Natural Resources Evaluation

US 98/SR 35/SR 700
From CR 54 to
US 301/SR 39
Project Development & Environment (PD&E) Study

Florida Department of Transportation

District 7

Work Program Item Segment No. 443368-2

ETDM Project No. 14374

Pasco County, Florida

October 2021

The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried out by FDOT pursuant to 23 U.S.C. § 327 and a Memorandum of Understanding dated December 14, 2016 and executed by FHWA and FDOT.

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Prepared for:

Florida Department of Transportation
District Seven

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October 2021

EXECUTIVE SUMMARY

The Florida Department of Transportation (FDOT) District 7 is conducting a Project Development and Environment (PD&E) study along US Highway 98 (US 98) / State Road (SR) 35 / SR 700 from CR 54 to US 301 / SR 39, in Pasco County. The study will focus on widening this section of US 98 from a 2-lane undivided facility to a 4-lane divided facility and includes the realignment of US 98 between CR 35A to US 301. The realignment allows US 98 to align with the Clinton Avenue (New SR 52) intersection at US 301 and was the result of a separate Alternatives Corridor Evaluation (ACE) study (WPI Segment No. 443368-1). The study will also evaluate issues related to traffic operations, access management, safety, and include pedestrian and bicycle accommodations.

The PD&E study objectives include: determine proposed typical sections and develop preliminary conceptual design plans for proposed improvements, while minimizing impacts to the environment; consider agency and public comments; and ensure project compliance with all applicable federal and state laws. A Type 2 Categorical Exclusion is being prepared as part of this study. The proposed improvements will include construction of stormwater management facility (SMF) and floodplain compensation (FPC) sites. The PD&E study satisfies all applicable requirements, including the National Environmental Policy Act (NEPA), to qualify for federal-aid funding of subsequent development phases (design, right of way acquisition, and construction).

This Natural Resources Evaluation (NRE) was prepared to document the natural resources analysis performed to support decisions related to the evaluation of the project build alternative and to summarize potential impacts to wetlands, federal and state protected species, and Essential Fish Habitat. Measures considered to avoid, minimize, and mitigate for potential impacts resulting from the proposed project are also discussed. This NRE was conducted in accordance with the FDOT's PD&E Manual and State and Federal natural resources regulations. This report provides documentation of these processes to supplement the Type 2 Categorical Exclusion (CE).

Protected Species

The project study area was evaluated for the presence of federal and state-protected species and their suitable habitat in accordance with 50 Code of Federal Regulations (CFR) Part 402 of the Endangered Species Act of 1973 (ESA), as amended, Chapter 5B-40 Florida Administrative Code (F.A.C.): *Preservation of Native Flora of Florida*, Chapter 68A-27 F.A.C.: *Rules Relating to Endangered or Threatened Species*, and Part 2, Chapter 16 – *Protected Species and Habitat* of the FDOT PD&E Manual.

Literature reviews, agency database searches and field reviews were conducted to assess federal and state-protected species presence, their habitat, and designated critical habitat occurring or potentially occurring within the project study area. Nine (9) federally-protected (8 listed) species and an additional twenty-two (22) state-protected (21 listed) species were evaluated based on species ranges including Pasco County. Two non-listed/managed species, the bald eagle and Florida black bear, are

also discussed based on the potential for occurrence within the study area and their protection under other existing regulations.

The project study area was evaluated for the presence of federal and/or state-protected species and their suitable habitat in accordance with Section 7 of the ESA and Part 2, Chapter 16 of the PD&E Manual. Based on this evaluation the proposed "***may affect, but is not likely to adversely affect***" the Eastern indigo snake, Eastern black rail and wood stork. The project is anticipated to have "***no effect***" on the bluetail mole skink, Audubon's crested caracara, Florida scrub jay, piping plover and red cockaded woodpecker. For state-listed species there is "***no adverse effect anticipated***" for the plume polypody, stiff-leaved wild pine, Florida pine snake, gopher tortoise, Florida burrowing owl, Florida sandhill crane, little blue heron, reddish egret, roseate spoonbill, southeastern American kestrel, tricolored heron, bald eagle and the Florida black bear. There is "***no effect anticipated***" for the celestial lily, craighead's nodding caps, Florida willow, pondspice, pygmy pipes, sand butterfly pea, short-tailed snake, least tern and black skimmer.

Wetlands

Pursuant to Executive Order 11990 entitled "Protection of Wetlands" (May 1977), the US Department of Transportation (USDOT) developed a policy, Preservation of the Nation's Wetlands (USDOT Order 5660.1A), dated August 24, 1978, which requires all federally-funded highway projects to protect wetlands to the fullest extent possible. In accordance with this policy, as well as Part 2, Chapter 9 – *Wetlands and Other Surface Waters* of the FDOT PD&E Manual, the project build alternative was assessed to determine potential wetland impacts associated with its construction.

The boundaries of all wetlands and other surface waters within the study area were approximated using both a desktop and field review. Jurisdictional delineations/formal determinations will be completed during the permitting phase of the project. Based on the evaluation completed, approximately 208.68 acres of wetlands and other surface waters occur within the study area.

Of these 208.68 acres, 20.23 acres will be impacted by the roadway build alternative. This assumes direct impacts to all systems within the project ROW and secondary impacts within 25 feet of the direct impacts. Unavoidable wetland impacts resulting from construction of the project will occur with the preferred alternative. Additional direct and secondary impacts will occur from the construction of Stormwater Management Feature (SMF) 200-1. SMF 200-1 would impact 8.20 acres of surface waters. Approximately 11.25 acres of impacts to man-made other surface waters are anticipated from the construction of the roadway improvements, with an additional 1.95 acres of man-made other surface water impacts resulting from stormwater pond and floodplain compensation facility construction.

Transportation safety standards for additional lanes and widths, side slopes, turn radius, clear zone, sight distance and stormwater treatment requirements necessitate these impacts. The habitat functions of impacted wetlands were quantitatively and qualitatively assessed using the Uniform Mitigation Assessment Method (UMAM) as per Chapter 62-345, F.A.C. The roadway build alternative evaluation resulted in an estimated UMAM functional loss of 7.86 units.

Unavoidable wetland impacts which will result from the construction of this project will be mitigated pursuant to Section 373.4137, Florida Statutes (F.S.), to satisfy all mitigation requirements of Part IV of Chapter 373, F.S., and 33 USC. §1344. The project anticipates using commercially available mitigation credits from agency-approved banks with an appropriate geographic service area to provide compensatory mitigation sufficient to offset unavoidable project impacts to wetlands and wetland-dependent species habitat. The mitigation banks within the Hillsborough River Basin include the Hillsborough River Mitigation Bank, the Hillsborough River Phase II Mitigation Bank, Wiggins Prairie Mitigation Bank, and the North Tampa Mitigation Bank. The mitigation banks within the Withlacoochee River Basin include the Green Swamp Mitigation Bank, the Withlacoochee Mitigation Bank, the Crooked River Mitigation Bank, and the Hilochee Mitigation Bank. The entire roadway project is located within the Boarshead Ranch Mitigation Bank. Wetland mitigation will be offset within the watershed basin where the wetland impact is located. All project wetlands occur within the Withlacoochee HUC8 watershed; however, the project will impact approximately 23.43 acres of wetlands within the Hillsborough River Basin (14.39 acres of direct impacts and 9.04 acres of secondary impacts) and approximately 5.00 acres of wetlands within the Withlacoochee Basin (1.75 acres of direct impacts and 3.25 acres of secondary impacts). Although credit availability among these banks will likely change in the time between this PD&E study's conclusion and the project's future environmental permitting efforts, sufficient mitigation credits are available to offset the impacts from the proposed improvements. The exact impact acreage and number of mitigation credits required to fully offset the lost value of functions resulting from the project's wetland impacts will be determined during the design phase and in coordination with the state and federal environmental permitting agencies. With compensatory mitigation completed within the same watershed where the impacts are incurred, the project will not result in cumulative impacts.

In accordance with Executive Order 11990 and US DOT 5660.1A, and based on the documentation of existing wetland conditions as presented in the NRE, and in consideration of the Preferred Alternative and its effects on wetlands, it is hereby determined that:

- Measures have been taken to minimize harm to wetlands. Wetland impacts are primarily being avoided and minimized by keeping the proposed roadway improvements within the existing 160' right of way through the sensitive Green Swamp Area. In order to do this, design variations for border width, median width, and/or side slopes are being sought. No right of way acquisition for roadway or pond sites is being proposed from the State Trustees of the Internal Improvements Trust Fund (TIITF) lands or the Boarshead Ranch Mitigation Bank.
- Through the implementation of compensatory mitigation, the proposed project will have no significant short-term or long-term adverse impacts to wetlands.
- There is no practicable alternative to construction in wetlands.

Essential Fish Habitat

Essential Fish Habitat (EFH) and Habitat Areas of Particular Concern (HAPC) are designated by the National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Service (NMFS)

and the regional fishery management councils for species managed under the Magnuson-Stevens Fishery Conservation and Management Act as amended (MSA). The MSA established eight Fishery Management Councils (FMC) across the country that are tasked with creating and amending Fishery Management Plans (FMP). However, due to the inland geographic location of the project, there are no tidally-influenced surface waters within the project study area. Therefore, there is no EFH or HAPC within the project study area and consultation for EFH is not necessary.

Conclusions

This NRE will be submitted to the appropriate resource agencies as part of the continued coordination efforts associated with the PD&E study. FDOT will continue to coordinate, as necessary, with the USFWS, US Army Corps of Engineers (USACE), NMFS, Florida Department of Environmental Protection (FDEP), Florida Fish and Wildlife Conservation Commission (FWC), Florida Department of Agriculture and Consumer Services (FDACS), and the Southwest Florida Water Management District (SWFWMD) throughout subsequent phases of this project. Updated information will be provided to these agencies to support the permit approval process for all required state and federal authorizations.

