° 20'17", (Chord Bearing: South 70°36'25" West, Chord distance of 105.44 feet) Thence along the arc of said curve a distance of 105.45 feet to a point; Thence departing said curve, North 24°04'12" West a distance of 69.29 feet; Thence North 47°13'57" West a distance of 60.09 feet; Thence North 26°56'40" West a distance of 64.01 feet; Thence North 18°42'19" West a distance of 62.54 feet; Thence North 08°20'00" West a distance of 65.95 feet; Thence North 00°16'11" East a distance of 117.97 feet; Thence North 00°28'22" East a distance of 24.51 feet; Thence North 16° 09'46" East a distance of 46.36 feet; Thence North 13°54'19" East a distance of 18.91 feet; Thence North 11°20'27" East a distance of 77.76 feet; Thence North 16°25'52" East a distance of 102.95 feet; Thence North 02°14'37" East a distance of 70.51 feet; Thence North 33°53'07" East a distance of 64.26 feet; Thence North 11°14'55" East a distance of 86.17 feet; Thence North 18°16'03" East a distance of 60.58 feet; Thence North 17°31'03" West a distance of 41.25 feet; Thence North 01°06'40" West a distance of 76.99 feet; Thence North 56°28'32" West a distance of 6.53 feet; Thence North 03°15'24" East a distance of 65.54 feet; Thence North 15°42'56" East a distance of 66.46 feet; Thence North 19°35'09" East a distance of 86.24 feet; Thence North 49°30'39" East a distance of 92.19 feet to the POINT OF BEGINNING.

Said parcel contains 4.70 acres (204,587 square feet) of land, more or less.

LEGAL DESCRIPTION (Area 3):

All or a portion of Block 2, Lots 1 and 2 of the record plat of Magnolia Creek as recorded in Plat Book 10, Page 70-79 of the Public Records of Osceola County, Florida and lying in Sections 26 and 35, Township 25 South, Range 27 East and being more particularly described as follows:

BEGINNING at the Northeast corner of said Block 2, Lot 2; Thence along the easterly line of said Block 2, Lot 2 the following three courses: South 00°06'57" West a distance of 1331.67 feet; Thence South 89°56'59" East a distance of 1326.84 feet; Thence South 00°06'28" West a distance of 1298.17 feet to a point; Thence departing said Easterly line, North 32°26'01" West a distance of 142.04 feet; Thence North 33°26'08" West a distance of 49.78 feet; Thence North 32°08'26" West a distance of 41.12 feet; Thence North 39°14'27" West a distance of 52.06 feet; Thence North 35°07'56" West a distance of 39.93 feet; Thence North 41°13'55" West a distance of 47.26 feet; Thence North 32°03'51" West a distance of 10.65 feet; Thence North 56°12'01" West a distance of 168.78 feet; Thence South 87°17'09" West a distance of 66.18 feet; Thence South 70°28'38" West a distance of 146.29 feet; Thence South 85°25'46" West a distance of 111.55 feet; Thence North 67°10'55" West a distance of 40.86 feet; Thence South 65°58'04" West a distance of 13.48 feet; Thence North 77° 29'58" West a distance of 63.40 feet; Thence North 47°33'42" West a distance of 54.85 feet; Thence North 31°54'38" West a distance of 70.92 feet; Thence North 34°50'42" West a distance of 95.89 feet; Thence North 22°33'31" West a distance of 237.63 feet; Thence North 74°47'17" West a distance of 14.78 feet; Thence North 57°00'00" West a distance of 35.98 feet; Thence North 30°16'49" West a distance of 42.89 feet; Thence North 22°37'08" West a distance of 15.58 feet; Thence North 48°02'05" West a distance of 76.79 feet; Thence North 88°18'36" West a distance of 92.81 feet; Thence North 55°11'46" West a distance of 128.50 feet; Thence North 62°55'42" West a distance of 185.66 feet to the point of curvature, concave Southeasterly, having a radius of 220.00 feet, an included angle of 105°20'50", (Chord Bearing: South 64°23'53" West, chord distance of 349.89 feet) thence along said curve a distance of 404.50 feet to a point of tangency; Thence South 11°43'28" West a distance of 170.55 feet; Thence South 24°08'23" West a distance of 96.32 feet; Thence South 88°40'06" West a distance of 53.95 feet; Thence South 90°00'00" West a distance of 76.41 feet; Thence South 52°13'33" West a distance of 50.18 feet; Thence South 61°13'05" West a distance of 40.09 feet; Thence South 79°54'03" West a distance of 50.28 feet; Thence South 69°54'03" West a distance of 50.28 feet; Thence South 61°33'03" West a distance of 33.71 feet; Thence South 80°00'20" West a distance of 15.80 feet; Thence South 87°46'18" West a distance of 95.41 feet; Thence North 09°30'17" West a distance of 49.56 feet; Thence North 19°42'56" West a distance of 37.41 feet; Thence North 17°09'56" West a distance of 30.92 feet; Thence North 87°31'05" East a distance of 122.96 feet; Thence North 20°06'16" East a distance of 11.14 feet; Thence North 02°02'45" East a distance of 43.85 feet; Thence North 04°34'33" East a distance of 54.07 feet; Thence North 08°53'29" East a distance of 172.83 feet; Thence North 11°52'55" East a distance of 46.19 feet; Thence North 19° 49'42" East a distance of 53.11 feet; Thence North 26°08'11" East a distance of 26.89 feet; Thence North 33°32'18" East a distance of 55.69 feet; Thence North 37°29'35" East a distance of 37.05 feet; Thence North 11°09'10" East a distance of 43.50 feet; Thence North 38°20'00" East a distance of 57.43 feet; Thence South 56°02'57" East a distance of 34.61 feet; Thence South 37°08'25" East a distance of 9.56 feet; Thence North 56°39'36" East a distance of 34.64 feet; Thence North 08°01'05" West a distance of 62.14 feet; Thence North 18°01'05" West a distance of 62.14 feet; Thence North 28°01'05" West a distance of 62.14 feet; Thence North 38°01'05" West a distance of 62.14 feet; Thence North 48°01'05" West a distance of 62.14 feet; Thence North 58°01'05" West a distance of 34.34 feet; Thence South 64°12'35" West a distance of 33.13 feet; Thence South 08°35'34" West a distance of 49.51 feet; Thence South 56°11'56" West a distance of 89.19 feet; Thence South 50°28'07" West a distance of 27.32 feet; Thence South 40°23'36" West a distance of 40.41 feet; Thence South 64°41'04" West a distance of 23.75 feet; Thence South 14°30'35" West a distance of 13.70 feet; Thence South 33°42'26" West a distance of 76.33 feet; Thence South 60°46'28" West a distance of 3.27 feet; Thence South 32°24'42" West a distance of 45.36 feet; Thence South 26°32'38" West a distance of 68.60 feet; Thence South 20°14'51" West a distance of 62.34 feet; Thence South 07°58'17" East a distance of 2.53 feet; Thence South 12°59'54" East a distance of 24.21 feet to the point of curvature, concave Westerly, having a radius of 50.00 feet, an included angle of 77°26'31", (Chord Bearing: South 25°43'21" West, chord distance of 62.55 feet) thence along said curve a distance of 67.58 feet to a point; Thence South 08°53'29" West a distance of 159.17 feet; Thence South 06° 21'40" West a distance of 60.50 feet; Thence South 06°23'54" West a distance of 63.57 feet; Thence South 00°19'02" East a distance of 63.59 feet; Thence South 01°23'23" East a distance of 63.67 feet; Thence South 07°20'03" East a distance of 63.70 feet; Thence South 11°05'30" East a

distance of 61.54 feet; Thence South 12°14'28" East a distance of 87.11 feet; Thence South 19°10'56" East a distance of 32.03 feet to the point of curvature, concave Westerly, having a radius of 50.00 feet, an included angle of 70°24'31", (Chord Bearing: South 16°01'19" West, chord distance of 57.65 feet) thence along said curve a distance of 61.44 feet to a point; Thence South 51°13'35" West a distance of 28.84 feet; Thence South 83°06'42" West a distance of 73.37 feet; Thence North 76°18'57" West a distance of 68.08 feet; Thence North 39°53'33" West a distance of 37.88 feet; Thence North 21°42'01" West a distance of 12.60 feet; Thence North 40°31'36" West a distance of 43.90 feet; Thence South 87°43'36" West a distance of 1.80 feet; Thence South 58°59'30" West a distance of 37.20 feet; Thence South 65°38'02" West a distance of 37.00 feet; Thence South 85°28'21" West a distance of 56.00 feet; Thence North 81°10'19" West a distance of 37.90 feet; Thence South 85°19'50" West a distance of 24.92 feet; Thence South 65°39'39" West a distance of 16.33 feet; Thence South 44°46'40" West a distance of 46.11 feet; Thence South 75°30'07" West a distance of 35.77 feet; Thence South 25°32'26" West a distance of 12.61 feet; Thence South 63°24'06" West a distance of 61.91 feet; Thence South 57°54'31" West a distance of 69.17 feet; Thence South 58°43'18" West a distance of 99.00 feet; Thence South 51°10'44" West a distance of 25.87 feet; Thence South 33°05'45" West a distance of 41.55 feet; Thence South 68°34'51" West a distance of 36.81 feet; Thence South 09°15'47" West a distance of 28.18 feet; Thence South 48°00'38" West a distance of 10.81 feet; Thence South 08°33'56" East a distance of 4.19 feet; Thence South 04°50'44" East a distance of 34.63 feet; Thence South 03°43'04" West a distance of 66.14 feet; Thence South 56°24'01" West a distance of 60.00 feet; Thence South 54°32'50" West a distance of 23.44 feet; Thence South 50°50'36" West a distance of 39.94 feet; Thence South 40°40'12" West a distance of 32.33 feet; Thence South 24°34'35" West a distance of 51.50 feet; Thence South 42°09'04" West a distance of 30.61 feet; Thence South 19°24'27" West a distance of 35.21 feet; Thence South 17°05'26" West a distance of 34.42 feet; Thence South 16°58'37" West a distance of 56.79 feet; Thence South 39°22'40" West a distance of 73.57 feet; Thence South 27°07'11" West a distance of 50.48 feet; Thence South 19°21'55" West a distance of 8.42 feet; Thence South 15°20'32" East a distance of 18.26 feet; Thence South 09°45'16" West a distance of 52.94 feet; Thence South 05°11'30" East a distance of 13.28 feet; Thence South 19°26'59" East a distance of 17.72 feet; To the point of curvature, concave Westerly, having a radius of 50.00 feet, an included angle of 57°25'00", (Chord Bearing: South 09°15'31" West, chord distance of 48.04 feet) thence along said curve a distance of 50.11 feet to a point; Thence South 37°58'00" West a distance of 40.60 feet to the point of curvature, concave Northwesterly, having a radius of 50.00 feet, an included angle of 50°21'22", (Chord Bearing: South 63°08'41" West, chord distance of 42.54 feet) thence along said curve a distance of 43.94 feet to a point; Thence South 88°19'22" West a distance of 22.63 feet; Thence South 11°44'36" East a distance of 2.67 feet; Thence South 53°51'51" East a distance of 24.45 feet; Thence South 04°35'57" East a distance of 46.29 feet; Thence South 27°48'19" East a distance of 55.84 feet; Thence South 13°55'46" West a distance of 68.42 feet; Thence South 24°33'00" West a distance of 66.21 feet; Thence South 29°53'16" West a distance of 43.16 feet; Thence South 37°19'47" East a distance of 21.67 feet; To the point on a non-tangent curve, concave Westerly, having a radius of 50.00 feet, an included angle of 86°12'58", (Chord Bearing: South 06°53'18" East , chord distance of 68.34 feet) thence along said curve a distance of 75.24 feet to a point; Thence South 36°13'11" West a distance of 23.59 feet; Thence South 32°00'15" West a distance of 31.18 feet to the point of curvature, concave Northwesterly, having a radius of 50.00 feet, an included angle of 39°48'14", (Chord Bearing: South 51°54'22" West, chord distance of 34.04 feet) thence along said curve a distance of 34.74 feet to a point; Thence South 71°48'29" West a distance of 76.99 feet; Thence North 79°42'44" West a distance of 68.14 feet; Thence South 57°24'02" West a distance of 9.19 feet; Thence South 63°55'39" West a distance of 51.30 feet; Thence South 87°22'23" West a distance of 5.14 feet; Thence South 20°18'08" West a distance of 16.38 feet; Thence South 40°58'33" West a distance of 20.55 feet; Thence North 00°12'39" East a distance of 319.10 feet; Thence North 26°21'16" East a distance of 5.05 feet; Thence North 16°08'16" East a distance of 27.27 feet; Thence North 16°59'59" West a distance of 32.81 feet; Thence North 00°12'39" East a distance of 36.15 feet; Thence North 04°26'33" East a distance of 17.26 feet; Thence North 07°50'40" West a distance of 9.09 feet; Thence North 00°12'39" East a distance of 129.90 feet; Thence North 22°47'12" East a distance of 160.65 feet; Thence North 09°00'10" East a distance of 51.28 feet; Thence North 21°58'46" East a distance of 40.44 feet; Thence North 15°15'02" East a distance of 132.35 feet; Thence North 29°57'22" East a distance of 303.05 feet; Thence North 37°23'17" East a distance of 43.54 feet; Thence North 53°45'20" East a distance of 28.18 feet; Thence North 11°15'18" West a distance of 52.94 feet; Thence North 20°42'41" East a distance of 40.11 feet; Thence North 51°26'55" East a distance of 51.11 feet; Thence North 82°11'09" East a distance of 50.21 feet; Thence North 63°24'40" East a distance of 37.22 feet; Thence North 23°15'01" West a

distance of 40.59 feet; Thence North 00°41'52" East a distance of 62.09 feet; Thence North 08°27'30" East a distance of 46.76 feet; Thence North 43°17'49" East a distance of 17.33 feet; Thence North 08°37'38" West a distance of 20.22 feet; Thence North 33°16'49" West a distance of 24.15 feet to the point on a non-tangent curve, concave Easterly, having a radius of 50.00 feet, an included angle of 53°38'08", (Chord Bearing: North 04°59'48" East, chord distance of 45.12 feet) thence along said curve a distance of 46.81 feet to a point; Thence North 31°48'52" East a distance of 35.04 feet; Thence North 53°12'33" East a distance of 43.18 feet; Thence North 00°29'38" East a distance of 14.12 feet; Thence North 00°00'00" West a distance of 71.37 feet; Thence North 11°19'06" East a distance of 74.85 feet; Thence North 04°24'07" East a distance of 56.25 feet; Thence North 03°34'45" East a distance of 71.01 feet; Thence North 02°02'42" West a distance of 156.68 feet; Thence North 68°45'29" West a distance of 31.68 feet; Thence North 67°06'52" West a distance of 38.74 feet; Thence North 30°59'22" West a distance of 44.92 feet; Thence North 00°46'24" West a distance of 65.52 feet; Thence North 34°42'24" East a distance of 64.78 feet; Thence North 69°48'19" East a distance of 45.47 feet; Thence South 57°07'24" East a distance of 35.82 feet; Thence North 05°29'54" East a distance of 38.43 feet; Thence North 00°50'13" East a distance of 643.81 feet; Thence North 05°42'54" West a distance of 89.15 feet; Thence North 00°00'00" West a distance of 27.94 feet; Thence North 06°20'42" West a distance of 40.92 feet; Thence North 03°49'01" West a distance of 64.70 feet; Thence North 19°59'50" West a distance of 65.38 feet; Thence North 18°26'53" East a distance of 93.39 feet; Thence North 11°19'06" West a distance of 85.92 feet; Thence North 53°41'27" West a distance of 19.39 feet; Thence North 69°01'26" West a distance of 11.21 feet; Thence North 54°25'59" West a distance of 30.68 feet; Thence North 55°42'44" West a distance of 84.91 feet; Thence North 58°45'24" West a distance of 20.29 feet; Thence North 68°40'49" West a distance of 7.01 feet; Thence North 76°10'27" East a distance of 908.83 feet to a point on the Northerly line of Block 2, Lot 1; Thence South 89°54'13" East along the Northerly line of Block 2, Lots 1 and 2, a distance of 1334.30 feet to the POINT OF BEGINNING.