Conceptual wetland impacts have been minimized to the greatest extent practicable. Alternatives which avoided all impacts were not practicable due to the roadway and bridge design needed to meet minimum roadway design and safety requirements. Final determination of jurisdictional wetland boundaries and mitigation requirements will be coordinated between the FDOT and permitting agencies during the design and permitting phases of the project.

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SECTION 1 INTRODUCTION

1.1 PD&E STUDY PURPOSE

The objective of the PD&E study is to assist the FDOT's Office of Environmental Management (OEM) in reaching a decision on the type, location, and conceptual design of the proposed improvements for the widening of US Highway 98 (US 98), including stormwater management facility (SMF) and floodplain compensation (FPC) sites. This study documents the need for the improvements as well as the procedures utilized to develop and evaluate various improvements, including elements such as proposed typical sections, preliminary horizontal alignments, and intersection enhancement alternatives.

This project was screened through the FDOT's Efficient Transportation Decision Making (ETDM) process as ETDM Project No. 14374. The ETDM Programming Screen Summary Report was published on August 16, 2021, containing comments from the Environmental Technical Advisory Team (ETAT) on the project's effects on various natural, physical, and social resources (ETDM 2021a). A Type 2 Categorical Exclusion will be prepared as part of this PD&E study.

The project is located in Sections 11, 12, 13, and 14, Township 25S, and Range 21E; and Sections 18, 19, 20, 27, 28, 29, 34 and 35, Township 25S, and Range 22E; Pasco County, Florida. See **Figure 1-1** for Project Location Map.

1.2 PROJECT PURPOSE AND NEED

Purpose

The purpose of this project is to evaluate the realignment of US 301 at US 98 and Clinton Avenue to enhance safety and provide system linkage/regional connectivity.

Need

A realignment of US 98 to Clinton Avenue intersection is needed to eliminate the existing closely spaced intersections of US 301 at US 98 and US 301 at Clinton Avenue, to reduce crashes, and to enhance safety. Construction of the realignment of SR 52 from east of McKendree Road to east of US 301 began in 2019 and will serve as an additional east/west route in the regional transportation network. When completed, this improvement will increase traffic at the US 301 at US 98 and US 301 at Clinton Avenue intersections, exacerbating the current intersection safety concerns. Also, plans are currently underway for the widening of US 98 from north of West Socrum Loop Road to South of CR 54 (Financial Management No.: 436673-1-22-01). This project will address capacity needs for the final segment of US 98 connecting to US 301 (which is a designated regional freight mobility corridor) as well as operational improvements to the intersection of US 98 and US 301 ultimately resulting in enhanced transportation network connectivity.

System Linkage

US 98 is a regional corridor which provides a connecting link between Polk and Pasco Counties and, within the area, provides a connection to the cities of Lakeland and Bartow to the south.

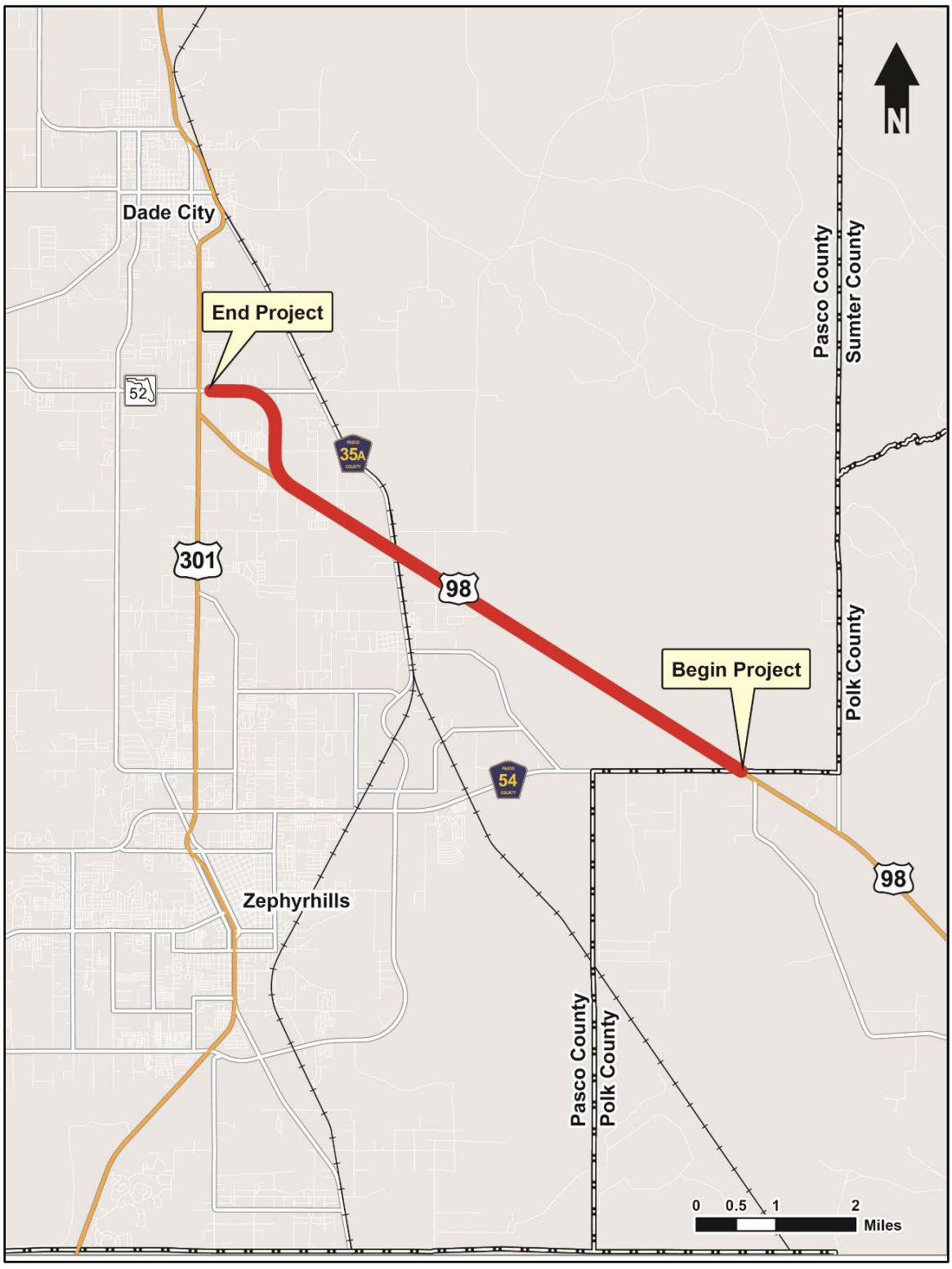
US 98 is the longest road in Florida and spans from Pensacola to Palm Beach primarily traveling along the Gulf Coast. Plans are currently underway for the widening of US 98 from north of West Socrum Loop Road to South of CR 54 (Financial Management No.: 436673-1-22-01). This project will provide additional capacity for the final segment of US 98 connecting to US 301 (which is a designated regional freight mobility corridor) as well as operational improvements to the intersection of US 98 and US 301 ultimately resulting in enhanced transportation network connectivity. Currently, this segment of US 98 experiences truck volumes in excess of 23% of annual average daily traffic (AADT) which illustrates this facility's importance to the overall freight network within the State of Florida.

Also, the SR 52/Clinton Avenue extension from I-75 to West of Fort King Road (Financial Management No.: 435142-1) is currently under construction. This extension will provide direct linkage to I-75 from this project.

Safety

The closely spaced intersections of US 301 at US 98 and US 301 at Clinton Avenue have crash rates that exceed the statewide average. Between 2014 and 2018, the intersection of US 301 at US 98 experienced a total of 63 crashes. The predominant crash types were angle crashes (58%) followed by rear end crashes (29%). This intersection exhibited a crash rate (0.816 crashes per million entering vehicles) that was consistently higher than the statewide average (0.270) for a similar type of intersection resulting in a crash ratio of 3.022 (crash rate divided by statewide average crash rate).

Between 2014 and 2018, the intersection of US 301 and Clinton Avenue experienced a total of 65 crashes. The predominant crash types were rear end crashes (55%) followed by angle crashes (25%). This intersection exhibited a crash rate (1.259) that was consistently higher than the statewide average (0.526) for a similar type of intersection resulting in a crash ratio of 2.394. A realignment of US 98 to Clinton Avenue to eliminate high traffic volumes at one of the two closely spaced intersections has the potential to reduce crashes and enhance safety.


Dade City
End Project
52
35A
301
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Begin Project
54
98
Zephyrhills
Pasco County
Sumter County
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1.3 EXISTING FACILITY AND PROPOSED IMPROVEMENTS

1.3.1 Existing Facility

The existing US 98 from the Polk County Line / CR 54 to US 301 is a 2-lane roadway. The roadway is functionally classified by FDOT as an Urban Principal Arterial – Other. In Pasco County, the 2-lane undivided facility has 12-foot travel lanes and 4-foot paved shoulders. The existing right of way (ROW) along the project corridor is 160 feet wide. There are two (2) existing bridges in the project limits. The first carries US 98 over the Hillsborough River Bridge and the second carries US 98 over Old Lakeland Highway and the CSX railway. There are no sidewalks, multi-use trails, bike lanes or other similar multi-modal facilities within the project corridor.

1.3.2 Proposed Improvements

The proposed improvements will widen US 98 to a 4-lane divided facility from CR 54 to north of Townsend Road and realign US 98 from north of Townsend Road to US 301. The realignment allows US 98 to align with the Clinton Avenue (New SR 52) intersection at US 301 and was the result of a separate Alternatives Corridor Evaluation (ACE) study (WPI Segment No. 443368-1).

The widened 4-lane divided facility roadway will consist of 11 to 12-foot travel lanes with a varying 22 to 40-foot median. Where the roadway is widened, the roadway consists of a rural typical section and will fit within the existing 160-foot-wide ROW. In the realignment section, the roadway consists of a suburban typical section within a proposed 245-foot-wide ROW and include a 6-foot sidewalk on the east side of the road and a 12-foot trail on the west side of the road. Where the new US 98 connects to Clinton Avenue and extends to US 301, the roadway consists of an urban typical section within a 140-foot-wide ROW and include a 6-foot sidewalk on the east side of the road and a 12-foot trail on the west side of the road that will connect to the existing trail on US 301.

1.4 REPORT PURPOSE

The purpose of this Natural Resources Evaluation (NRE) is to document the natural resources analysis performed to support decisions related to the evaluation of the project build alternative and to summarize potential impacts to wetlands, federal and state protected species, and Essential Fish Habitat. Measures considered to avoid, minimize, and mitigate for potential impacts resulting from the proposed project are also discussed. This NRE was conducted in accordance with the PD&E manual and State and Federal natural resources regulations.

SECTION 2 Project Study Area

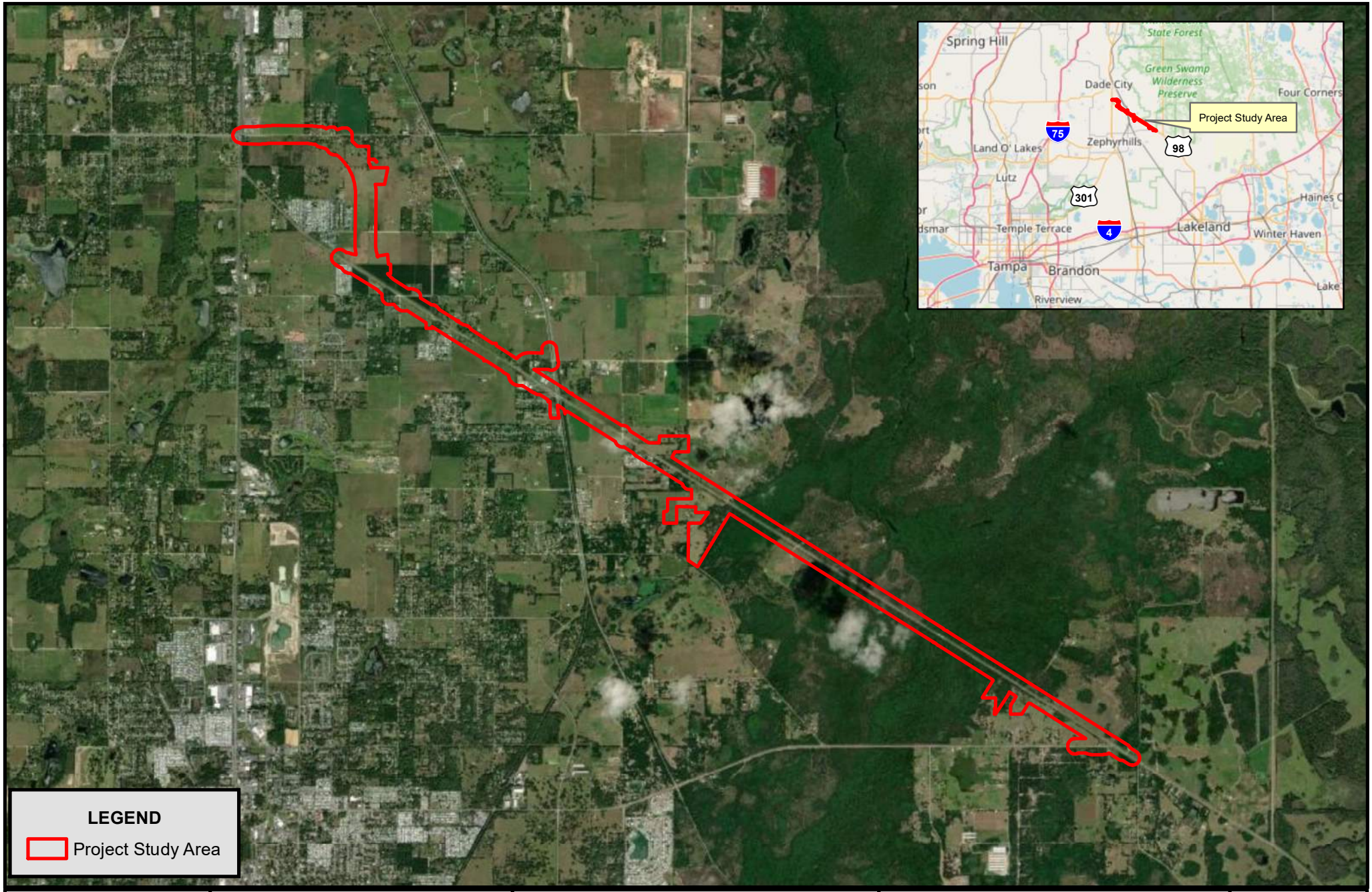
The project study area for evaluating potential natural resources impacts consists of a 300-ft buffer of the project alternatives (**Figure 2-1**). The study area also includes the ROW that would be required for the stormwater management facilities (SMFs) and floodplain compensation sites (FPCs) considered for the project. The project study area totals 1,023.46 acres.

2.1 EXISTING CONDITIONS

The project extends from the Polk County Line at CR 54, extending northwest over the Hillsborough River towards Dade City. A new alignment is proposed over pine plantation and pasture north of Townsend Rd where US 98 will tie into Clinton Ave before continuing west and intersecting US 301. The study area is relatively rural with a majority of the land uses being associated with livestock and agricultural operations. The project study area also includes lands owned by the SWFWMD and lands that are part of the Boarshead Ranch Mitigation Bank. The following sections discuss the land uses/cover types and soils present within the project study area.

2.1.1 Land Use

Cropland and pastureland, stream and lake swamps, and transportation are the three most common types of land use/cover within the project study area. Existing land use and vegetative cover types within the project study area were evaluated and quantified using the Florida Land Use, Cover and Forms Classification System (FLUCFCS) data (SWFWMD 2017, FDOT 1999). The approximate land use boundaries were referenced onto true color aerial imagery using ArcGIS 10.8 software. Project scientists then verified existing land use and cover classifications within the study area during field reviews conducted in June, July and August 2021. Following the field reviews, the classification of land use and cover types were updated to reflect field-verified conditions. The resulting land use and cover types are shown in **Table 2-1** and **Appendix A**. A brief description of each land use and cover type follows.



FDOT

0 1 2

Miles

1 inch = 1 mile

Figure 2-1
Project Study Area

Sources: ESRI 2021

US 98/SR 35/SR 700
from Polk County Line/CR 54
to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

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Table 2-1 Land Use and Cover within Project Study Area

Land Use or Cover Type	FLUCFCS Code[1]	Acres	Hectares	Percent of Study Area
Uplands/Developed Lands				
Residential Low Density	1100	121.72	49.26	11.89
Residential Medium Density	1200	7.50	3.04	0.73
Residential High Density	1300	8.78	3.55	0.86
Commercial and Services	1400	16.76	6.78	1.64
Industrial	1500	6.96	2.82	0.68
Open Land	1900	47.79	19.34	4.67
Cropland and Pastureland	2100	323.99	131.11	31.67
Nurseries and Vineyards	2400	4.04	1.63	0.39
Shrub and Brushland	3200	16.73	6.77	1.63
Upland Coniferous Forests	4100	4.22	1.71	0.41
Upland Hardwood – Coniferous Mixed	4340	47.93	19.40	4.68
Tree Plantation	4400	46.47	18.81	4.54
Transportation	8100	160.43	64.92	15.68
Communication	8200	1.46	0.59	0.15
Uplands Sub-Total		*814.78*	*329.73*	*79.62*
Wetlands and Other Surface Waters				
Other Surface Waters				
Streams and Waterways	5100	14.25	5.77	1.39
Reservoirs	5300	4.70	1.90	0.46
Wetlands				
Stream and Lake Swamps (Bottomland)	6150	158.25	64.04	15.46
Mixed Wetland Hardwoods	6170	4.05	1.64	0.40
Cypress	6210	9.79	3.96	0.96
Hydric Pine Flatwoods	6250	0.60	0.24	0.06
Wetland Forested Mixed	6300	7.63	3.09	0.74
Freshwater Marshes	6410	4.97	2.01	0.48
Wet Prairies	6430	4.44	1.79	0.43
Wetlands and Other Surface Waters Sub-Total		*208.68*	*84.44*	*20.38*
Total		1,023.46	414.17	100

1. (FDOT 1999, SWFWMD 2017)

URBAN AND BUILT-UP (FLUCFCS 100 SERIES)

Urban and Built-up land consists "of areas of intensive use with much of the land occupied by man-made structures", including residential, commercial, recreational, industrial, and institutional developments (FDOT 1999). Urban and Built-up land uses within the study area account for 209.51 acres (approximately 20% of the study area) and generally do not provide suitable habitat for protected species.

AGRICULTURE (FLUCFCS 200 SERIES)

Agricultural lands are those which provide crops or livestock. Cropland and Pastureland (FLUCFCS 210) and Nurseries and Vineyards (FLUCFCS 240) are the agricultural land uses that occur within the project study area.

Cropland and Pastureland is the most common land use within the project study area accounting for 31.67% of the study area covering 323.99 acres. This land use occurs throughout the entirety of the study area. Within the study area, these lands are typically treeless and contain upland grass species such as bahia grass (*Paspalum notatum*), bermuda grass (*Cynodon dactylon*), vaseygrass (*Paspalum urvellei*), smutgrass (*Sprorobolus indicus*), Johnson grass (*Sorghum halepense*), St. Augustine grass (*Stenotaphrum secundatum*) and various upland sedges (*Carex* sp.) as they are primarily used for grazing cattle, goats, horses, and other livestock species. These lands occasionally include individuals of live oak (*Quercus virginiana*), slash pine (*Pinus elliottii*), and cabbage palm (*Sabal palmetto*).