COMMENCING at the Northeast corner of said Block 2, Lot 2; Thence South 00°06'57" West along the Easterly line of said Block 2, Lot 2 and a Southerly extension thereof a distance of 2293.72 feet; thence departing said Southerly extension North 89°53'03" a distance of 1576.36 feet to the POINT OF BEGINNING; Thence South 85°19'50" West a distance of 7.18 feet; Thence South 65°39'39" West a distance of 15.01 feet; Thence North 42°03'11" West a distance of 101.04 feet; Thence North 57°53'03" West a distance of 134.07 feet; Thence South 88°16'08" West a distance of 74.91 feet; Thence South 58°36'02" West a distance of 43.65 feet; Thence South 41°46'23" West a distance of 42.08 feet; Thence South 71°14'25" West a distance of 58.04 feet; Thence North 69°46'42" West a distance of 45.54 feet; Thence South 89°52'34" West a distance of 124.43 feet; Thence North 08°37'38" West a distance of 20.22 feet; Thence North 89°52'35" East a distance of 131.00 feet; Thence South 69°49'52" East a distance of 42.10 feet; Thence North 71°14'25" East a distance of 45.65 feet; Thence North 41°46'23" East a distance of 39.78 feet; Thence North 58° 36'02" East a distance of 51.91 feet; Thence North 88°16'08" East a distance of 86.30 feet; Thence South 57°53'03" East a distance of 142.94 feet; Thence South 42°03'11" East a distance of 112.74 feet to the Point of Beginning.

Containing 126.14 Acres (5,494,409 Square Feet) more or less.

Legal Description (Area 7):

A portion of Lot 2, Block 1, of the record plat of Magnolia Creek as recorded in Plat Book 12, Pages 70-79 of the Public Records of Osceola County, Florida and lying in Sections 27 & 34, Township 25 South, Range 27 East and being more particularly described as follows:

Commencing at the Southeasterly most corner of said Lot 1, Block 1; Thence North 00°16'21" East along the Easterly Boundary line of said Lots 1 and 2, Block 1, a distance of 2450.42 feet; Thence North 00° 12'39" East along the Easterly boundary of said Block 1 a distance 1717.92 feet; Thence leaving said Easterly line run North 89°47'21 West a distance of 627.19 feet; Thence South 00°12'39" West a distance of 296.55 feet to the POINT OF BEGINNING; Thence run the following courses and distances along the boundary of Area 7; Thence South 19°04'01" West a distance of 34.87 feet; Thence South 10°53'09" West a distance of 33.54 feet; Thence South 04°15'17" West a distance of 30.34 feet; Thence South 01°09'44" East a distance of 34.22 feet; Thence South 07°46'49" East a distance of 30.33 feet; Thence South 17°45'38" East a distance of 78.71 feet; Thence South 66°31'14" West a distance of 11.30 feet; Thence North 73°54'47" West 31.58 feet; Thence South 85°04'30" West a distance of 91.93 feet to a Point of Curvature, concave Westerly, having a Radius of 328.00 feet, an Included Angle of 28°58'20", (Chord Bearing: North 01°11'34" West, Chord Distance 164.10 Feet), thence run along said curve a distance of 165.86 feet; Thence North 15°40'44" West a distance of 101.52 feet; Thence North 78°28'28" East a distance of 19.28 feet; Thence South 72°50'23" East a distance of 37.84 feet; Thence North 87° 10'57" East a distance of 62.74 feet; Thence South 63°08'29" East a distance of 41.06 feet to the POINT OF BEGINNING of said Area 7.

Said parcel contains 0.67 acres (29,138 square feet), more or less.

Legal Description (Area 8):

A portion of Lot 2, Block 1, of the Record Plat of Magnolia Creek as recorded in Plat Book 12, Pages 70-79 of the Public Records of Osceola County, Florida and lying in Sections 27 & 34, Township 25 South, Range 27 East and being more particularly described as follows:

Commencing at the Southeasterly most corner of said Lot 1, Block 1; Thence North 00°16'21" East along the Easterly Boundary line of said Lots 1 and 2, Block 1, a distance of 2450.42 feet; Thence North 00° 12'39" East a distance of 1295.41 feet to the POINT OF BEGINNING; Thence run the following courses and distances along the boundary of said Area 8: Thence South 51°27'30" West a distance of 35.74 feet; Thence South 51°42'41" West a distance of 42.68 feet; Thence South 57°41'14" West a distance of 75.26 feet; Thence South 61°37'27" West a distance of 72.21 feet; Thence South 70°10'23" West a distance of 26.32 feet; Thence South 11°21'34" West a distance of 25.07 feet; Thence South 26°42'13" West a distance of 69.79 feet; Thence South 56°16'37" West a distance of 18.76 feet; Thence South 12°16'12" West a distance of 18.40 feet; Thence South 69°55'56" West a distance of 75.38 feet; Thence North 76°10'33" West a distance of 95.29 feet; Thence North 61°14'56" West a distance of 43.63 feet; Thence North 55°43'42" West a distance of 21.68 feet; Thence North 55°08'04" West a distance of 34.09 feet; Thence North 45°37'52" West a distance of 85.76 feet; Thence North 35°27'08" East a distance of 14.89 feet; Thence North 28°53'18" West a distance of 36.70 feet; Thence South 58°15'59" West a distance of 13.89 feet; Thence North 17°45'38" West a distance of 76.96 feet; Thence North 07°46'49" West a distance of 27.42 feet; Thence North 01°09'44" West a distance of 32.12 feet; Thence North 04°15'17" East a distance of 28.24 feet; Thence North 10°53'09" East a distance of 30.95 feet; Thence North 19°04'01" East a distance of 40.83 feet; Thence North 59°59'53" East a distance of 22.75 feet; Thence North 43°43'42" East a distance of 51.77 feet; Thence North 56°05'29" East a distance of 46.96 feet; Thence North 65°23'25" East a distance of 26.18 feet; Thence North 42°42'45" East a distance of 32.05 feet; Thence North 34°29'10" East a distance of 36.80 feet; Thence North 32°35'31" East a distance of 38.07 feet; Thence North 64°18'30" East a distance of 54.20 feet; Thence North 57°28'02" East a distance of 39.92 feet; Thence North 60°36'33" East a distance of 60.08 feet; Thence North 77°29'45" East a distance of 77.28 feet; Thence South 84°23'52" East a distance of 57.80 feet; Thence North 65°58'35" East a distance of 33.46 feet; Thence South 89°22'42" East a distance of 46.31 feet; Thence North 66°49'46" East a distance of 9.17 feet; Thence North 69°45'10" East a distance of 57.98 feet; Thence South 73°04'34" East a distance of 18.47 feet to a point on the Easterly line of said Lot 2, Block 1; Thence run South 00°12'39" West along said Easterly line a distance of 417.14 feet to the POINT OF BEGINNING of Area 8.

Said parcel contains 6.91 acres (301,110 square feet) more or less.

Return to Wade Smith
7855 Osceola Polk Line Rd Suite A
Davenport FL 33896

LARRY WHALEY 10P
OSCEOLA COUNTY, FLORIDA
CLERK OF CIRCUIT COURT

CL 2003001206 OR 2170/2341
BIW Date 01/03/2003 Time 09:54:26

DOC STAMPS: 0.00

THIS SPACE RESERVED FOR RECORDER'S USE

DEED OF CONSERVATION EASEMENT

THIS DEED OF CONSERVATION EASEMENT is given this 18th day of December, 2002, by **Ginn-LA Orlando Ltd., LLLP**, 7855 Osceola–Polk Line Road, Suite A, Davenport, FL 33896 ("**Grantor**"), to the South Florida Water Management District ("**District**" or "**Grantee**"). As used herein, the term Grantor shall include any and all heirs, successors or assigns of the Grantor, and all subsequent owners of the "Property" (as hereinafter defined) and the term Grantee shall include any successor or assignee of Grantee.

WITNESSETH

WHEREAS, the Grantor is the owner of certain lands situated in Osceola County, Florida, and more specifically described in Exhibit "A" attached hereto and incorporated herein ("**Property**"); and

WHEREAS, the Grantor desires to construct (name of project) Reunion Project fks Magnolia Creek ("**Project**") at a site in Osceola County, which is subject to regulatory jurisdiction of the District; and

WHEREAS, District Permit No. 49-01107-P ("**Permit**") authorizes certain activities which affect surface waters in or of the State of Florida; and

WHEREAS, this Permit requires that the Grantor preserve and/or mitigate wetlands under the District's jurisdiction; and

WHEREAS, the Grantor has developed and proposed as part of the permit conditions a conservation tract and maintenance buffer involving preservation of certain wetland and/or upland systems on the Property; and

WHEREAS, the Grantor, in consideration of the consent granted by the Permit, is agreeable to granting and securing to the Grantee a perpetual conservation easement as defined in Section 704.06, Florida Statutes (2000), over the Property which includes third party enforcement rights for the District.

NOW, THEREFORE, in consideration of the issuance of the Permit to construct and operate the permitted activity, and as an inducement to the District in issuing the Permit, together with other good and valuable consideration, the adequacy and receipt of which is hereby acknowledged, Grantor hereby grants, creates and establishes a perpetual conservation easement for and in favor of the Grantee upon the Property which shall run with the land and be binding upon the Grantor, and shall remain in full force and effect forever.

The scope, nature and character of this conservation easement shall be as follows:

1. It is the purpose of this conservation easement to retain land or water areas in their natural, vegetative, hydrologic, scenic, open, agricultural or wooded condition and to retain such areas as suitable habitat for fish, plants or wildlife. Those wetland and/or upland areas included in the conservation easement, which are to be enhanced or created pursuant to the Permit, shall be retained and maintained in the enhanced or created conditions required by the Permit.

To carry out this purpose, the following rights are conveyed to Grantee and the District by this easement:

(a) To enter upon the Property at reasonable times with any necessary equipment or vehicles to enforce the rights herein granted in a manner that will not unreasonably interfere with the use and quiet enjoyment of the Property by Grantor at the time of such entry; and

(b) To enjoin any activity on or use of the Property that is inconsistent with this conservation easement and to enforce the restoration of such areas or features of the Property that may be damaged by any inconsistent activity or use.

2. Except for restoration, creation, enhancement, maintenance and monitoring activities, or surface water management improvements, which are permitted or required by the Permit, the following activities are prohibited in or on the Property:

(a) Construction or placing of buildings, roads, signs, billboards or other advertising, utilities or other structures on or above the ground;

(b) Dumping or placing of soil or other substance or material as landfill, or dumping or placing of trash, waste or unsightly or offensive materials;

(c) Removal or destruction of trees, shrubs or other vegetation, except for the removal of exotic or nuisance vegetation in accordance with a District approved maintenance plan;

(d) Excavation, dredging or removal of loam, peat, gravel, soil, rock or other material substance in such manner as to affect the surface;

(e) Surface use, except for purposes that permit the land or water area to remain in its natural condition;

(f) Activities detrimental to drainage, flood control, water conservation, erosion control, soil conservation, or fish and wildlife habitat preservation including, but not limited to, ditching, diking and fencing;

(g) Acts or uses detrimental to such aforementioned retention of land or water areas;

(h) Acts or uses which are detrimental to the preservation of the structural integrity or physical appearance of sites or properties of historical, architectural or cultural significance.

3. Grantor reserves all rights as owner of the Property, including the right to engage in uses of the Property that are not prohibited herein and that are not inconsistent with any District rule, criteria, the Permit and the intent and purposes of this Conservation Easement. The District may permit passive recreational uses that are not contrary to the purpose of this conservation easement upon written approval. Notwithstanding the prohibitions specified in Subparagraphs (a) through (h) of Paragraph 2 above, Grantor expressly reserves the right to do the following:

(a) Grantor may maintain, repair, enhance and replace any existing utility lines, conduits, pipes and related equipment and improvements now existing on the Property (collectively, the "**Existing Facilities**"); provided, however, that in no event shall any enhancement of any Existing Facilities result in an increase in the area impacted by the Existing Facilities or increase the height of any existing power poles or transmission towers, unless a separate permit therefore is issued by Grantee.

(b) Provided that Grantor obtains all necessary permits from the District therefore, the Grantor may conduct limited land clearing for the purpose of constructing, and Grantor may construct facilities for passive recreational uses such as pervious docks, boardwalks, trails created using mulch or other pervious, educational signage and picnic tables and associated facilities. Grantor shall, not later than sixty, (60), days prior to the initiation of construction, submit a request for issuance of a permit for such activities to the District accompanied by plans for the construction of the proposed facilities. Such permit request shall also include, but not be limited to, a description of the intended use and the design, construction techniques and intended locations of the facilities proposed to be constructed by Grantor.

(c) The construction and use of the facilities described in subparagraphs (a) and (b) above shall be subject to the following conditions:

(i) Grantor shall minimize and avoid, to the fullest extent possible, impact to any wetland or upland buffer areas within the Conservation Easement Area and shall avoid materially diverting the direction of the natural surface water flow in such area;

(ii) Such facilities and improvements shall be constructed and maintained utilizing Best Management Practices;

(iii) Adequate containers for litter disposal shall be situated adjacent to such facilities and improvements and periodic inspections shall be instituted by the maintenance entity, to clean any litter from the area surrounding the facilities and improvements; and

(iv) This conservation easement shall not constitute permit authorization for the construction and operation of passive recreational facilities. Any such work shall be subject to all applicable federal, state, District or local permitting requirements.