Nurseries and Vineyards only occur in one location within the study area, at Clark's Nursery southeast of the intersection of US 98 and CR 54. This area only totals 4.04 acres (0.39% of the study area). It contains dirt driveways and parking areas and landscape plants in containers placed on top areas of bahia grass.

RANGELAND (FLUCFCS 300 SERIES)

Rangeland is land where the natural vegetation is predominantly grasses, grass-like plants, forbs, or shrubs and is capable of being grazed. Shrub and Brushland (FLUCFCS 320) is the only type of Rangeland that occurs within the project study area. Within the study area, Shrub and Brushland occurs only between Wilds Rd and US 98, where it is the dominant cover type. This area totals 16.73 acres (1.63% of the study area). This habitat is unmaintained and dominated by tall shrub species such as beggarticks (*Bidens alba*), saw palmetto (*Serenoa repens*), wax myrtle (*Morella cerifera*), ceasarweed (*Urena lobata*), blackberry (*Rubus* sp.), lantana (*Lantana camara*), dogfennel (*Eupatorium capillifolium*), and balsam pear (*Momordica charantia*).

UPLAND FORESTS (FLUCFCS 400 SERIES)

Upland Forests are areas which support a tree canopy closure of at least ten percent. Upland Forests within the study area consist of Upland Coniferous Forests (FLUCFCS 410), Upland Hardwood – Coniferous Mix (FLUCFCS 434) and Tree Plantations (FLUCFCS 440).

Upland Coniferous Forests occur in two locations within the study area totaling 4.22 acres (0.41% of the study area). These areas occur northeast of the proposed locations for SMF 200 and southeast of the Clinton Ave and US 301 intersection. These areas are dominated by a canopy of slash pine, although other canopy species such as live oak and laurel oak (*Quercus laurifolia*). Midstories are densely vegetated due to a lack of maintenance and contain species such as Brazilian pepper (*Schinus terebinthifolia*), wax myrtle, saw palmetto, and cabbage palm.

Upland Hardwood – Coniferous Mix occurs in fourteen locations throughout the study area totaling 47.93 acres (4.68% of the study area). This cover type is typically found in uncleared/unmaintained areas adjacent to pasture, planted pine, and residential areas. The largest contiguous area of this cover type is located where SMF 300-1 and FPC 300-South-01 are proposed. The canopy of these areas is typically dominated by slash pine and live oak, typically resembling an oak hammock with few

midstory species. Understory species typically include black berry, caesarweed, lantana, beautyberry (*Callicarpa americana*), dogfennel, and beggarticks.

Tree Plantations occur in seven locations throughout the study area totaling 46.47 acres (4.54% of the study area). The majority of this landcover is located on either side of US 98 from Jim Jordan Rd to Tumbleweed Dr. Another significant tree plantation occurs east of Citrus Hill RV Resort. Tree Plantations within the study area consist of areas dominated by rows of planted slash pine. The mid and under stories of these areas are typically unvegetated.

WATER (FLUCFCS 500 SERIES)

Water land uses are defined as "all areas within the land mass of the United States that are predominantly or persistently water covered" (FDOT 1999). Water land cover within the study area consists of Streams and Waterways (FLUCFCS 510) and Reservoirs (FLUCFCS 530).

Streams and Waterways within the study area consist of roadside drainage ditches and drainage ditches on private properties with livestock operations. These systems are either inundated or saturated and typically contain hydrophytic vegetation such as Peruvian primrose willow (*Ludwigia peruviana*), Carolina willow (*Salix caroliniana*), and barnyard grass (*Echinochloa crus-galli*). Streams and Waterways within the study area total 14.25 acres (1.39 % of the study area). These systems as previously described are related to the low-lying areas of the study area associated with the Hillsborough River and do not occur within the study area further west than the proposed location of SMF 300-1. Roadside ditches west of here are dry even during the growing season and do not contain hydrophytic vegetation, due to the increased elevation and distance from the river. Dry ditches were not identified as other surface waters and are therefore not included in the Streams and Waterways cover type.

Four systems identified as Reservoirs occur within the study area totaling 4.70 acres (0.46% of the study area). These are excavated systems three of which occur within the proposed locations of SMF 200-2, SMF 300-1, FPC 300-South-01, FPC 300-North-01, and FPC 300-North-02. The fourth and smallest of these systems is located within the existing US 98 and CR 35A interchange. The three larger systems are typically unvegetated open-water systems although surficial species such as duckweed (*Landoltia punctata*), water spangles (*Salvinia minima*) and waterlily (*Nymphaea odorata*). The banks of these systems also contain species such as soft rush (*Juncus effusus*), red maple (*Acer rubrum*), and sweetgum (*Liquidambar styraciflua*).

WETLANDS (FLUCFCS 600 SERIES)

Wetlands within the study area are comprised of Stream and Lake Swamps (FLUCFCS 615), Mixed Wetland Hardwoods (FLUCFCS 617), Cypress (FLUCFCS 621), Hydric Pine Flatwoods (FLUCFCS 625), Wetland Forested Mixed systems (FLUCFCS 630), Freshwater Marshes (FLCUFCS 641), and Wet Prairies (FLUCFCS 643). All wetland systems within the study area are low-lying areas associated with the Hillsborough River and do not occur within the study area further west than the proposed location of SMF 300-1. It is worth noting that Stream and Lake Swamps are the third most abundant land

use/cover type within the study area accounting for 158.25 acres (15.41% of the study area). Wetlands within the study area are discussed in greater detail in Section 4 of this document.

TRANSPORTATION, COMMUNICATIONS AND UTILITIES (FLUCFCS 800 SERIES)

Within the study area, Transportation, Communications, and Utilities land uses consist of Roads and Highways (FLUCFCS 810) and Communication (FLUCFCS 820).

Roads and Highways is the third most abundant land use/cover type accounting for 160.43 acres (15.68% of the study area). The Roads and Highways land use includes for the entire existing ROW of US 98, CR 54, Janmar Rd, CR 35A, Francis Rd, Beckum Rd, Jim Jordan Rd, Connerly Rd, Townsend Rd, Wilds Rd, Clinton Ave, and US 301 within the study area. It must be noted that this land use does not include areas where wetlands or other surface waters occur within roadway ROW.

Communications occurs in one location within the study area at a cell tower located at the CR 54 and US 98 intersection.

2.1.2 Soils

The US Department of Agriculture, Natural Resources Conservation Service (NRCS) Soil Survey Geographic (SSURGO) Database for Florida (2021) was reviewed to identify local soil types within the study area, especially hydric soils for the purposes of assessing wetland boundaries. **Table 2-2** lists and details the total area of the soils map units present within the study area. Maps depicting the soil series within the study area are provided in **Appendix B**.

Table 2-2 Project Soils Series

Soil Series Name	Hydric Rating	Total Acres	Total Hectares	Percent of Study Area
Basinger Fine Sand, Depressional, 0 to 1 Percent Slopes	Hydric	1.44	0.58	0.14
Chobee Soils, Frequently Flooded	Hydric	83.98	33.98	8.21
Eaton Mucky Fine Sand, Depressional	Hydric	3.71	1.5	0.36
Sellers Mucky Loamy Fine Sand	Hydric	5.53	2.24	0.54
Zephyr Muck	Hydric	58.18	23.54	5.68
Adamsville Fine Sand, 0 to 2 Percent Slopes	Non-Hydric	2.48	1	0.24
Arredondo Fine Sand, 0 to 5 Percent Slopes	Non-Hydric	104.09	42.12	10.17
Candler Fine Sand, 0 to 5 Percent Slopes	Non-Hydric	103.57	41.91	10.12
Eaugallie Fine Sand	Non-Hydric	17.52	7.09	1.71
Kendrick Fine Sand, 0 to 5 Percent Slopes	Non-Hydric	8.08	3.27	0.79
Lake Fine Sand, 0 to 5 Percent Slopes	Non-Hydric	349.97	141.64	34.19
Myakka Fine Sands, 0 to 2 Percent Slopes	Non-Hydric	11.81	4.78	1.15
Orlando Fine Sand, 0 to 5 Percent Slopes	Non-Hydric	15.82	6.4	1.55
Pomona Fine Sand	Non-Hydric	147.56	59.71	14.42
Smyrna and Myakka Fine Sands	Non-Hydric	4.37	1.77	0.43
Sparr Fine Sand, 0 to 5 Percent Slopes	Non-Hydric	23.01	9.31	2.25
Tavares Sand, 0 to 5 Percent Slopes	Non-Hydric	79.1	32.01	7.73
Wabasso Fine Sand	Non-Hydric	1.65	0.67	0.16
Pits	Unranked	1.18	0.48	0.12
Water	Unranked	0.41	0.17	0.04
Hydric Soils Sub-Total		*152.84*	*61.84*	*14.93*
Non-Hydric Soils Sub-Total		*869.03*	*351.68*	*84.91*
Unranked Soils Sub-Total		*1.59*	*0.65*	*0.16*
Total		1,023.46	414.17	100