4. No right of access by the general public to any portion of the Property is conveyed by this conservation easement.

5. Neither Grantee nor the district shall be responsible for any costs or liabilities related to the operation, upkeep or maintenance of the Property.

6. Grantor shall pay any and all real property taxes and assessments levied by competent authority on the Property.

7. Any costs incurred in enforcing, judicially or otherwise, the terms, provisions and restrictions of this conservation easement shall be borne by and recoverable against the nonprevailing party in such proceedings.

8. The District shall have third party enforcement rights of the terms, provisions and restrictions of this conservation easement. Enforcement of the terms, provisions and restrictions shall be at the discretion of the Grantee, or the District, and any forbearance on behalf of the Grantee or the District to exercise its rights hereunder in the event of any breach hereof by Grantor, shall not be deemed or construed to be a waiver of Grantee's or District's rights hereunder.

9. Grantee will hold this conservation easement exclusively for conservation purposes. Grantee will not assign its rights and obligations under this conservation easement except to another organization qualified to hold such interests under the applicable state laws, including, but not limited to, a Community Development District or a Property Owner's Association. No assignment shall be made unless the District gives prior written approval.

10. If any provision of this conservation easement or the application thereof to any person or circumstances is found to be invalid, the remainder of the provisions of this conservation easement shall not be affected thereby, as long as the purpose of the conservation easement is preserved.

11. All notices, consents, approvals or other communications hereunder shall be in writing and shall be deemed properly given if sent by United States certified mail, return receipt requested, addressed to the appropriate party or its successor-in-interest.

12. Any amendments or modifications to the terms, conditions, restrictions or purpose of this conservation easement, or any release or termination thereof, shall be subject to prior review and written approval by the District. The District shall be provided no less than ninety (90) days advanced notice in the manner described herein of any such proposed amendment, modification, termination or release. This conservation easement may be amended, altered, released or revoked only by written agreement between the parties hereto and the District or their heirs, assigns or successors-in-interest, which shall be filed in the public records in Osceola County.

13. This Conservation Easement is not intended to preclude continued discharge of stormwater onto the Property, so long as such discharge is in accordance with all necessary permits and authorizations.

TO HAVE AND TO HOLD unto Grantee forever. The covenants, terms, conditions, restrictions and purpose imposed with this conservation easement shall be binding upon Grantor, and shall continue as a servitude running in perpetuity with the Property.

Grantor hereby covenants with said Grantee that Grantor is lawfully seized of said Property in fee simple; that the Property is free and clear of all encumbrances that are inconsistent with the terms of this conservation easement and all mortgages and liens have been subordinated to this conservation easement; that Grantor has good right and lawful authority to convey this conservation easement; and that it hereby fully warrants and defends the title to the conservation easement hereby conveyed against the lawful claims of all persons claiming superior rights by virtue of any interest granted to such persons by, through or under Grantor.

IN WITNESS WHEREOF, Ginn-LA Orlando Ltd., LLLP has hereunto set its authorized hand this 18th day of December, 2002.

Signed, sealed and delivered
in the presence of:

Xabier Guerricagoitia

XABIER GUERRICAGOITIA (Print Name)

Elaine James

Elaine James (Print Name)

Ginn-LA Orlando Ltd., LLLP,
a Georgia limited partnership ("**Owner**")

By: **GINN-ORLANDO GP, LLC**, a Georgia limited liability company, its general partner

By: _____

Name: James E. Cooper

Title:Senior Vice President

STATE OF FLORIDA)
) SS
COUNTY OF OSCEOLA)

On this 20 day of DECEMBER, 2002, before me, the undersigned notary public, personally appeared JAMES COOPER, personally known to me to be the person who subscribed to the foregoing instrument, as the (position) SR. VICE President of (corporation) GMD-ORLANDO GP, LLC, a Georgia limited partnership, and acknowledged that he executed the same on behalf of said corporation and that he was duly authorized to do so.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

NOTARY PUBLIC, STATE OF FLORIDA

Joyce Margaret Gilley

Print Name: JOYCE MARGARET GILLEY

My Commission Expires:

Joyce Margaret Gilley
My Commission CC947009
Expires June 19, 2004

South Florida Water Management District

Legal Form Approved: South Florida Water Management District

Legal Form Approved: By Office of Counsel

Date: August 2002

DESCRIPTION:

Area 7

A portion of Lot 2, Block 1, of the record plat of Magnolia Creek as recorded in Plat Book 12, Pages 70–79 of the Public Records of Osceola County, Florida and lying in Sections 27 & 34, Township 25 South, Range 27 East and being more particularly described as follows:

Commencing at the Southeasterly most corner of said Lot 1, Block 1; Thence North 00°16'21" East along the Easterly Boundary line of said Lots 1 and 2, Block 1, a distance of 2450.42 feet; Thence North 00°12'39" East along the Easterly boundary of said Block 1 a distance 1717.92 feet; Thence leaving said Easterly line run North 89°47'21 West a distance of 627.19 feet; Thence South 00°12'39" West a distance of 296.55 feet to the POINT OF BEGINNING; Thence run the following courses and distances along the boundary of Area 7; Thence South 19°04'01" West a distance of 34.87 feet; Thence South 10°53'09" West a distance of 33.54 feet; Thence South 04°15'17" West a distance of 30.34 feet; Thence South 01°09'44" East a distance of 34.22 feet; Thence South 07°46'49" East a distance of 30.33 feet; Thence South 17°45'38" East a distance of 78.71 feet; Thence South 66°31'14" West a distance of 11.30 feet; Thence North 73°54'47" West 31.58 feet; Thence South 85°04'30" West a distance of 9.57 feet to a Point of Curvature, concave Northeasterly, having a Radius of 735.12 feet, an Included Angle of 04°50'25", (Chord Bearing: North 41°16'48" West, Chord Distance 62.08 Feet), thence run along said curve a distance of 62.10 feet to a Point of Curvature on a non–tangent curve concave Northeasterly, having a Radius of 757.56 feet, Included Angle of 04°54'38", (Chord Bearing: North 36°28'35" West, Chord Distance 64.90) thence run along said curve a distance of 64.93 feet; Thence North 15°40'44" West a distance of 159.82 feet; Thence North 78°28'28" East a distance of 29.31 feet; Thence South 72°50'23" East a distance of 37.84 feet; Thence North 87°10'57" East a distance of 62.74 feet; Thence South 63°08'29" East a distance of 41.06 feet to the POINT OF BEGINNING of said Area 7.

Said parcel contains 0.62 acres (27,091 square feet), more or less.

CERTIFIED TO:

Reunion East Community Development District
GINN–LA Orlando, LTD, LLLP
First Bank and Trust Company of Illinois

CH. 61G17–6, Florida Administrative Code requires that a legal description drawing bear the notation that
THIS IS NOT A SURVEY.

SHEET 1 OF 2
SEE SHEET 2 OF 2 FOR SKETCH

BEARINGS SHOWN HEREON ARE BASED ON THE WESTERLY RIGHT OF WAY LINE OF COUNTY ROAD 545 AS BEING NORTH 00°16'21" EAST. ASSUMBED.

SKETCH OF DESCRIPTION

OF
CONSERVATION AREA 7
REUNION RESORT AND CLUB OF ORLANDO
OSCEOLA COUNTY, FLORIDA SECTION 34-25-27

(FIELD DATE:) 10/28/2002
SCALE: 1"=200'
APPROVED BY: BAM
JOB NO. ASM9395
DRAWN BY: SMP

REVISED:

WETLAND_AREA_7.DWG

AMERICAN SURVEYING & MAPPING
CERTIFICATION OF AUTHORIZATION NUMBER LB#6393
320 EAST SOUTH STREET, SUITE 180
ORLANDO, FLORIDA
32801 (407) 426-7979

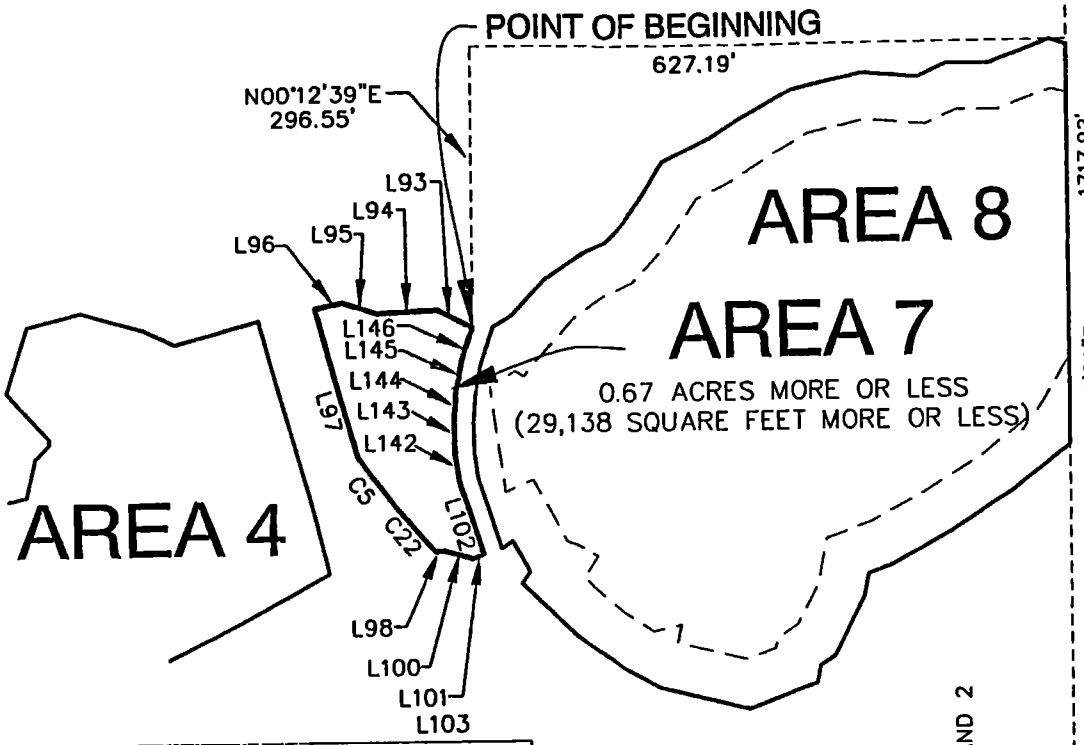
1. THE SURVEYOR HAS NOT ABSTRACTED THE LAND SHOWN HEREON FOR EASEMENTS, RIGHT OF WAY, RESTRICTIONS OF RECORD WHICH MAY AFFECT THE TITLE OR USE OF THE LAND
2. NO UNDERGROUND IMPROVEMENTS HAVE BEEN LOCATED EXCEPT AS SHOWN.
3. NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.

STATE OF FLORIDA

BRETT A. MOSCOWITZ, PSM #5017
DATE:

G:\ASM09\Asm9395 - Magnolia Creek\WETLANDS DESCRIPTIONS\wetland area 7.dwg, 10/28/2002 1:18:04 PM

SKETCH OF DESCRIPTION:



LEGEND

C.R. = COUNTY ROAD

LINE TABLE		
LINE	BEARING	LENGTH
L93	S63°08'29"E	41.06
L94	N87°10'57"E	62.74
L95	S72°50'23"E	37.84
L96	N78°28'28"E	29.31
L97	N15°40'44"W	159.82
L98	S85°04'30"W	9.57
L100	N73°54'47"W	31.58
L101	S66°31'14"W	11.30
L102	S17°45'38"E	78.71
L103	S58°15'59"W	13.89
L142	S07°46'49"E	30.33
L143	S01°09'44"E	34.22
L144	S04°15'17"W	30.34
L145	S10°53'09"W	33.54
L146	S19°04'01"W	34.87

CURVE TABLE					
CURVE	RADIUS	DELTA	CHORD BEARING	CHORD DISTANCE	LENGTH
C5	757.56	04°54'38"	N36°28'35"W	64.90	64.93
C22	735.12	04°50'25"	S41°16'48"E	62.08	62.10

SHEET 2 OF 2
SEE SHEET 1 OF 2 FOR DESCRIPTION

CERTIFIED TO:

Reunion East Community Development District

GINN-LA Orlando, LTD, LLLP

First Bank and Trust Company of Illinois

(FIELD DATE:) 10/28/2002
SCALE: 1"=200'
APPROVED BY: BAM
JOB NO. ASM9395
DRAWN BY: SMP

REVISED:

WETLAND_AREA_7.DWG

AMERICAN SURVEYING & MAPPING
CERTIFICATION OF AUTHORIZATION NUMBER LB#6393
320 EAST SOUTH STREET, SUITE 180
ORLANDO, FLORIDA
32801 (407) 426-7979

DESCRIPTION:

Area 9B

A portion of Lot 1, Block 1, of the record plat of Magnolia Creek as recorded in Plat Book 12, Pages 70-79 of the public records and lying in Section 34, Township 25 South, Range 27 East, and all being in Osceola County, Florida and being more particularly described as follows:

Commence at the Southeasterly most corner of Block 1, Lot 1 of said Magnolia Creek plat, Thence North 00°16'21" East a distance of 2208.22 feet along the Easterly line of Block 1, Lot 1 of said plat of Magnolia Creek; Thence leaving said Easterly line run North 89°43'39" West a distance of 1626.91 feet to the POINT OF BEGINNING; Thence run South 55°30'02" West a distance of 41.11 feet; Thence South 31°30'08" West a distance of 160.36 feet; Thence South 37°15'30" West a distance of 47.54 feet; Thence South 35°02'34" West a distance of 43.75 feet; Thence South 42°29'11" West a distance of 19.71 feet; Thence North 79°47'24" West a distance of 180.62 feet to a point of curvature of a curve concave Northeasterly, having a radius of 28.27 feet, and a central angle of 85°02'32", thence from a chord bearing of North 37°16'08" West, run Northeasterly along the arc of said curve a distance of 41.96 feet to a point; Thence North 05°15'08" East a distance of 67.53 feet; Thence North 37°25'40" West a distance of 38.96 feet; Thence North 00°24'28" West a distance of 127.58 feet; Thence North 04°44'37" East a distance of 67.56 feet; Thence North 21°48'55" East a distance of 36.43 feet to a point of curvature of a curve, concave Southeasterly, having a radius of 32.73 feet, and a central angle of 59°31'53", thence from a chord bearing of North 64°00'44" East, run Northeasterly along the arc of said curve a distance of 32.50 feet to a point; Thence North 89°56'31" East a distance of 186.16 feet; Thence North 75°45'05" East a distance of 99.34 feet; Thence South 22°00'15" East a distance of 42.95 feet; Thence South 32°07'39" East a distance of 107.79 feet to the POINT OF BEGINNING.

Said parcel contains 2.827 acres more or less.

CERTIFIED TO:
REUNION EAST COMMUNITY DEVELOPMENT DISTRICT
GINN-LA ORLANDO LTD, LLLP
FIRST BANK AND TRUST COMPANY OF ILLINOIS

CH. 61G17-6, Florida Administrative Code requires that a legal description drawing bear the notation that
THIS IS NOT A SURVEY.

SHEET 1 OF 2
SEE SHEET 2 OF 2 FOR SKETCH

BEARINGS SHOWN HEREON ARE BASED ON THE WESTERLY RIGHT OF WAY LINE OF COUNTY ROAD 545 AS BEING NORTH 00°16'21" EAST. ASSUMED.

SKETCH OF DESCRIPTION

OF
CONSERVATION AREA 9B
REUNION RESORT AND CLUB OF ORLANDO
OSCEOLA COUNTY, FLORIDA SECTION 34-25-27

(FIELD DATE:) 10/28/2002
SCALE: N.T.S.
APPROVED BY: BAM
JOB NO. ASM9395
DRAWN BY: SMP

REVISED: 11/01/2002
SKETCH & DESCRIPTION

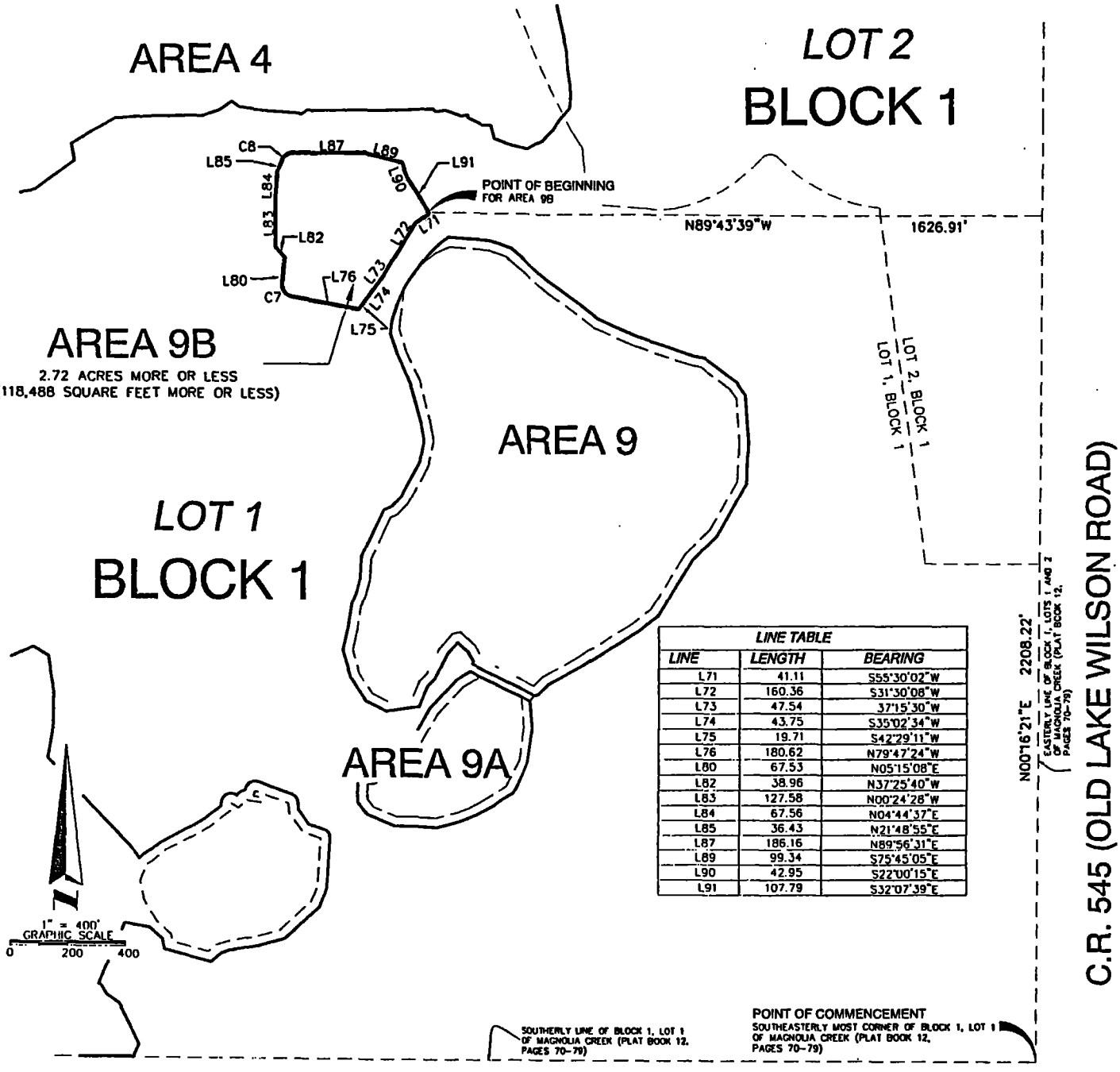
WETLAND_AREA_9B.DWG

AMERICAN SURVEYING & MAPPING
CERTIFICATION OF AUTHORIZATION NUMBER LB#6393
320 EAST SOUTH STREET, SUITE 180
ORLANDO, FLORIDA
32801 (407) 426-7979

1. THE SURVEYOR HAS NOT ABSTRACTED THE LAND SHOWN HEREON FOR EASEMENTS, RIGHT OF WAY, RESTRICTIONS OF RECORD WHICH MAY AFFECT THE TITLE OR USE OF THE LAND
2. NO UNDERGROUND IMPROVEMENTS HAVE BEEN LOCATED EXCEPT AS SHOWN.
3. NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.

BRENT A. MOSCOVITZ, PSM #5011
DATE:

SKETCH OF DESCRIPTION:



LINE TABLE		
LINE	LENGTH	BEARING
L71	41.11	S55°30'02"W
L72	160.36	S31°30'08"W
L73	47.54	S7°15'30"W
L74	43.75	S35°02'34"W
L75	19.71	S42°29'11"W
L76	180.62	N79°47'24"W
L80	67.53	N05°15'08"E
L82	38.96	N37°25'40"W
L83	127.58	N00°24'28"W
L84	67.56	N04°44'37"E
L85	36.43	N21°48'55"E
L87	186.16	N89°56'31"E
L89	99.34	S75°45'05"E
L90	42.95	S22°00'15"E
L91	107.79	S32°07'39"E

CURVE TABLE					
CURVE	LENGTH	RADIUS	DELTA	CHORD	CHORD BEARING
C7	41.96	28.27	85°02'32"	38.21	N37°16'08"W
C8	34.01	32.73	59°31'53"	32.50	N64°00'44"E

LEGEND

C.R. = COUNTY ROAD
N.T.S. = NOT TO SCALE

SHEET 2 OF 2
SEE SHEET 1 OF 2 FOR DESCRIPTION

(FIELD DATE:) 10/28/2002
SCALE: 1"=400'
APPROVED BY: BAM
JOB NO. ASM9395
DRAWN BY: SMP

REVISED: 11/01/2002
SKETCH & DESCRIPTION
WETLAND_AREA_9B.DWG

AMERICAN SURVEYING & MAPPING
CERTIFICATION OF AUTHORIZATION NUMBER LB#6393
320 EAST SOUTH STREET, SUITE 180
ORLANDO, FLORIDA
32801 (407) 426-7979.

Appendix D

Sand Skink Habitat Assessment

and

USFWS Exemption Request

Roadway Design
PD&E Studies
Structures
Water Resources
Ecology
Utilities
Public Involvement

September 7, 2021

Alfredo Begazo
US Fish and Wildlife Service
Ecological Services Office/Conservation Planning Assistance
1339 20th Street
Vero Beach, Florida 32960

Re: Osceola County Old Lake Wilson Road PD&E Study (FM: 448781-1)
Osceola County, Florida
Request for Sand Skink Survey Exemption

Mr. Begazo,

Osceola County is conducting a Project Development & Environment (PD&E) Study to evaluate the two to four lane widening of Old Lake Wilson Road from just north of County Road 532 to just south of Sinclair Road (**Figure 1** in attached report). The study corridor, which is maintained by Osceola County, traverses approximately 2.5 miles of Old Lake Wilson Road located within Sections 22, 23, 26, 27, 34 and 35 of Township 25 South and Range 27 East.

Inwood Consulting Engineers, Inc. (Inwood) conducted a field investigation consisting of a pedestrian survey and sand skink habitat assessment on June 16, 2021, to determine the potential presence of skinks or their habitat within the proposed project area. The Sand Skink Habitat Assessment Memorandum detailing the results of the field investigation is included with this letter.

The proposed project is located within the geographic range and the U.S. Fish and Wildlife Service Consultation Area of the sand skink. The proposed project area meets the criteria identified in the USFWS's Peninsular Florida Species Conservation and Consultation Guide for the Sand Skink and Blue-Tailed Mole Skink as being suitable for skinks.

The proposed project is within the USFWS Consultation Area for skinks, is mapped as containing suitable soils, and is above 82 feet in elevation. However, based on the conditions observed within the study area, including disturbance from current land use with surrounding development and roadways limiting connectivity to suitable habitat, we are requesting an exemption from further survey efforts, specifically coverboard surveys, for sand skinks within the study area.

We are happy to provide additional documentation or conduct a field review with USFWS staff, if requested. If you have any questions regarding this project, please do not hesitate to contact Jada Barhorst or me at 407-971-8850.

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Very truly yours,
Inwood Consulting Engineers, Inc.

Jason Houck, GISP, PWS
Associate Principal
Ecological Services Manager

CC: Joshua DeVries (Osceola County)
David Dangel (Inwood)
Jada Barhorst (Inwood)

Enclosures: Sand Skink Habitat Assessment Memorandum

Inwood consulting engineers

Memo

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DATE: 8/26/2021

TO: Joshua DeVries, AICP

FROM: Jada Barhorst

RE: Old Lake Wilson PD&E Study in Osceola County, Florida
FM: 448781-1
Sand Skink Habitat Assessment

CC: David Dangel (Inwood)
Jason Houck (Inwood)

This memorandum is intended to document the results of the field investigation conducted by Inwood staff on June 16, 2021, to determine the potential for the presence of the federally listed Florida sand skink (*Neoseps reynoldsi*) and blue-tailed mole skink (*Eumeces egregius lividus*) (skinks) within the limits of the Old Lake Wilson PD&E Study area (**Figure 1**) in Osceola County, Florida.

Osceola County is conducting a PD&E Study to evaluate the two lane to four lane widening of Old Lake Wilson Road from just north of County Road 532 to just south of Sinclair Road, a distance of approximately 2.25 miles. The project also involves widening or replacing the existing bridge over Interstate 4 and the addition of bicycle and pedestrian features throughout the project corridor.

The proposed study area meets the criteria defined by the US Fish and Wildlife Service (USFWS) in the "Peninsular Florida Species Conservation and Consultation Guide for the Sand Skink and Blue-tailed (Bluetail) Mole Skink (2020)" as being suitable to support skinks based on location, elevation, and soils. A field investigation to confirm the skink suitability within the project boundaries was completed and included a pedestrian survey of the project area, described below.

Data Acquisition and Field Methodology

Prior to conducting the field survey, Inwood staff reviewed the most currently available information to determine the potential occurrence of skinks within and immediately adjacent to the proposed project boundary. Data obtained for review includes but was not limited to:

- USFWS Peninsular Florida Species Conservation and Consultation Guide for the Sand Skink and Blue-tailed (Bluetail) Mole Skink (2020)
- Natural Resources Conservation Service (NRCS) soil maps
- South Florida Water Management District (SFWMD) Florida Land Use, Cover and Forms Classification System (FLUCFCS) maps
- USFWS Consultation Area maps
- US Geological Service Topographic maps
- Water Permitting Portal, Department of Environmental Protection (DEP) / E-permitting (SFWMD)

The field investigation consisted of a pedestrian survey to document existing habitat types, identify suitable skink habitat, and survey any sandy areas to identify skink tracks within the study limits. The investigation included assessment transects along the right-of-way within areas which meet the USFWS soils and elevation criteria for sand skinks. The transects were set perpendicular to the existing roadway in non-developed areas. A minimum of two pits were dug along each transect at a depth of 6-12 inches to

document the physical properties of the soils and assess their potential to support skinks. The pits were generally spaced to be evenly distributed along the transect starting approximately 10-12 feet from the edge of pavement to the existing right-of-way limits. A total of four transects were established along the right-of-way. The locations of the transects and soil pits are depicted in **Figure 2**. Photos of the habitat and soils conditions observed in the field are provided below.

Existing Site Conditions

Location and Elevation

The proposed site is located in Osceola County, which is within the Consultation Area (CA) for the sand skink and blue-tailed mole skink. Elevations within the project area range from 85 to 150 feet above sea level (**Figure 3**). These elevations meet the criteria of 82 feet or higher above sea level to be suitable for skinks.

Soils

According to the NRCS Soil Survey, the proposed project area is comprised of seven soil types (**Figure 4**). Six of the soil types within the study area are considered to be suitable for skinks and include the following soil series: Candler, Pomello, Pompano, Samsula, and Smyrna. Most of the project area contains soils identified as skink soils.

Soils pits were dug along the transects to determine the soil suitability and their potential to support skinks. The corridor is highly developed, limiting areas with appropriate land use for the soils assessment. Details of the soils assessment are provided in **Table 1**.

TABLE 1: Soils Assessment Descriptions

PIT NUMBER	DESCRIPTION
Transect 1 Pit 1A	Candler Soils Series; 95 ft. Elevation Pit dug approximately 10 ft. from the edge of pavement within the mowed and maintained right-of-way. Groundcover dominated by bahiagrass (*Paspalum notatum*), carpetgrass (*Axonopus compressus*), and nutgrass (*Cyperus rotundus*). Dense roots and rhizomes within 0-2 inch depth. Compacted soils within 0-4 inches. Soil comprised primarily of fill with roadway materials.
Transect 1 Pit 1B	Candler Soils Series; 95 ft. Elevation Pit dug approximately 40 ft. from the edge of pavement within mowed and maintained right-of-way. Groundcover dominated by bahiagrass, carpetgrass, and Florida pusley (*Richardia scabra*) with small areas of exposed soil. Pit dug in area of exposed sandy soil. Top 0.5 in contained loose sand with compacted fill beyond first 0.5 inch. Adjacent habitat is forested wetlands with dense cogongrass occurring outside the maintained right-of-way.
Transect 2 Pit 2A	Candler Soils Series; 105 ft. Elevation Pit dug approximately 10 ft. from the edge of pavement within the mowed and maintained right-of-way. Groundcover dominated by bahiagrass, carpetgrass, and Florida pusley. Dense rhizomes and roots within 0-2 inches. Soil compacted and consisted of fill with road base materials and rocks/gravel.