SECTION 3 PROTECTED SPECIES AND HABITAT

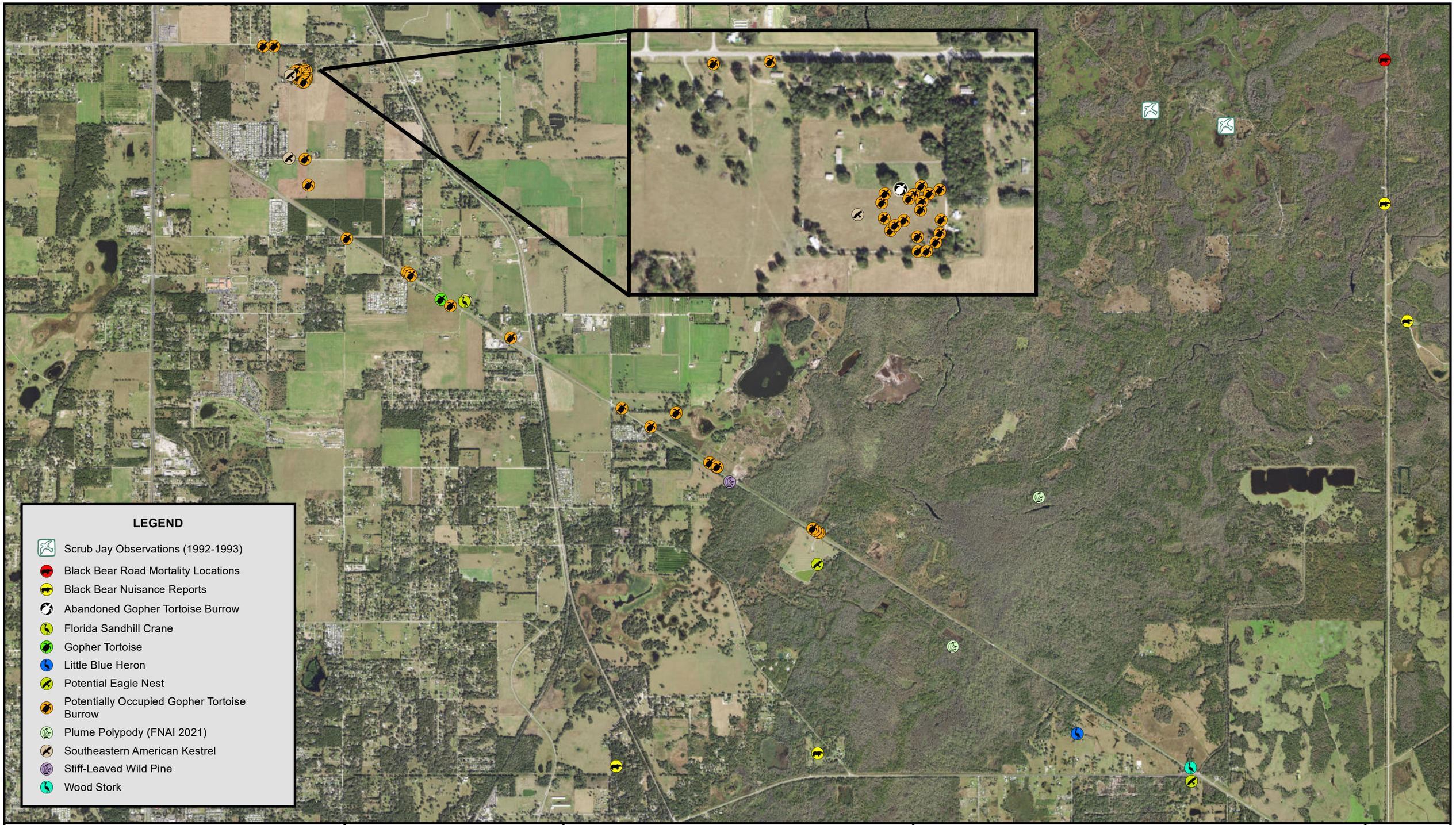
Federally-listed species are afforded protections under the Endangered Species Act of 1973 (ESA), as amended, falling under the jurisdiction of the US Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS). Within the state of Florida, federally-listed species are also afforded protection under Chapter 68A-27, F.A.C., along with state-listed species. In Florida, state- protected animal species are under the jurisdiction of the Florida Fish and Wildlife Conservation Commission (FWC) while state-protected plant species are under the jurisdiction of the Florida Department of Agriculture and Consumer Services (FDACS) under Rule 5B-40 F.A.C. Additionally, in 2010, the FWC established an imperiled species rule which states that all species listed by the USFWS and the NMFS that occur within Florida are also included on the Florida Endangered and Threatened Species List as Federally-designated Endangered, Federally-designated Threatened, Federally-designated Due to Similarity of Appearance, or Federally-designated Non-Essential Experimental population species. The analysis of protected species occurring within the project area is consistent with *Part 2, Chapter 16, Protected Species and Habitat* of the FDOT's PD&E Manual.

3.1 METHODOLOGY

Literature reviews, agency database searches, and field reviews were conducted to document the potential presence of federal and state-protected species, their habitat and critical habitat within the study area. Information sources and databases included the following and others as provided in References Section 8 of this report:

- Environmental Systems Research Institute (ESRI) World Imagery (ESRI 2021)
- Google Earth (2021)
- FDOT ETDM Environmental Screening Tool (EST) (ETDM 2021b)
- NRCS SSURGO Database (NRCS 2018, 2021)
- Florida Geographic Data Library (FGDL 2021)
- USFWS Species Lists and Datasets (2020a-c, 2021a-b)
- FWC Species Lists and Datasets (2018a, 2021a-e)
- FDACS Species Lists (2021)
- Florida Natural Areas Inventory (FNAI) (2021) (**Appendix C**)

Based on the results of database searches and review of aerial photographs, field survey methods for specific habitat types and lists of target species were developed. Documented occurrences of all protected species are identified in **Figure 3-1.**



FDOT

0 3,000 6,000

Feet

1 inch = 3,000 feet

Figure 3-1
Protected Species Occurrences

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, FNAI 2021, FWC 2010, 2021d, 2021e, RK&K 2021

N

Field reconnaissance of the study area was conducted June 17, July 15, and August 4, 2021. These efforts were conducted by qualified field biologists and included pedestrian surveys of habitats within the study area. During these field reviews, areas of habitat were visually inspected for vegetative type and cover, level of disturbance, management techniques, and overall potential suitability to support protected species and general wildlife.

A list of potentially occurring protected species was developed and each species was assigned a none, low, moderate, or high potential for occurrence within habitats found within the study area. Definitions for potential occurrence are provided below. **Table 3-1** lists the federal and state protected wildlife and plant species as well as each species' potential for occurrence within the study area. Summary effect determinations area also provided for each species within this table.

None – Species whose agency consultation area or range may include the project study area but have no potential for occurrence in the study area due to lack of suitable habitat.

Low – Species with a low potential for occurrence within the project ROW are defined as those species that are known to occur in Pasco County or the bio-region, but suitable habitat is limited within the study area, or the species is range-limited, rare, or no longer extant.

Moderate – Species with a moderate potential for occurrence are those species known to occur in Pasco County or nearby counties, and for which suitable habitat is present within the study area, but no observations or positive indications exist to verify the species' presence.

High – Species with a high potential for occurrence are suspected within the study area based on known ranges and existence of sufficient suitable habitat; are known to occur adjacent to the study area; or have been previously observed or documented in the immediate project vicinity.

Table 3-1 Potential for Occurrence and Proposed Effect Determinations for Federal and State Protected Species for the Project Study Area

Species	Listing Status*	Potential for Occurrence	Proposed Effect Determinations
Plants			
Celestial Lily (*Nemastylis floridana*)	FDACS - Endangered	**Moderate**	***No effect anticipated***
Craighead's Nodding Caps (*Triphora rickettii*)	FDACS - Endangered	**Moderate**	***No effect anticipated***
Florida Willow (*Salix floridana*)	FDACS - Endangered	**Moderate**	***No effect anticipated***
Plume Polypody (*Pecluma plumula*)	FDACS - Endangered	**High**	***No adverse effect anticipated***
Pondspice (*Litsea aestivalis*)	FDACS - Endangered	**Moderate**	***No effect anticipated***
Pygmy Pipes (*Monotropsis reynoldsiae*)	FDACS - Endangered	**Moderate**	***No effect anticipated***
Sand Butterfly Pea (*Centrosema arenicola*)	FDACS - Endangered	**None**	***No effect anticipated***

Stiff-leaved Wild Pine (*Tillandsia fasciculata*)	FDACS - Endangered	**High (observed)**	***No adverse effect anticipated***
Reptiles			
Bluetail Mole Skink (*Eumeces egregius lividus*)	USFWS – Threatened	**None**	***No effect***
Eastern Indigo Snake (*Drymarchon corais couperi*)	USFWS – Threatened	**Moderate**	***May affect, not likely to adversely affect***
Florida Pine Snake (*Pituophis melanoleucus mugitis*)	FWC – Threatened	**Moderate**	***No adverse effect anticipated***
Gopher Tortoise (*Gopherus polyphemus*)	USFWS – Candidate Species FWC – Threatened	**High (observed)**	***No adverse effect anticipated***
Short-tailed Snake (*Lampropeltis extenuata*)	FWC - Threatened	**None**	***No effect anticipated***
Birds			
Audubon's Crested Caracara (*Polyborus plancus audubonii = Caracara cheriway*)	USFWS – Threatened	**None**	***No effect***
Eastern Black Rail (*Lateralus jamaicensis jamaicensis*)	USFWS – Threatened	**Moderate**	***May affect, not likely to adversely affect***
Florida Scrub-Jay (*Aphelocoma coerulescens*)	USFWS – Threatened	**None**	***No effect***
Piping Plover (*Charadrius melodus*)	USFWS – Threatened	**None**	***No effect***
Red Cockaded Woodpecker (*Picoides borealis*)	USFWS – Endangered	**None**	***No effect***
Wood Stork (*Mycteria americana*)	USFWS – Threatened	**High (observed)**	***May affect, not likely to adversely affect***
Black Skimmer (*Rhynchops nigers*)	FWC – Threatened	**None**	***No effect anticipated***
Florida Burrowing Owl (*Athene cunicularia floridana*)	FWC – Threatened	**Moderate**	***No adverse effect anticipated***
Florida Sandhill Crane (*Antigone canadensis pratensis*)	FWC – Threatened	**High (observed)**	***No adverse effect anticipated***
Least Tern (*Sternula antillarum*)	FWC – Threatened	**None**	***No effect anticipated***
Little Blue Heron (*Egretta caerulea*)	FWC – Threatened	**High (observed)**	***No adverse effect anticipated***
Reddish Egret (*Egretta rufescens*)	FWC – Threatened	**High**	***No adverse effect anticipated***
Roseate Spoonbill (*Platalea ajaja*)	FWC – Threatened	**High**	***No adverse effect anticipated***
Southeastern American Kestrel (*Falco sparverius paulus*)	FWC – Threatened	**High (observed)**	***No adverse effect anticipated***

Tricolored Heron (*Egretta tricolor*)	FWC – Threatened	**High**	***No adverse effect anticipated***
Bald Eagle (*Haliaeetus leucocephalus*)[1]	Not Listed	**High**	***No adverse effect anticipated***
Mammals			
Florida Black Bear (*Ursus americana floridana*)[3]	Not Listed	**Moderate**	***No adverse effect anticipated***

*FWC listing status was not included for species with the same federal listing status as due to the State's deferment to federal status under Chapter 68A-27, F.A.C.
(1) Protected under the federal Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act
(2) Protected under the Florida Black Bear Conservation Rule, 68A-4.009, Florida Administrative Code (F.A.C.)