PIT NUMBER	DESCRIPTION
Transect 2 Pit 2B	Candler Soils Series; 105 ft. Elevation Pit dug approximately 50 ft. from the edge of pavement within the mowed and maintained right-of-way. Vegetation is less dense than Pit 2A area and dominated by Florida pusley, bahaigrass and carpetgrass, with some exposed soil. Pit dug in exposed soil area. Loose soils comprised of fill with roots within 0-1 inch.
Transect 2 Pit 2C	Candler Soils Series; 100 ft. Elevation Pit dug approximately 100 ft. from the edge of pavement within the mowed and maintained right-of-way. Soils less compacted, with organic layer 0-0.5 inch, and comprised of fill. Groundcover is less dense and dominated by bahiagrass and camphorweed (*Heterotheca subaxillaris*). Adjacent to area of unmaintained overgrown vegetation, forested wetlands, and dry retention pond.
Transect 3 Pit 3A	Candler Soils Series; 115 ft. Elevation Pit dug approximately 10 ft. from the edge of pavement within the mowed and maintained right-of-way. Groundcover dominated by bahiagrass with carpetgrass and camphorweed. Moderate root density within 0-1 inch with thatch and organics. Compacted soils comprised of fill with small amount of road base materials.
Transect 3 Pit 3B	Candler Soils Series; 115 ft. Elevation Pit dug approximately 40 ft. from edge of pavement near retaining wall at right-of-way limits. Groundcover dominated by bahiagrass with carpetgrass and camphorweed Dense roots within 0-1 inch. Difficult to dig a pit. Soils very compacted and comprised of fill with rocks
Transect 4 Pit 4A	Candler Soils Series; 110 ft. Elevation Pit dug approximately 10 ft. from edge of pavement within the mowed and maintained right-of-way. Groundcover comprised of bahiagrass, carpetgrass, Florida pusley and areas of St. Augustine sod. Thick matting/thatching observed. Moderately compacted fill with dense roots, rhizomes, and organics (thatch) within 0-2 inches, which contained road base material and rocks.
Transect 4 Pit 4B	Candler Soils Series; 110 ft. Elevation Pit dug approximately 40 ft. from the edge of pavement within the mowed and maintained right-of-way. Limited patches of exposed soils. Put dig in unvegetated patch of exposed soil surrounded by St. Augustine grass, Florida pusley, bahiagrass, and carpetgrass. Loose soil consisting of fill material with chunks of rock/road base.
Additional Notes	The existing right-of-way consists of mowed and maintained turf grasses with few areas of exposed soils. The majority of the study area is comprised of compacted fill soil containing road base, gravel, and dense roots. The corridor is fully developed and includes landscape features with thick mulch, sidewalks, drainage features, and random paved/gravel deposits throughout the study area. Additionally, adjacent habitats are unsuitable to provide a source population.

Existing Land Use and Vegetative Communities

The land uses and vegetative communities occurring within the project area were classified according to the FLUCFCS. Existing SFWMD regulatory GIS layers were utilized to identify the distribution of FLUCFCS types within study area surrounding lands (**Figure 5**). These community types were then verified during the field investigation.

The majority of the study area is developed and minimal natural vegetative communities remain. The following describes the existing FLUCFCS within the study area.

Urban and Built-Up
FLUCFCS types within this category include Residential (FLUCFCS: 131, 133, 134, 139), Commercial and Services (FLUCFCS 140), Golf Courses (FLUCFCS 185), and Open Land (FLUCFCS 190). These urban lands are the primary land use within the study area and consist of areas of intensive use with much of the land occupied by man-made structures, limiting vegetative communities that support suitable sand skink habitat.

Upland Non-Forested
FLUCFCS types within this category include Herbaceous Dry Prairie (FLUCFCS 310). This land use type is located on the east side of Old Lake Wilson Road, near I-4 at the edge of the 600 ft. study area buffer, and is associated with the Davenport Compression Station property. This area is outside the proposed limits of construction and surrounded by forested wetlands and man-made structures.

Upland Forests
FLUCFCS types within this category include Coniferous Plantations (FLUCFCS 441) and or located just beyond the northern project limits. Recent development at the intersection of Old Lake Wilson Road and Sinclair Road has reduced the coverage of this vegetative community. The remaining habitat is outside the project limits and will not be impacted by the proposed project.

Wetlands
The wetlands within the study area are forested and include Mixed Wetland Hardwoods (FLUCFCS 617) and Wetland Forested Mixed (FLUCFCS 630). These forested wetlands are associated with Davenport Creek and the Reedy Creek floodplain. Observed vegetation includes bald cypress (*Taxodium distichum*), red maple (*Acer rubrum*), water oak (*Quercus nigra*), cabbage palm (*Sabal palmetto*), Carolina willow (*Salix caroliniana*), saltbush (*Baccharis halimifolia*), elderberry (*Sambucus canadensis*), cinnamon fern (*Osmunda cinnamomea*), soft rush (*Juncus effusus*), Peruvian water primrose (*Ludwigia peruviana*), common cattail (*Typha latifolia*), cogongrass (*Imperata cylindrica*), duckweed (*Lemna* sp.), and greenbriar (*Smilax* sp.).

Transportation, Communication, and Utilities
FLCUCFS types within this category include Roads and Highways (FLUCFCS 814) and Electrical Power Facilities (831). This includes Old Lake Wilson Road and associated right-of-way, in addition to the I-4 overpass and local roads that intersect Old Lake Wilson Road. The right-of-way is predominately mowed and maintained turf grasses which consist of bahiagrass, St. Augustine, and carpetgrass with a variety herbaceous weeds. Limited areas of exposed soils were observed within and adjacent to the right-of-way, and lack the coverage and conditions to support sand skinks.

Results and Recommendations

No skinks or tracks were observed during the pedestrian survey. Most of the study area is developed or otherwise maintained and includes the Old Lake Wilson Road right-of-way. The study area within the proposed right-of-way is primarily vegetated with turf grasses and other ruderal species with extensive roots which preclude sand skink movement. Man-made structures including sidewalks, landscape features, and drainage structures occur throughout the study area within and adjacent to the existing right-of-way. Areas of exposed soils were sparse and patchy and not contiguous with suitable habitat. Generally, soil

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observations along the transects included roadway material (road base, gravel, asphalt) within the pits closest to the road and beyond. Adjacent habitats include wetlands and developed land uses which do not contain suitable skink habitat, sever connectivity, and therefore unlikely to be a source for skinks.

Based on the data search, the study area meets the criteria defined by the USFWS as being suitable to support skinks based on location, elevation, and soils. However, the results of the field investigation and soils assessment conclude that no suitable habitat occurs within the study area as the he study area is developed with no connection to suitable skink habitat. Due to the lack of suitable skink habitat, no effect from the proposed project on skinks is anticipated. Inwood recommends submitting a request to the USFWS for concurrence that the site be excluded from coverboard survey requirements and the proposed project will have "**no effect"** on the sand skink.

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NORTHBOUND ROW

NORTHBOUND ROW

ROW FACING SOUTH TOWARD WETLANDS

CORRIDOR NEAR I-4 WITH ASPHALT IN ROW

STUDY CORRIDOR FACING NORTH

NORTHBOUND ROW

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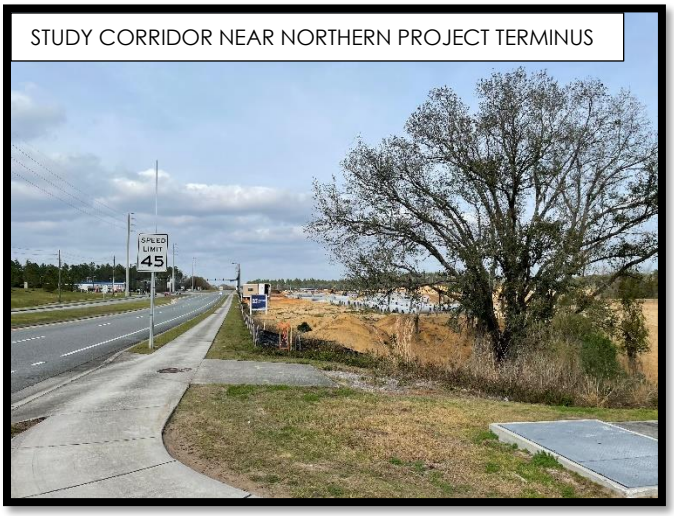
STUDY CORRIDOR NEAR NORTHERN PROJECT TERMINUS



SOUTHBOUND ROW

SOUTHBOUND ROW NEAR I-4

SOUTHBOUND ROW WITH ASPHALT

SOUTHBOUND ROW

SOUTHBOUND ROW

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SOUTHBOUND ROW

SOUTHBOUND ROW

SOUTHBOUND ROW NEAR DAVENPORT CREEK

STUDY CORRIDOR

STUDY CORRIDOR NEAR SOUTHERN PROJECT TERMINUS

TRANSECT 1 ADJECT TO WETLANDS

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PIT 1A

PIT 1B

TRANSECT 2 ADJACENT TO WETLANDS AND RETENTION POND

PIT 2A

PIT 2B

PIT 2C

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TRANSECT 3 ADJACENT TO RETENTION WALL

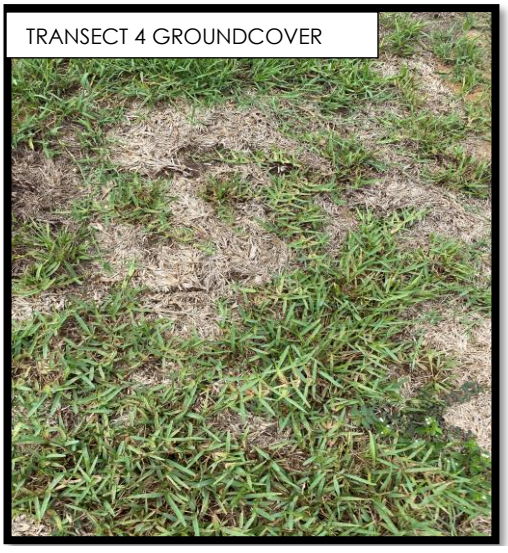
TRANSECT 4ADJACENT TO THICK VEGETATON AND GOLF COURSE

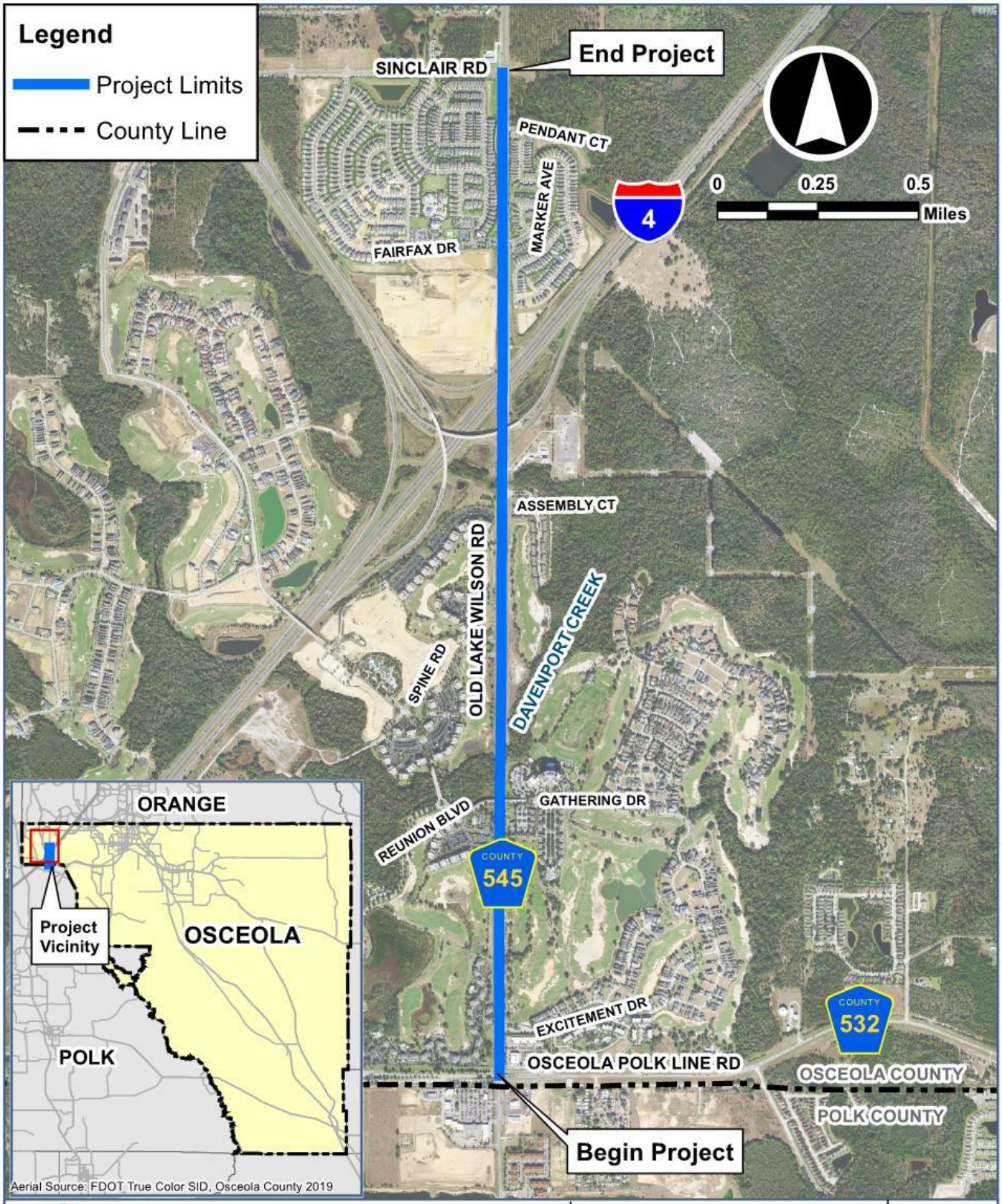
PIT 3A

PIT 4A

PIT 4B

TRANSECT 4 GROUNDCOVER





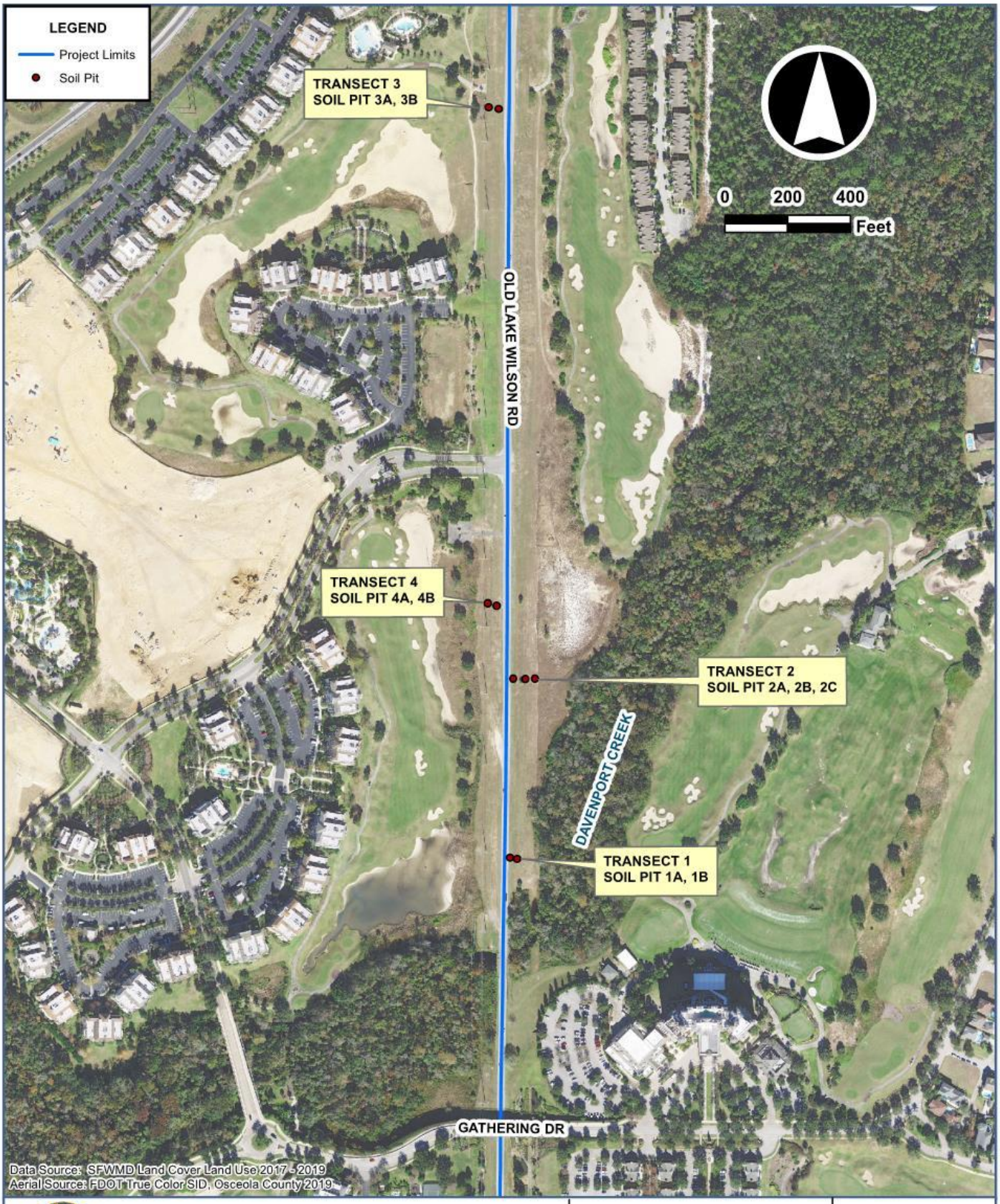
Old Lake Wilson Road PD&E Study

From CR 532 to Sinclair Road

Osceola County, Florida

PROJECT LOCATION MAP

FIGURE 1



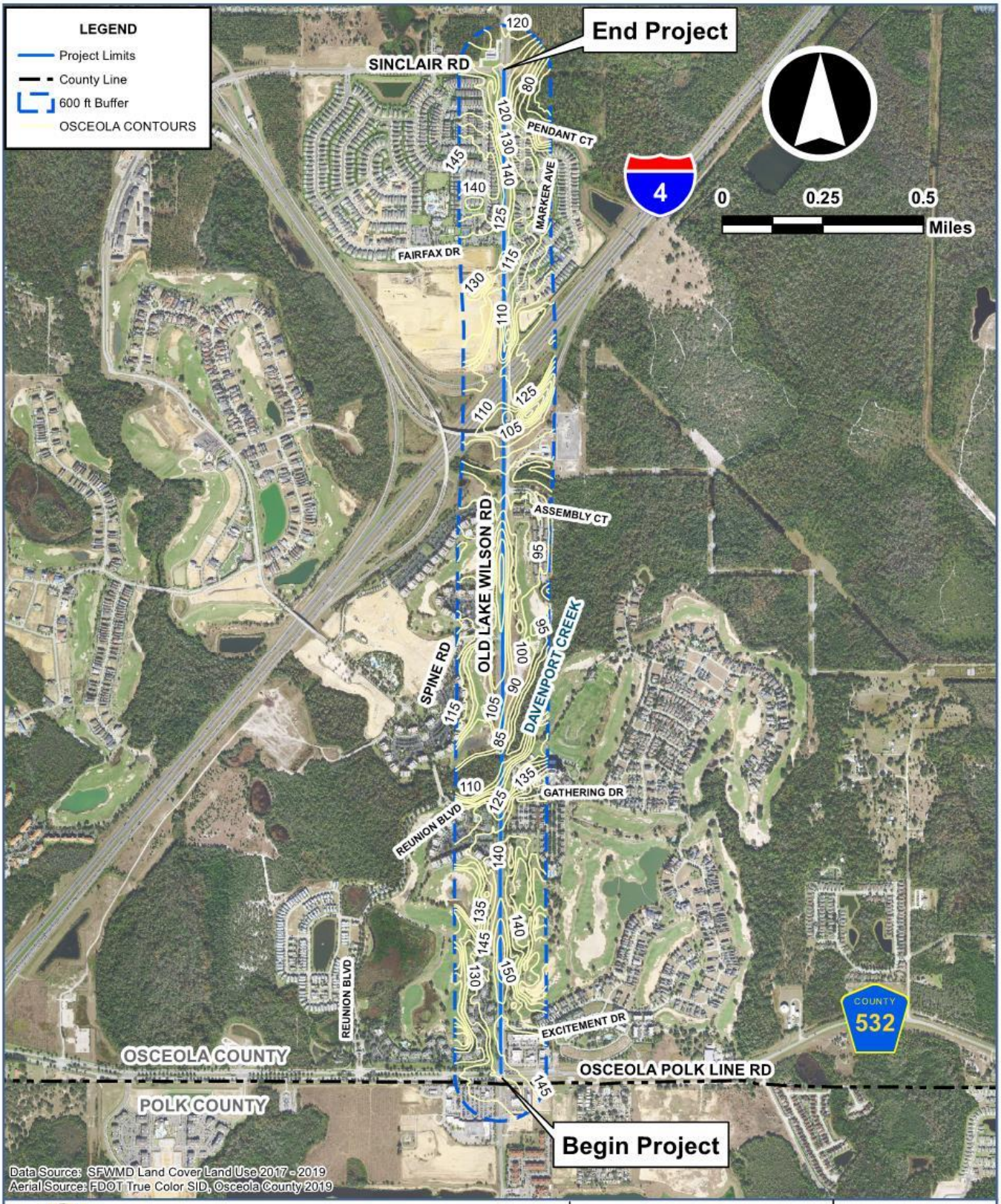
Old Lake Wilson Road PD&E Study

From CR 532 to Sinclair Road

Osceola County, Florida

TRANSECT AND SOIL PIT LOCATION MAP

FIGURE 2



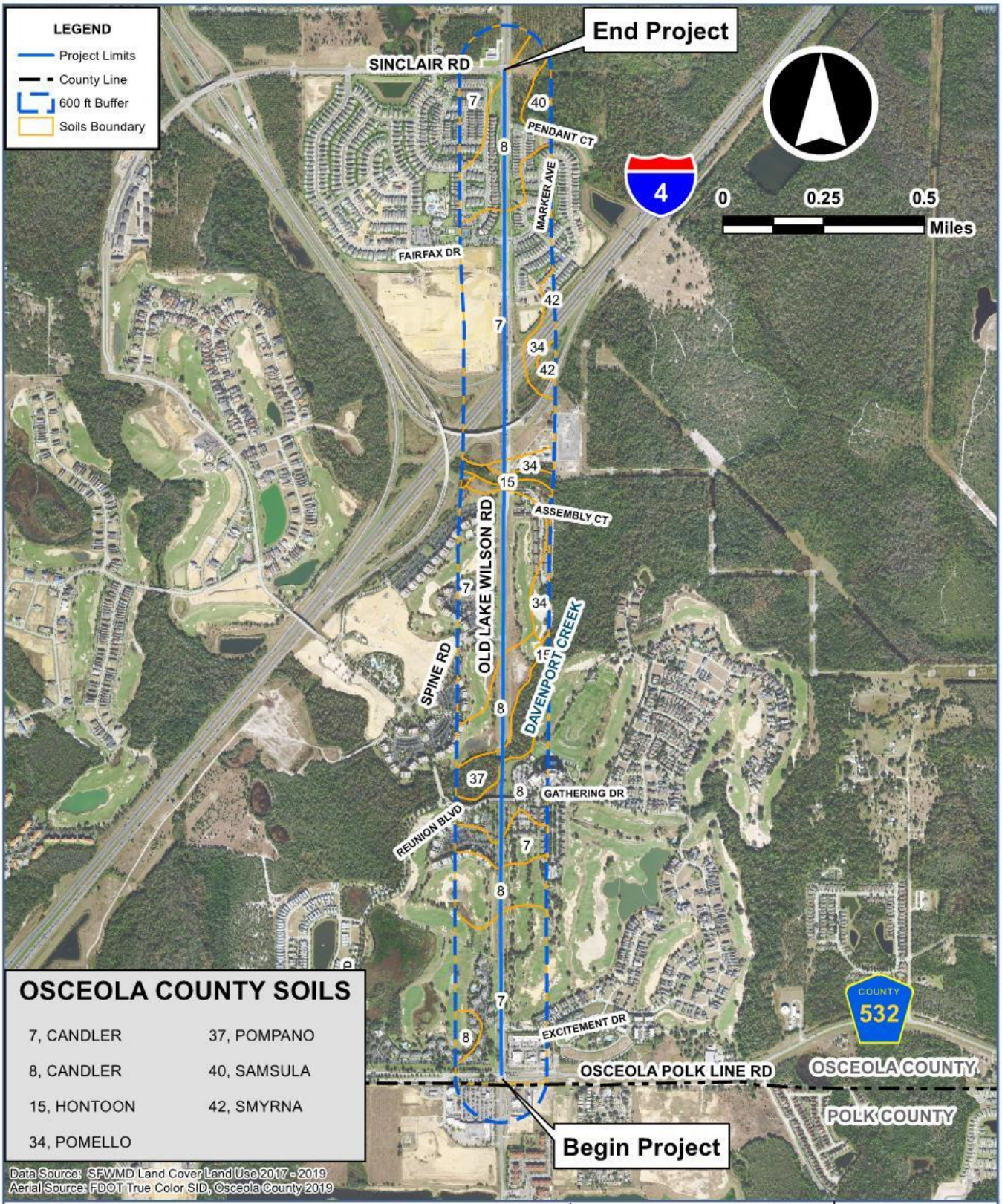
Old Lake Wilson Road PD&E Study

From CR 532 to Sinclair Road

Osceola County, Florida

TOPOGRAPHIC MAP

FIGURE 3



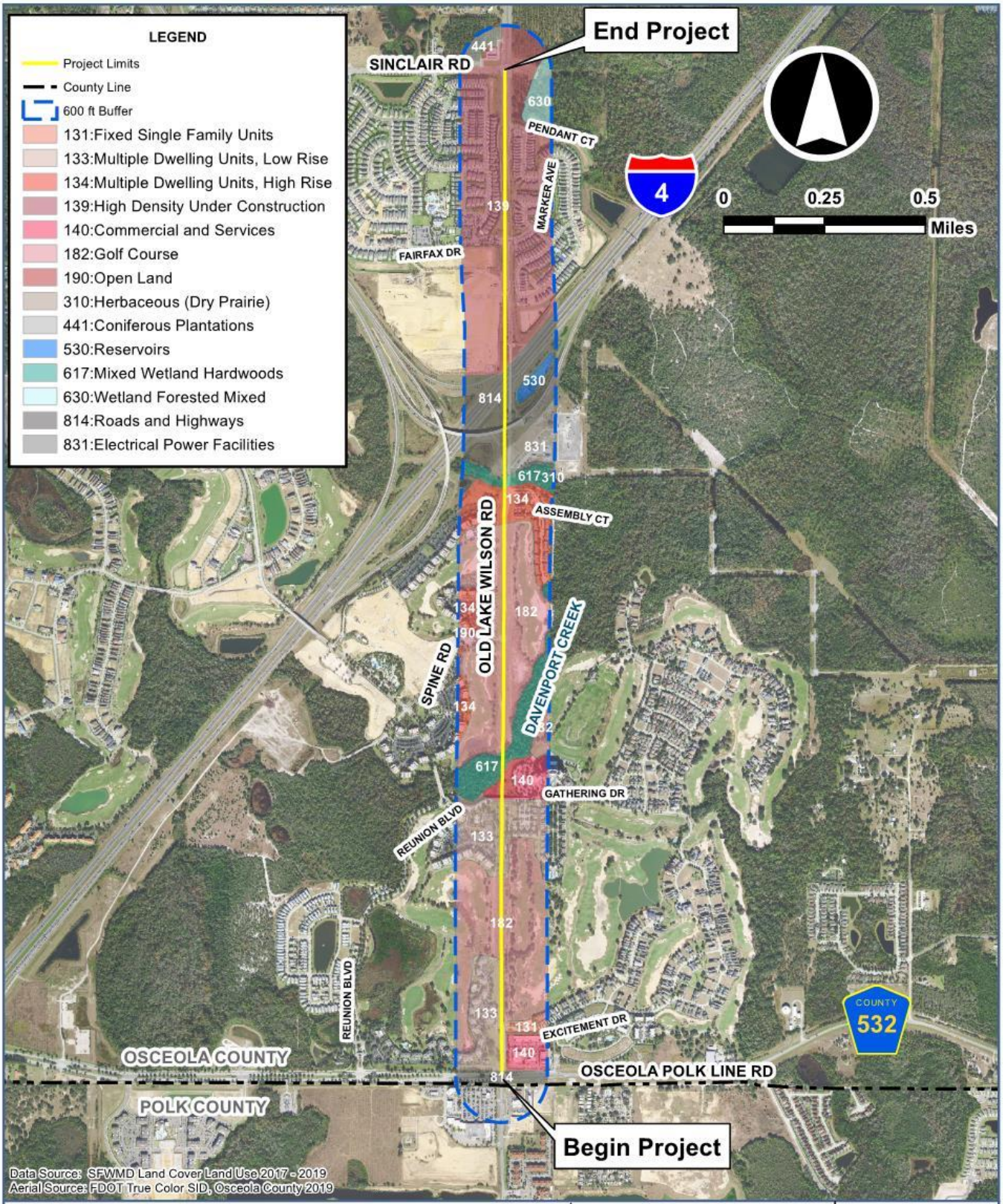
Old Lake Wilson Road PD&E Study

From CR 532 to Sinclair Road

Osceola County, Florida

SOILS MAP

FIGURE 4



Old Lake Wilson Road PD&E Study

From CR 532 to Sinclair Road

Osceola County, Florida

FLUCFCS MAP

FIGURE 5

Appendix E

Agency Coordination

Jada Barhorst

From: Wrublik, John <john_wrublik@fws.gov>
Sent: Thursday, September 30, 2021 12:09 PM
To: Jada Barhorst
Subject: CR 545(Old Lake Wilson Road) from CR 532 to Sinclair Road