3.2 FEDERAL LISTED SPECIES AND DESIGNATED CRITICAL HABITAT

3.2.1 Flora

No federally-listed plant species are known to occur within Pasco County. Therefore, no federally-listed plant species are anticipated to occur within the project study area.

3.2.2 Fauna

Eight (8) federally-listed vertebrate species were considered due to previous documentation of occurrence within, or with range proximity to Pasco County and are discussed as follows.

Bluetail Mole Skink (*Eumeces egrigius lividus*)

The bluetail mole skink is listed as threatened by the USFWS and the FWC. The consultation area for this species includes all of Polk County and a portion of it occurs at the south end of the project study area. However, this species is typically limited to the sandy ridges of central Florida, the nearest of which is the Lake Wales Ridge which is approximately 25 miles east of the project. This species also requires loose sandy soils typically within or adjacent to scrub or scrub-like habitat. No such habitat or soils occur within the project study area. Additionally, this species was not documented within the project vicinity (FNAI 2021), and it was not observed during project field reviews. Therefore, the FDOT has determined that the potential for species occurrence within the project study area is considered to be **none** and the project will have "***no effect***" on the species.

Eastern Indigo Snake (*Drymarchon corais couperi*)

The eastern indigo snake is listed as a threatened species by the USFWS and the FWC. The species is distributed throughout the southeastern United States but is subject to loss and degradation of habitat and human intervention. The species is found in a variety of habitats including swamps (including mangroves), wet prairies, xeric pinelands, and scrub areas. It may utilize gopher tortoise burrows for shelter during the winter and to escape the heat during the summer. No individuals of this species were observed during the field surveys; however, natural areas throughout the project study area may provide suitable habitat for this species. Although not observed during field reviews

this species was documented within the FNAI *Standard Data Report* (2021) approximately 1.4 miles southeast of the project near the CR 471 intersection in Polk County. However, this observation was documented in 1983. During the project field reviews, 42 potentially occupied gopher tortoise burrows were documented within the project study area. Nineteen (19) of these potentially occupied burrows occur within proposed stormwater pond site SMF 900-1 (south of the Clinton Avenue/Elkins Road intersection), the location of which may be subject to change between the PD&E and Design/Construction phase. Therefore, the potential for occurrence for this species within the project study area is considered to be **moderate** due to the presence of potentially suitable habitat, a historic documented observation in the project vicinity, and the lack of observations during the project field reviews. The FDOT will use the USFWS' *Standard Protection Measures for the Eastern Indigo Snake* (2013a) during construction. Additional gopher tortoise surveys will be performed to document the exact number of burrows which will be impacted by the project prior to construction. The FDOT will obtain a Gopher Tortoise Relocation Permit from the FWC prior to performing any gopher tortoise relocations or burrow excavations. The FDOT also commits to implementing the USFWS' *Standard Protection Measures for the Eastern Indigo Snake* (2013a) (see **Appendix D**) during construction. Therefore, the FDOT has determined the project "***may affect, but is not likely to adversely affect***" the eastern indigo snake.

Audubon's Crested Caracara (*Polyborus plancus audubonii = Caracara cheriway*)

The Audubon's crested caracara which is listed as threatened by the USFWS and FWC. The crested caracara inhabits large prairies and pastures in south-central Florida. It prefers nesting in cabbage palms but has also been reported to nest in other tree species. The project study area is on the periphery of the USFWS' caracara consultation area and only the southernmost 2.45 miles of the project lie within the consultation area. Of this portion, only a small portion just north of CR 54 (approximately 0.93-mile) provides minimal suitable habitat (cattle pasture with scattered slash pine and live oak trees). However, there are very few cabbage palms present, which are typically preferred for nesting. No crested caracaras or nests were observed during extensive project field reviews over multiple days and none have been documented in the vicinity of the project study area (FNAI 2021). The nearest documented occurrences for the species are approximately 40 miles southeast of the project in Polk County (i.e., east of Winter Haven/Lake Wales) (USFWS 2016). Due to the geographic location of the project within the caracara consultation area, the lack of observations during project field reviews, and the distance of the project from documented observations and nests, the potential for occurrence of the caracara within the project study area is considered **none** and the project is anticipated to have "***no effect***" on the caracara.

Eastern Black Rail (*Lateralus jamaicensis jamaicensis*)

The eastern black rail is listed as threatened by the USFWS. This species nests on or near the ground typically in freshwater marshes and saltwater marshes with limited tidal activity. Marsh habitat does occur within the project study area. The project will likely impact suitable marsh habitat; however, this, along with the impact acreage is variable based on the selected SMF and FPC alternatives. Further discussion of wetland impacts is provided in Section 4.4 of this document. This species was

not observed during field reviews or documented within the FNAI *Standard Data Report* (2021), so the potential for species occurrence within the project study area is considered to be **moderate**. If any active avian nests are encountered during construction, construction will be halted and the FDOT will coordinate further actions with the USFWS. Additionally, the FDOT will procure sufficient mitigation credits as compensatory mitigation to offset impacts to all wetlands, including freshwater marshes which may provide suitable habitat for the black rail. Therefore, the project "***may affect, but is not likely to adversely affect"*** the eastern black rail.

Florida Scrub-Jay (*Aphelocoma coerulescens*)

The Florida scrub-jay is listed as threatened by the USFWS and the FWC. This species prefers xeric oak habitats with well-drained sandy soils that are adapted to periodic drought and frequent fires. Three classes of scrub-jay habitat are defined by the USFWS *Species Conservation Guidelines* (USFWS 2004b):

Type I – any upland plant community in which percent cover of the substrate by scrub oak (Quercus sp.) species is 15 percent or more.

Type II – any plant community, not meeting the definition of Type I habitat, in which one or more scrub oak species is represented.

Type III – any upland or seasonally dry wetland within 400 meters (0.25 miles) of any area designated as Type I or Type II habitat.

Based on the project field reviews, there are no areas of suitable Florida scrub-jay habitat within the project study area as defined above, due to a lack of scrub oak species. Additionally, there are no documented occurrences of this species within the project vicinity (FNAI 2021). As shown previously in **Figure 3-1**, the FWC has documented historic scrub jay observations approximately 4.3 miles north of the US 98/CR 54 intersection (FWC 2010). These observations are from the 1992-1993 survey season. Considering the lack of suitable habitat and the lack of recently documented occurrences in the project vicinity, the FDOT has determined that the potential for species occurrence within the project study area is considered to be **none** and the project will have "***no effect***" on the species.

Piping Plover (*Charadrius melodus*)

The piping plover is listed as threatened by the USFWS and the FWC. Within their ETDM comments, the FWC identified this species as having a potential to occur within the project area. This species typically inhabits sandy beaches, sand flats, and mudflats along coastal areas. Coastal habitats such as these are located approximately 32 miles west of the project within Pasco County. Additionally, this species was not documented within the project vicinity (FNAI 2021), and it was not observed during project field reviews. Therefore, the FDOT has determined that the potential for species occurrence within the project study area is considered to be **none** and the project will have "***no effect***" on the species.

Red Cockaded Woodpecker (*Picoides borealis*)

The red cockaded woodpecker is listed as endangered by the USFWS and the FWC. A small part of this species' consultation area occurs within northern Pasco County; however, this portion of the consultation area is approximately 7.5 miles from the project. This species typically prefers to utilize mature trees in longleaf pine (*Pinus palustris*) forests. No such habitat with large, mature pine trees occurs within the project study area. Additionally, this species was not documented within the project vicinity (FNAI 2021), and it was not observed during project field reviews. Therefore, the FDOT has determined that the potential for species occurrence within the project study area is considered to be **none** and the project will have "***no effect***" on the species.

Wood Stork (*Mycteria americana*)

The wood stork is listed as threatened by the USFWS and the FWC. This species is primarily associated with freshwater and estuarine habitats for nesting, roosting, and foraging. Typical foraging sites include freshwater marshes, stock ponds, shallow, seasonally flooded roadside and agricultural ditches, managed impoundments, and depressions in cypress (*Taxodium* spp.) heads and swamp sloughs. Ideal 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 15 inches. The proposed project occurs within the core foraging area radius of seven known active wood stork colonies (Croom, Cross Creek, Cypress Creek I-75, Heron point – Land O' Lakes, Little Gator Creek, Lone Palm, and Saddlebrook Resort) (USFWS 2020b). The nearest documented colony is the Little Gator Creek colony which is located approximately 2.65 miles north of the southern end of the project. This species was observed during project field reviews (see **Figure 3-1**) and the potential for occurrence within the project study area is considered to be **high**.