Jada,

I am the Transportation Biologist for the U. S. Fish and Wildlife Service's Vero Beach Office and I handle the review of road projects. I have reviewed the information provided in your email to the Service dated September 9, 2021, for the proposed widening of CR 545 (Old Lake Wilson Road) from just North of CR 532 to just south of Sinclair Road in Osceola County. If appears that the skink soils within the project footprint are covered by a think mat of vegetation (turf grasses etc.) with little or no bare ground or have been altered by rocky fill material. I would agree that these conditions would likely preclude sand skinks and blue-tailed mole skinks from using these areas. Therefore, the Service would not request that cover board surveys for sand skinks or their tracks be conducted within these areas.

Sincerely

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

Appendix F

Wood Stork

Effect Determination Key

United States Department of the Interior

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

May 18, 2010

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

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

Dear Mr. Kinard:

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

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

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

Wood stork

Habitat

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

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

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

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

Conservation Measures

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

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

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

The Key is as follows:

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

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

---

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Monitoring and Reporting Effects

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

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

Sincerely yours,

Paul Souza
Field Supervisor
South Florida Ecological Services Office

Enclosures

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

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Appendix G

Standard Protection

Measures for the Indigo Snake

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

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

If the applicant decides to use an eastern indigo snake protection/education plan other than the approved Plan below, written confirmation or "approval" from the USFWS that the plan is adequate must be obtained. At least 30 days prior to any clearing/land alteration activities, the applicant shall submit their unique plan for review and approval. The USFWS will respond via e-mail, typically within 30 days of receiving the plan, either concurring that the plan is adequate or requesting additional information. A concurrence e-mail from the appropriate USFWS Field Office will fulfill approval requirements.

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

POSTER INFORMATION

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

DESCRIPTION: The eastern indigo snake is one of the largest non-venomous snakes in North America, with individuals often reaching up to 8 feet in length. They derive their name from the glossy, blue-black color of their scales above and uniformly slate blue below. Frequently, they have orange to coral reddish coloration in the throat area, yet some specimens have been reported to only have cream coloration on the throat. These snakes are not typically aggressive and will attempt to crawl away when disturbed. Though indigo snakes rarely bite, they should NOT be handled.

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

LIFE HISTORY: The eastern indigo snake occurs in a wide variety of terrestrial habitat types throughout Florida. Although they have a preference for uplands, they also utilize some wetlands

and agricultural areas. Eastern indigo snakes will often seek shelter inside gopher tortoise burrows and other below- and above-ground refugia, such as other animal burrows, stumps, roots, and debris piles. Females may lay from 4 - 12 white eggs as early as April through June, with young hatching in late July through October.

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

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

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

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

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

- Cease clearing activities and immediately notify supervisor or the applicant's designated agent, **and** the appropriate USFWS office, with the location information and condition of the snake.
- Take photographs of the snake, if possible, for identification and documentation purposes.
- Thoroughly soak the dead snake in water and then freeze the specimen. The appropriate wildlife agency will retrieve the dead snake.

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

North Florida Field Office – (904) 731-3336
Panama City Field Office – (850) 769-0552
South Florida Field Office – (772) 562-3909

PRE-CONSTRUCTION ACTIVITIES

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

2. Prior to the onset of construction activities, the applicant/designated agent will conduct a meeting with all construction staff (annually for multi-year projects) to discuss identification of the snake, its protected status, what to do if a snake is observed within the project area, and applicable penalties that may be imposed if state and/or federal regulations are violated. An educational brochure including color photographs of the snake will be given to each staff member in attendance and additional copies will be provided to the construction superintendent to make available in the onsite construction office (a final brochure for Plan compliance, to be printed double-sided on 8.5" x 11" paper and then properly folded, is attached). Photos of eastern indigo snakes may be accessed on USFWS and/or FWC websites.

3. Construction staff will be informed that in the event that an eastern indigo snake (live or dead) is observed on the project site during construction activities, all such activities are to cease until the established procedures are implemented according to the Plan, which includes notification of the appropriate USFWS Field Office. The contact information for the USFWS is provided on the referenced posters and brochures.

DURING CONSTRUCTION ACTIVITIES

1. During initial site clearing activities, an onsite observer may be utilized to determine whether habitat conditions suggest a reasonable probability of an eastern indigo snake sighting (example: discovery of snake sheds, tracks, lots of refugia and cavities present in the area of clearing activities, and presence of gopher tortoises and burrows).

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

3. Periodically during construction activities, the applicant's designated agent should visit the project area to observe the condition of the posters and Plan materials, and replace them as needed. Construction personnel should be reminded of the instructions (above) as to what is expected if any eastern indigo snakes are seen.

POST CONSTRUCTION ACTIVITIES

Whether or not eastern indigo snakes are observed during construction activities, a monitoring report should be submitted to the appropriate USFWS Field Office within 60 days of project completion. The report can be sent electronically to the appropriate USFWS e-mail address listed on page one of this Plan.

Appendix H

Eastern Indigo Snake Effect

Determination Key

United States Department of the Interior

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

August 1, 2017

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

Subject: Consultation Key for the Eastern Indigo Snake – Revised

Dear Mr. Kinard:

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

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

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

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

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

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

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

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

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

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

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

Scope of the Key

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

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

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

Habitat

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

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

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

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

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

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

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

Minimization Measures

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

Determinations

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

End Key

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

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

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

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

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

Sincerely,

Roxanna Hinzman
Field Supervisor
South Florida Ecological Services

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

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Appendix H

UMAM Data Forms

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	Application Number	Assessment Area Name or Number
Old Lake Wilson Road		**WL 1A,1B**

FLUCCs code	Further classification (optional)	Impact Type	Assessment Area Size
617		**Direct Impact**	**0.20** Acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Reedy Creek	**Class III**	**NA**

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

Wetland 1 is composed of the forested wetland system adjacent to Davenport Creek (SW2), a tannic water surface water flowing west to east. Davenport creek drains a large basin swamp located to the west, and drains to the east into Reedy Creek. The majority of the uplands in the region have been developed into the Reunion planned development, which is a combination of roadways, golf courses and resorts, and living units.

Assessment area description

The assessment area (AA) is directly adjacent to the Old Lake Wilson Road, and includes roadside forested wetlands which are adjacent to Davenport Creek (SW2). Vegetation includes a canopy of bald cypress, red maple, sweetgum, water oak, Carolina willow, and cabbage palm. Understory includes greenbriar, climbing aster, grapevine, and cinnamon fern. Significant roadside trash was observed in the AA.

Significant Nearby Features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
Old Lake Wilson Road, Davenport Creek, adjacent golf course, I-4 approx 0.5 mile to the west	**Not unique, adjacent to existing road crossing**
Functions **provide cover, substrate, or refuge; breeding; nesting; denning; nursery area; wildlife corridor; food chain support; natural water storage**	Mitigation for previous permit/other historic use **Yes. SFWMD ERP 49-01107-P; Wetland 3E.**
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) **Salamander, green anole, skinks, Frogs[Cricket, Green tree, Spring peeper]; Snakes[Mud, Fl. king, Cottonmouth]; Birds[owls (Great Horned/Barred/Screech), Kites, hawks (Short tailed/Red-tailed/Red shouldered), Vulture, songbirds, Cedar waxwing, Yellowbilled cuckoo, swifts, Wood duck, Mottled duck, woodpecker, Turkey]; Mammals(Squirrel, bat, Raccoon, Fl. weasel, Bobcat, Opossum, skunks(spotted/striped), Deer, Wild Boar**	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) **Eastern indigo snake - T (state & fed); Snowy egret, Little blue heron, Tricolored heron, White ibis, Limpkin, Osprey - SSC (state); Wood stork - E (state & fed); Bald eagle - protected (fed); Black bear (state managed), American alligator - protected (state,fed)**

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

NA

Additional relevant factors:

NA

Assessment conducted by:	Assessment date(s):
J.Barhorst and R. Scherer	**01/26/21**

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

Site/Project Name:	Application Number:	Assessment Area Name or Number:
Old Lake Wilson Road	**-**	**WL 1A,1B**
Impact or Mitigation:	Assessment Conducted by:	Assessment Date:
Impact	**J.Barhorst and R. Scherer**	**01/26/21**

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

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.	
b. **Invasive plant species** in proximity to AA**.**	
c. **Wildlife access** to and from AA (proximity and barriers).	
d. **Downstream benefits** provided to fish and wildlife.	
e. Adverse impacts to wildlife in AA from **land uses** outside of AA.	
f. **Hydrologic impediments and flow restrictions.**	
g. **Dependency** of downstream habitats on quantity or quality of discharges.	
h. Protection of wetland functions provided by uplands (**upland** AAs only).	

Current	With Impact
6	0

Additional Notes:

.500(6)(b) Water Environment (n/a for uplands)

a. Appropriateness of **water levels and flows**.	
b. Reliability of **water level indicators**.	
c. Appropriateness of **soil moisture**.	
d. **Soil erosion** or **depositional patterns, flow rates/points of discharge.**	
e. **Fire history** (frequency/severity).	
f. **Appropriate vegetative and/or benthic zonation**.	
g. **Hydrologic stress** on vegetation.	
h. **Use by animal**s with hydrologic requirements.	
i. **Plant community composition** associated with water quality (i.e., plants tolerant of poor WQ).	
j. **Water quality of standing water by observation** (I.e., discoloration, turbidity).	
k. **Water quality data** for the type of community.	
l. Water depth, wave energy, currents, and light penetration.	

Current	With Impact
6	0

Additional Notes:

.500(6)(c) Community Structure

X Vegetation

_____ Benthic

_____ Both

I. Appropriate/desirable species	
II. Invasive/exotic plant species	
III. Regeneration/recruitment	
IV. Age, size distribution.	
V. Snags, dens, cavity, etc.	
VI. Plants' condition.	
VII. Land management practices.	
VIII. Topographic features (refugia, channels, hummocks).	
IX. Submerged vegetation (only score if present).	
X. Upland assessment area	

Current	With Impact
6	0

Additional Notes:

Raw Score = Sum of above scores/30 (if uplands, divide by 20)

Current	With Impact
0.6	0

Impact Acres =	0.20

Functional Loss (FL) [For Impact Assessment Areas]:	
FL = ID x Impact Acres =	0.120

Impact Delta (ID)	
Current - w/Impact	0.6

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 mitigaiton 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	Application Number	Assessment Area Name or Number
Old Lake Wilson Road		**WL 1A,1B sec**

FLUCCs code	Further classification (optional)	Impact Type	Assessment Area Size
617		**Secondary**	**0.10** Acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Reedy Creek	**Class III**	**NA**

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

Wetland 1 is composed of the forested wetland system adjacent to Davenport Creek (SW2), a tannic water surface water flowing west to east. Davenport creek drains a large basin swamp located to the west, and drains to the east into Reedy Creek. The majority of the uplands in the region have been developed into the Reunion planned development, which is a combination of roadways, golf courses and resorts, and living units.

Assessment area description

The assessment area (AA) is directly adjacent to the Old Lake Wilson Road, and includes roadside forested wetlands which are adjacent to Davenport Creek (SW2). Vegetation includes a canopy of bald cypress, red maple, sweetgum, water oak, Carolina willow, and cabbage palm. Understory includes greenbriar, climbing aster, grapevine, and cinnamon fern. Significant roadside trash was observed in the AA.

Significant Nearby Features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
Old Lake Wilson Road, Davenport Creek, adjacent golf course, I-4 approx 0.5 mile to the west	**Not unique, adjacent to existing road crossing**
Functions **provide cover, substrate, or refuge; breeding; nesting; denning; nursery area; wildlife corridor; food chain support; natural water storage**	Mitigation for previous permit/other historic use **Yes. SFWMD ERP 49-01107-P; Wetland 3E.**
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) **Salamander, green anole, skinks, Frogs[Cricket, Green tree, Spring peeper]; Snakes[Mud, Fl. king, Cottonmouth]; Birds[owls (Great Horned/Barred/Screech), Kites, hawks (Short tailed/Red-tailed/Red shouldered), Vulture, songbirds, Cedar waxwing, Yellowbilled cuckoo, swifts, Wood duck, Mottled duck, woodpecker, Turkey]; Mammals(Squirrel, bat, Raccoon, Fl. weasel, Bobcat, Opossum, skunks(spotted/striped), Deer, Wild Boar**	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) **Eastern indigo snake - T (state & fed); Snowy egret, Little blue heron, Tricolored heron, White ibis, Limpkin, Osprey - SSC (state); Wood stork - E (state & fed); Bald eagle - protected (fed); Black bear (state managed), American alligator - protected (state,fed)**

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

NA

Additional relevant factors:

NA

Assessment conducted by:	Assessment date(s):
J.Barhorst and R. Scherer	**01/26/21**

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

Site/Project Name:	Application Number:	Assessment Area Name or Number:
Old Lake Wilson Road	**-**	**WL 1A,1B sec**
Impact or Mitigation:	Assessment Conducted by:	Assessment Date:
Impact	**J.Barhorst and R. Scherer**	**01/26/21**

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

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.	
b. **Invasive plant species** in proximity to AA**.**	
c. **Wildlife access** to and from AA (proximity and barriers).	
d. **Downstream benefits** provided to fish and wildlife.	
e. Adverse impacts to wildlife in AA from **land uses** outside of AA.	
f. **Hydrologic impediments and flow restrictions.**	
g. **Dependency** of downstream habitats on quantity or quality of discharges.	
h. Protection of wetland functions provided by uplands (**upland** AAs only).	

Current	With Impact
6	6

Additional Notes:

.500(6)(b) Water Environment (n/a for uplands)

a. Appropriateness of **water levels and flows**.	
b. Reliability of **water level indicators**.	
c. Appropriateness of **soil moisture**.	
d. **Soil erosion** or **depositional patterns, flow rates/points of discharge.**	
e. **Fire history** (frequency/severity).	
f. **Appropriate vegetative and/or benthic zonation**.	
g. **Hydrologic stress** on vegetation.	
h. **Use by animal**s with hydrologic requirements.	
i. **Plant community composition** associated with water quality (i.e., plants tolerant of poor WQ).	
j. **Water quality of standing water by observation** (I.e., discoloration, turbidity).	
k. **Water quality data** for the type of community.	
l. Water depth, wave energy, currents, and light penetration.	

Current	With Impact
6	6

Additional Notes:

.500(6)(c) Community Structure

X Vegetation
____ Benthic
____ Both

I. Appropriate/desirable species	
II. Invasive/exotic plant species	
III. Regeneration/recruitment	
IV. Age, size distribution.	
V. Snags, dens, cavity, etc.	
VI. Plants' condition.	
VII. Land management practices.	
VIII. Topographic features (refugia, channels, hummocks).	
IX. Submerged vegetation (only score if present).	
X. Upland assessment area	

Current	With Impact
7	5

Additional Notes:

Additional Notes:

Raw Score = Sum of above scores/30 (if uplands, divide by 20)

Current	With Impact
0.6333333	0.566666667

Impact Acres =	0.10

Functional Loss (FL) [For Impact Assessment Areas]:	
FL = ID x Impact Acres =	0.007

Impact Delta (ID)	
Current - w/Impact	0.066666667

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 mitigaiton bank.

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	Application Number	Assessment Area Name or Number
Old Lake Wilson Road		**WL 2A,2B**

FLUCCs code	Further classification (optional)	Impact Type	Assessment Area Size
617		**Direct**	**0.28** Acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Reedy Creek	**Class III**	**NA**

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

Wetland 2 is composed of an unnamed tributary surface water which flows into Davenport Creek, a tannic water surface water flowing west to east, and the adjacent forested wetland system. The Davenport Creek systems drains a large basin swamp located to the west, and drains to the east into Reedy Creek. The majority of the uplands in the region have been developed into the Reunion development, which is a combination of roadways, golf courses and resorts, and living units.

Assessment area description

The assessment area (AA) is directly adjacent to the Old Lake Wilson Road, and includes roadside forested wetlands and an unnamed tributary to Davenport Creek. Vegetation includes a canopy of Carolina willow, red maple, cabbage palm, and water oak with understory of taro, Peruvian primrose willow, elderberry, cogon grass, cinnamon fern, saltush, duckweed, soft rush, and cattail.

Significant Nearby Features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
Old Lake Wilson Road, Davenport Creek, adjacent golf course, I-4 approx 0.1 mile to the west	**NA**
Functions **provide cover, substrate, or refuge; breeding; nesting; denning; nursery area; wildlife corridor; food chain support; natural water storage**	Mitigation for previous permit/other historic use **NA**
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) **Salamander, green anole, skinks, Frogs[Cricket, Green tree, Spring peeper]; Snakes[Mud, Fl. king, Cottonmouth]; Birds[owls (Great Horned/Barred/Screech), Kites, hawks (Short tailed/Red-tailed/Red shouldered), Vulture, songbirds, Cedar waxwing, Yellowbilled cuckoo, swifts, Wood duck, Mottled duck, woodpecker, Turkey]; Mammals(Squirrel, bat, Raccoon, Fl. weasel, Bobcat, Opossum, skunks(spotted/striped), Deer, Wild Boar**	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) **Eastern indigo snake - T (state & fed); Snowy egret, Little blue heron, Tricolored heron, White ibis, Limpkin, Osprey - SSC (state); Wood stork - E (state & fed); Bald eagle - protected (fed); Black bear (state managed), American alligator - protected (state,fed)**

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

NA

Additional relevant factors:

NA

Assessment conducted by:	Assessment date(s):
J.Barhorst and R. Scherer	**01/26/21**

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

Site/Project Name:	Application Number:	Assessment Area Name or Number:
Old Lake Wilson Road	**-**	**WL 2A,2B**
Impact or Mitigation:	Assessment Conducted by:	Assessment Date:
Impact	**J.Barhorst and R. Scherer**	**01/26/21**

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

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.	
b. **Invasive plant species** in proximity to AA**.**	
c. **Wildlife access** to and from AA (proximity and barriers).	
d. **Downstream benefits** provided to fish and wildlife.	
e. Adverse impacts to wildlife in AA from **land uses** outside of AA.	
f. **Hydrologic impediments and flow restrictions.**	
g. **Dependency** of downstream habitats on quantity or quality of discharges.	
h. Protection of wetland functions provided by uplands (**upland** AAs only).	

Current	With Impact
5	0

Additional Notes:

.500(6)(b) Water Environment (n/a for uplands)

a. Appropriateness of **water levels and flows**.	
b. Reliability of **water level indicators**.	
c. Appropriateness of **soil moisture**.	
d. **Soil erosion** or **depositional patterns, flow rates/points of discharge.**	
e. **Fire history** (frequency/severity).	
f. **Appropriate vegetative and/or benthic zonation**.	
g. **Hydrologic stress** on vegetation.	
h. **Use by animal**s with hydrologic requirements.	
i. **Plant community composition** associated with water quality (i.e., plants tolerant of poor WQ).	
j. **Water quality of standing water by observation** (I.e., discoloration, turbidity).	
k. **Water quality data** for the type of community.	
l. Water depth, wave energy, currents, and light penetration.	

Current	With Impact
6	0

Additional Notes:

.500(6)(c) Community Structure

X Vegetation

_____ Benthic

_____ Both

I. Appropriate/desirable species	
II. Invasive/exotic plant species	
III. Regeneration/recruitment	
IV. Age, size distribution.	
V. Snags, dens, cavity, etc.	
VI. Plants' condition.	
VII. Land management practices.	
VIII. Topographic features (refugia, channels, hummocks).	
IX. Submerged vegetation (only score if present).	
X. Upland assessment area	

Current	With Impact
6	0

Additional Notes:

Raw Score = Sum of above scores/30 (if uplands, divide by 20)

Current	With Impact
0.5666667	0

Impact Acres =	0.28

Functional Loss (FL) [For Impact Assessment Areas]:	
FL = ID x Impact Acres =	0.159

Impact Delta (ID)	
Current - w/Impact	0.566666667

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 mitigaiton 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	Application Number	Assessment Area Name or Number
Old Lake Wilson Road		**WL 2A,2B sec**

FLUCCs code	Further classification (optional)	Impact Type	Assessment Area Size
617		**Secondary**	**0.24** Acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
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Significant Nearby Features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
Old Lake Wilson Road, Davenport Creek, adjacent golf course, I-4 approx 0.1 mile to the west	**NA**
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Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

NA

Additional relevant factors:

NA

Assessment conducted by:	Assessment date(s):
J.Barhorst and R. Scherer	**01/26/21**

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

Site/Project Name:	Application Number:	Assessment Area Name or Number:
Old Lake Wilson Road	**-**	**WL 2A,2B sec**
Impact or Mitigation:	Assessment Conducted by:	Assessment Date:
Impact	**J.Barhorst and R. Scherer**	**01/26/21**

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e. Adverse impacts to wildlife in AA from **land uses** outside of AA.	
f. **Hydrologic impediments and flow restrictions.**	
g. **Dependency** of downstream habitats on quantity or quality of discharges.	
h. Protection of wetland functions provided by uplands (**upland** AAs only).	

Current	With Impact
5	5

Additional Notes:

.500(6)(b) Water Environment (n/a for uplands)

a. Appropriateness of **water levels and flows**.	
b. Reliability of **water level indicators**.	
c. Appropriateness of **soil moisture**.	
d. **Soil erosion** or **depositional patterns, flow rates/points of discharge.**	
e. **Fire history** (frequency/severity).	
f. **Appropriate vegetative and/or benthic zonation**.	
g. **Hydrologic stress** on vegetation.	
h. **Use by animal**s with hydrologic requirements.	
i. **Plant community composition** associated with water quality (i.e., plants tolerant of poor WQ).	
j. **Water quality of standing water by observation** (I.e., discoloration, turbidity).	
k. **Water quality data** for the type of community.	
l. Water depth, wave energy, currents, and light penetration.	

Current	With Impact
6	6

Additional Notes:

.500(6)(c) Community Structure

X Vegetation
____ Benthic
____ Both

I. Appropriate/desirable species	
II. Invasive/exotic plant species	
III. Regeneration/recruitment	
IV. Age, size distribution.	
V. Snags, dens, cavity, etc.	
VI. Plants' condition.	
VII. Land management practices.	
VIII. Topographic features (refugia, channels, hummocks).	
IX. Submerged vegetation (only score if present).	
X. Upland assessment area	

Current	With Impact
6	4

Additional Notes:

Additional Notes:

Raw Score = Sum of above scores/30 (if uplands, divide by 20)

Current	With Impact
0.5666667	0.5

Impact Acres =	0.24

Functional Loss (FL) [For Impact Assessment Areas]:	
FL = ID x Impact Acres =	0.016

Impact Delta (ID)	
Current - w/Impact	0.066666667

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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	Application Number	Assessment Area Name or Number
Old Lake Wilson Road		**SW 2A,2B**

FLUCCs code	Further classification (optional)	Impact Type	Assessment Area Size
510		**NA**	**0.04** Acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Reedy Creek	**Class III**	**NA**

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

SW2 is composed of Davenport Creek, a tannic water surface water flowing west to east. Davenport creek drains a large basin swamp located to the west, and drains to the east into Reedy Creek. The majority of the uplands in the region have been developed into the Reunion planned development, which is a combination of roadways, golf courses and resorts, and living units.

Assessment area description

The assessment area (AA) is composed of Davenport Creek, which is adjacent to Old Lake Wilson Road, and flows through a narrow forested wetland (SW 1A and SW 1B) surrounded by development. No vegetation within the water was noted due to the tannic nature of the surface water. A gauge station is located east of the bridge.

Significant Nearby Features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
Old Lake Wilson Road, Davenport Creek, adjacent golf course, I-4 approx 0.5 mile to the west	**Davenport Creek is a named surface water.**
Functions **provide cover, substrate, or refuge; breeding; nesting; denning; nursery area; wildlife corridor; food chain support; natural water storage**	Mitigation for previous permit/other historic use **Yes. SFWMD ERP 49-01107-P; Wetland 3E.**
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) **Salamander, green anole, skinks, Frogs[Cricket, Green tree, Spring peeper]; Snakes[Mud, Fl. king, Cottonmouth]; Birds[owls (Great Horned/Barred/Screech), Kites, hawks (Short tailed/Red-tailed/Red shouldered), Vulture, songbirds, Cedar waxwing, Yellowbilled cuckoo, swifts, Wood duck, Mottled duck, woodpecker, Turkey]; Mammals(Squirrel, bat, Raccoon, Fl. weasel, Bobcat, Opossum, skunks(spotted/striped), Deer, Wild Boar**	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) **Eastern indigo snake - T (state & fed); Snowy egret, Little blue heron, Tricolored heron, White ibis, Limpkin, Osprey - SSC (state); Wood stork - E (state & fed); Bald eagle - protected (fed); Black bear (state managed), American alligator - protected (state,fed)**

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

NA

Additional relevant factors:

NA

Assessment conducted by:	Assessment date(s):
J.Barhorst and R. Scherer	**01/26/21**

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

Site/Project Name:	Application Number:	Assessment Area Name or Number:
Old Lake Wilson Road	**-**	**SW 2A,2B**
Impact or Mitigation:	Assessment Conducted by:	Assessment Date:
Impact	**J.Barhorst and R. Scherer**	**01/26/21**

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

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.		
	b. **Invasive plant species** in proximity to AA**.**		
	c. **Wildlife access** to and from AA (proximity and barriers).		
	d. **Downstream benefits** provided to fish and wildlife.		
	e. Adverse impacts to wildlife in AA from **land uses** outside of AA.		
	f. **Hydrologic impediments and flow restrictions.**		
Current / **With Impact**	g. **Dependency** of downstream habitats on quantity or quality of discharges.		
	h. Protection of wetland functions provided by uplands (**upland** AAs only).		
	Additional Notes:		
6 / **6**			

.500(6)(b) Water Environment (n/a for uplands)	a. Appropriateness of **water levels and flows**.	
	b. Reliability of **water level indicators**.	
	c. Appropriateness of **soil moisture**.	
	d. **Soil erosion** or **depositional patterns, flow rates/points of discharge.**	
	e. **Fire history** (frequency/severity).	
	f. **Appropriate vegetative and/or benthic zonation**.	
	g. **Hydrologic stress** on vegetation.	
	h. **Use by animal**s with hydrologic requirements.	
	i. **Plant community composition** associated with water quality (i.e., plants tolerant of poor WQ).	
	j. **Water quality of standing water by observation** (I.e., discoloration, turbidity).	
Current / **With Impact**	k. **Water quality data** for the type of community.	
	l. Water depth, wave energy, currents, and light penetration.	
	Additional Notes:	
6 / **6**		

.500(6)(c) Community Structure	I. Appropriate/desirable species	
	II. Invasive/exotic plant species	
	III. Regeneration/recruitment	
X Vegetation	IV. Age, size distribution.	
	V. Snags, dens, cavity, etc.	
_____ Benthic	VI. Plants' condition.	
	VII. Land management practices.	
_____ Both	VIII. Topographic features (refugia, channels, hummocks).	
	IX. Submerged vegetation (only score if present).	
	X. Upland assessment area	
Current / **With Impact**	Additional Notes:	
7 / **7**		

Additional Notes:

Raw Score = Sum of above scores/30 (if uplands, divide by 20)	
Current	**With Impact**
0.6333333	0.633333333

Impact Acres =	0.04

Functional Loss (FL) [For Impact Assessment Areas]:	
FL = ID x Impact Acres =	0.000

Impact Delta (ID)	
Current - w/Impact	0

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