The proposed roadway improvements will directly impact 9.29 acres of wetlands and 11.25 acres of other surface waters which may be used as foraging habitat by the wood stork. Additionally, SMF 200-1, SMF 300-1, and FPC 300-South-01 will directly impact a total of 6.85 acres of wetlands and 1.95 acres of surface waters which may provide foraging habitat for the wood stork. During the design and permitting phase, the FDOT will perform a wood stork foraging habitat assessment for jurisdictionally delineated wetlands and obtain the required amount of wetland mitigation for compensation to impacts to suitable foraging habitat (SFH). Based on these commitments and applying the project specifics to the Effect Determination to the USFWS' *Effect Determination Key for Wood Stork in Central and North Peninsular Florida* (USFWS 2008), it is anticipated that this project "***may affect, but is not likely to adversely affect***" the wood stork (A->B->C->D->E = MANLAA, see **Appendix E**).

3.2.3 Critical Habitat

Critical Habitat, designated by Congress in 50 CFR 17, was evaluated in the study area per review of USFWS's available GIS data. Currently, no designated critical habitat for any federal listed species occurs within or immediately adjacent to the project study area. Therefore, the proposed

improvements will not result in the destruction or adverse modification of any designated critical habitat.

3.3 STATE LISTED SPECIES

3.3.1 Flora

Eight (8) state-listed plant species were assessed due to previous documentation of occurrence within Pasco County. Although formal methodology-based plant surveys were not performed, one state-listed plant species, the stiff-leaved wild pine, was observed during project field reviews.

Celestial Lily (*Nemastylis floridana*)

The celestial lily is listed as endangered by the FDACS. This species is typically found in wet flatwoods, prairies, marshes, and the edges of cabbage palm hammocks. Although this species was not observed during project field reviews and was not documented within the FNAI *Standard Data Report* (2021), potentially suitable habitat occurs within and adjacent to the study area. Therefore, the potential for occurrence of this species is considered **moderate**. If this species is observed during future project surveys or wetland delineations, the FDOT will coordinate with the FDACS and Florida Native Plant Society (FNPS) to evaluate opportunities to relocate impacted individuals from the project footprint prior to construction commencement. Considering this, there is "***no effect anticipated***" on the celestial lily from the proposed project.

Craighead's Nodding Caps (*Triphora craigheadii*)

The craighead's nodding caps are listed as endangered by the FDACS. This species is typically found on the forest floor of mesic and xeric hardwood and coniferous woodlands. Non-wetland, forested habitats within the project study area may provide suitable habitat. Although this species was not observed during project field reviews and was not documented within the FNAI *Standard Data Report* (2021), potentially suitable habitat occurs within and adjacent to the study area. Therefore, the potential for occurrence of this species is considered to be **moderate**. If this species is observed during future project surveys or wetland delineations, the FDOT will coordinate with the FDACS and FNPS to evaluate opportunities to relocate impacted individuals from the project footprint prior to construction commencement. Considering this, there is "***no effect anticipated***" on the craighead's nodding caps.

Florida Willow (*Salix floridana*)

The Florida willow is listed as endangered by the FDACS. This species is typically found in wet, mucky soils in bottomland forests, floodplains, hydric hammocks, and swamps. Forested wetlands within the project study area may provide suitable habitat for this species. Although this species was not observed during project field reviews and was not documented within the FNAI *Standard Data Report* (2021), potentially suitable habitat occurs within and adjacent to the study area. Therefore, the potential for occurrence of this species is considered **moderate**. If this species is observed during future project surveys or wetland delineations, the FDOT will coordinate with the FDACS and FNPS to

evaluate opportunities to relocate impacted individuals from the project footprint prior to construction commencement. Considering this, there is "***no effect anticipated***" on the Florida willow.

Plume Polypody (*Pecluma plumula*)

The plume polypody is listed as endangered by the FDACS. This species is typically on tree branches or limestone in hammocks, wet woods, and limesinks. Hammocks and forested wetlands within the project study area may provide suitable habitat for this species. Additionally, the species was documented immediately adjacent to the project study area in the FNAI *Standard Data Report* (2021). Due to the presence of potentially suitable habitat and the proximity of documented occurrences to the project study area (see **Figure 3-1**), the potential for occurrence of this species is considered **high**. This species was not observed during project field reviews. If this species is observed during future project surveys or wetland delineations, the FDOT will coordinate with the FDACS and FNPS to evaluate opportunities to relocate impacted individuals from the project footprint prior to construction commencement. Considering this, there is "***no adverse effect anticipated***" on the plume polypody.

Pondspice (*Litsea aestivalis*)

The pondspice is listed as endangered by the FDACS. This species is typically found on the edges of baygalls, flatwoods ponds, and cypress domes. Although this species was not observed during the project field reviews and it is not documented in the project study area (FNAI 2021), the edges of wetland systems within the study area may provide suitable habitat for this species. Therefore, the potential for occurrence of this species is considered **moderate**. If this species is observed during future project surveys or wetland delineations, the FDOT will coordinate with the FDACS and FNPS to evaluate opportunities to relocate impacted individuals from the project footprint prior to construction commencement. Considering this, there is "***no effect anticipated***" on the pondspice from the proposed project.

Pygmy Pipes (*Monotropsis reynoldsiae*)

The pygmy pipes are listed as endangered by the FDACS. This species is typically found in upland mixed hardwood forest, mesic and xeric hammock, and sand pine and oak scrub. Non-planted, upland forested areas within the project study area may provide suitable habitat for this species. However, this species was not observed during project field reviews and has not been documented within the project vicinity (FNAI 2021). Therefore, the potential for occurrence of this species within the study area is considered **moderate**. If this species is observed during future project surveys or wetland delineations, the FDOT will coordinate with the FDACS and FNPS to evaluate opportunities to relocate impacted individuals from the project footprint prior to construction commencement. Considering this, there is "***no effect anticipated***" on the pygmy pipes.

Sand Butterfly-pea (*Centrosema arenicola*)

The sand butterfly-pea is listed as endangered by the FDACS. This species is typically found in sandhill, scrub, and scrubby flatwoods habitats. No xeric sandhill, scrub or scrubby flatwoods communities

occur within the project study area. Additionally, this species was not observed during project surveys, and it has not been documented within the project vicinity (FNAI 2021). The potential for occurrence for this species within the project study area is considered to be **none** and there is "***no effect anticipated***" for the sand butterfly-pea from the proposed project.

Stiff-Leaved Wild-Pine (*Tillandsia fasciculata*)

The stiff-leaved wild-pine is listed as endangered by the FDACS. This species is found in dry and mesic hammocks, cypress swamps and pinelands (UF IFAS 2020). Suitable habitats occur within and adjacent to the project study area. Although not documented within the FNAI *Standard Data Report*, the species was observed growing within a live oak tree at one location (see **Figure 3-1** and **Appendix H**) during field reviews. Therefore, the potential for occurrence of this species within the project study area is considered to be **high.** The FDOT will coordinate with the FDACS and FNPS to evaluate opportunities to relocate individual stiff-leaved wild-pine plants from the project footprint prior to construction commencement. As a result, there is "***no adverse effect anticipated***" for the stiff-leaved wild-pine from the proposed build alternative.

3.3.2 Fauna

The twelve species discussed in this section are listed by the FWC (2018a) and included within the FWC's 2016 Imperiled Species Management Plan (ISMP). Additional species-specific action plans and permitting guidelines are summarized as applicable. In completing additional surveys for these species in support of future environmental permitting, the implementation of species-specific BMPs and regulatory agency permit conditions, and the implementation of the FDOT's *Standard Specifications for Road and Bridge Construction*, incidental take is not anticipated for these species.

Florida Pine Snake (*Pituophis melanoleucus mugitus*)

The Florida pine snake currently is listed as threatened by the FWC. This species occurs throughout Florida and inhabits areas that feature well-drained sandy soils with a moderate to open canopy. Preferred landscapes have a moderate to mostly open canopy cover of primarily pine trees and scrubby oaks. The species is frequently a commensal species with gopher tortoises. Potentially suitable upland habitats are present within and adjacent to the project study area and there is a gopher tortoise population within the project study area. However, this species was not observed during project field reviews and was not documented within the FNAI *Standard Data Report* (2021). Therefore, the potential for occurrence of this species within the project study area is considered to be **moderate**.

Although a species-specific incidental take permit as provided by the species' action plan (FWC 2013a) is not anticipated at this time, any incidentally captured pine snake will be released on site or allowed to escape unharmed away from the project site. Gopher tortoise burrow excavations will be completed in accordance with the FWC Gopher Tortoise Relocation Permit requirements. Additionally, the project will use the USFWS Standard Protection Measures for the Eastern Indigo Snake. Therefore, there is "***no adverse effect anticipated***" for the Florida pine snake from the project.

Gopher Tortoise (*Gopherus polyphemus*)

The gopher tortoise currently is listed as a candidate species with the USFWS and as threatened by the FWC. This species occurs throughout Florida and requires well-drained and loose sandy soils for burrowing and low-growing herbs and grasses for foraging. The gopher tortoise is found in a wide variety of habitats including scrub, xeric oak hammocks, dry prairies, pine flatwoods, pastures, and lawns.

During project field reviews, approximately 42 potentially occupied gopher tortoise burrows were observed throughout the upland habitats of the project study area during project field reviews (see **Figure 3-1**). Nineteen (19) of these potentially occupied burrows occur within proposed stormwater pond site SMF 900-1 (south of the Clinton Avenue/Elkins Road intersection), the location of which may be subject to change between the PD&E and Design/Construction phase. Therefore, the species occurrence is considered **high**. The FWC generally assumes a 50% burrow occupancy rate, which would equate to approximately 21 total tortoises requiring relocation. However, this number may increase or decrease prior to project construction depending on the species' local population dynamics, human interference or re-siting of portions of the project's construction footprint.

Current FWC guidelines (2020) require a gopher tortoise relocation permit for any ground disturbance activity occurring within 25 feet (ft) of a potentially occupied gopher tortoise burrow. Since more than ten burrows are currently proposed for impact, an FWC Gopher Tortoise Conservation Permit is anticipated. The project limits will be resurveyed again in accordance with FWC's survey requirements for the species prior to construction to ensure the number and location of affected burrows and tortoises. Following permitting activities and the payment of mitigation fees, impacted tortoises will be relocated to an available FWC-approved/permitted tortoise recipient site by an authorized gopher tortoise agent prior to construction commencement. The FDOT will coordinate further with the FWC as applicable during future project phases. The FDOT will also implement FDOT Special Provision SP0070104-3 *Additional Requirements for Gopher Tortoise* during construction (**Appendix D**). Considering these conservation measures and adherence to FWC guidelines, there is "***no adverse effect anticipated***" for the gopher tortoise.

Short-tailed Snake (*Lampropeltis extenuata*)

The short-tailed snake is listed as threatened by the FWC. Short-tailed snakes are typically found burrowed in sandy soils particularly those within longleaf pine and xeric oak sandhills, scrub, and xeric hammock habitats. Native xeric habitats with sandy soils do not occur within the project study area. Additionally, this species was not observed during project field reviews and was not documented within the FNAI *Standard Data Report* (2021). Therefore, the potential for occurrence of this species within the project study area is considered to be **none**, and there is "***no effect anticipated*** "on the short-tailed snake by the project.

Florida Burrowing Owl (*Athene cunicularia*)

The Florida burrowing owl is listed as threatened by the FWC. The range of the burrowing owl is throughout the peninsular Florida in patches and localized areas. The species inhabits open prairies in Florida that have very little understory vegetation and good visibility. These areas include golf courses, airports, pastures, agriculture fields, and vacant lots. The open pastures within the project study area may provide suitable habitat for this species. However, no burrowing owls or owl burrows were observed within or adjacent to the project study area. Due to the presence of potentially suitable habitat, lack of documentation within the FNAI Standard Data Report, and lack of field observations, the potential occurrence for this species within the project study area is considered to be **moderate**. However, the species is highly mobile and has the potential to move into or adjacent to the project area in the future. Considering these factors, there is "***no adverse effect anticipated***" for the Florida burrowing owl. If the species is documented during future project phases, the FDOT will coordinate further with the FWC and follow the species' Conservation Measures and Permitting Guidelines (FWC 2018b) as applicable.

Florida Sandhill Crane (*Antigone canadensis pratensis*)

The Florida sandhill crane is listed as threatened. Two subspecies of sandhill crane occur in Florida. The Florida sandhill crane (*A. c. pratensis*) is a non-migratory year-round breeding resident. They are joined every winter by migratory greater sandhill cranes (*A. c. tabida*), the larger of the two subspecies. The greater sandhill crane winters in Florida but nests in the Great Lakes region. Sandhill cranes occur throughout peninsular Florida north to the Okefenokee Swamp in southern Georgia. This species utilizes shallow, non-forested wetlands to build its nest during late winter and spring on mats of vegetation about two feet in diameter and in shallow water. The species uses a variety of wetland and uplands for foraging habitat, which may include open areas such as lawns and crop fields.

Non-forested wetlands within the project study area may provide suitable nesting and foraging habitat for this species. Additionally, foraging habitat is present along sodded areas within the roadway ROW and in the non-forested areas of the proposed new alignment. Florida sandhill cranes were observed during the project field reviews (see **Figure 3-1**), but no potential crane nests were observed within or adjacent to the project study area. However, the lack of observed nests is likely due to the field reviews being conducted outside of the typical nesting season of this species. The potential for occurrence of this species is therefore considered to be **high**.

The FDOT will obtain suitable wetland mitigation credits to offset project impacts to all wetlands. Additionally, the upland habitats that are proposed for impact which may provide foraging habitat are not unique or limited at either a regional or a local level. If nests are observed during future project phases, the FDOT will coordinate further with the FWC. As such, there is "***no adverse effect anticipated***" for the Florida sandhill crane.

Least Tern (*Sternula antillarum*) and Black Skimmer (*Rhynchops niger*)

The least tern and black skimmer are listed as threatened by the FWC. Least terns are found along the U.S. Atlantic Coast, mid-Atlantic states, and down from Mexico to northern Argentina. Black skimmers can be found from the coasts of the northeastern U.S., down to Mexico, and over to the Gulf Coast of Florida. In Florida, these species can be found throughout most coastal areas inhabiting areas along estuaries and bays. These species are most commonly found on beach and coastal dune habitats, but they are known to nest on gravel areas, including building rooftops. The project area does not contain any primary/intertidal beach or coastal dune habitat; however, the least tern and black skimmer are addressed herein as specifically included within FWC's ETDM review comments. No least terns or black skimmers were observed during project field reviews and these species were not documented within the FNAI *Standard Data Report*. Due to the lack of observations and lack of suitable natural habitat, the potential for occurrence of these species is considered to be **none**. As such, there is "***no effect anticipated***" for the least tern and black skimmer.

Little Blue Heron (*Egretta caerulea*), Reddish Egret (*Egretta rufescens*), Roseate Spoonbill (*Platalea ajaja*), and Tricolored Heron (*Egretta tricolor*)

The little blue heron, reddish egret, roseate spoonbill, and tricolored heron are listed as threatened by the FWC. In Florida, the little blue heron and tricolored heron can be found in inland freshwater, estuarine and coastal wetlands. Roseate spoonbills have a similar distribution but tend to use inland freshwater wetlands somewhat less commonly. Reddish egrets are almost exclusively a coastal species. Although there is no habitat present for the reddish egret, it is addressed herein as specifically included within FWC's ETDM review comments. These species utilize shallow herbaceous or shrub-dominated wetlands for both nesting and foraging habitat.

A review of the FWC's Water Bird Locator database (2021a) does not show any current or former wading bird colonies or rookeries within or adjacent to the project limits. Foraging habitat is present within wetlands and other surface waters within the project study area. A little blue heron was also observed during the project field reviews (see **Figure 3-1**). Although reddish egret, roseate spoonbill and tricolored heron were not observed, the potential for occurrence of all four of these species is considered to be **high** due to the presence of suitable habitat.

The proposed improvements will result in unavoidable impacts to wetlands and other surface water habitats that may be used by these species for foraging and nesting. The project's implementation of wetland impact avoidance and minimization measures, as well as compensatory mitigation to offset project impacts are anticipated to reduce impacts to these species. Therefore, it is expected that there is "***no adverse effect anticipated***" from the project on the little blue heron, reddish egret, roseate spoonbill, and tricolored heron.

Southeastern American Kestrel (*Falco sparverius paulus*)

The southeastern American kestrel is listed as threatened. The foraging habitats this species frequents include woodlands, sandhill, and fire-maintained savannah pine habitats. However, it will

also use alternative habitats which include pastures and open fields located in residential areas. The species prefers open patches of grass or bare ground with unobstructed views to detect prey while hunting. Within these habitats, kestrels will nest in cavities excavated by woodpeckers in large dead trees and occasionally wooden utility poles. Nest boxes are also used by kestrels, which have become an important artificial habitat for the kestrel due to the loss of primary habitats. Potential nesting and foraging habitat for this species exists within the project study area. Although no nesting cavities were observed, three individual kestrels were observed (see **Figure 3-1**) during project field reviews. Therefore, there is a **high** potential for occurrence. Due to the time of year that field reviews were performed, it can be concluded that these were resident Southeastern American kestrels. If the species is documented nesting within the project during future project phases, the FDOT will coordinate further with the FWC and follow the species action plan (FWC 2013b) as applicable. Considering this, there is "***no adverse effect anticipated***" for the southeastern American kestrel.

3.4 OTHER PROTECTED SPECIES

Bald Eagle (*Haliaeetus leucocephalus*)

The bald eagle is no longer listed under the ESA, however it remains protected under the federal Bald and Golden Eagle Protection Act (16 U.S.C. § 668 et seq.) and the Migratory Bird Treaty Act (16 U.S.C. § 703 et seq.). A review of the FWC's Bald Eagle database (FWC 2021b) showed the nearest documented occurrence of a bald eagle nest to be nest PS 011 approximately 1.4 miles north of the project. No bald eagles were seen/heard during project field reviews and this species was not documented within the FNAI *Standard Data Report* (2021). However, two avian nests were observed in cell towers within the project study area (**Figure 3-1**). One nest was observed at the cell tower in the southwest quadrant of the US 98 and CR 54 intersection. The other nest occurs in a cell tower in a large clearing along the west side of US 98 approximately 2.85 miles north of the US 98/CR 54 intersection. No birds were observed using these nests during project field reviews, so the nests could not be deemed active or inactive or assigned to a particular species. In Florida, eagle nesting season is from October to May, so it is possible that these may be eagle nests. Therefore, potential occurrence for this species within the project study area is considered to be **high**.

The nest near the US 98/CR 54 intersection is within 330 feet of the project. The other nest in the clearing is approximately 800 ft outside of the project ROW. Additional field surveys will be conducted in future project phases during the eagle nesting season to determine if these nests are active eagle nests. If it is determined that these nests are eagle nests, coordination will be required with the USFWS, and this may affect the time of year that construction activities can be performed within proximity of these nests and/or whether a Bald Eagle Permit may be required from the USFWS. FDOT Special Provision SP0070104-2 (Bald Eagle) (see **Appendix D**) will be implemented as applicable during project construction. The FDOT will adhere to all recommendations made by the USFWS and as such, there is "***no adverse effect anticipated***" for the bald eagle.

Florida Black Bear (*Ursus americana floridana*)

The Florida black bear is no longer a state-listed species but is still afforded protection by the Bear Conservation Rule (68A-4.009, F.A.C.). Black bears prefer habitats with a dense understory such as forested wetlands and uplands, natural pinelands, hammocks, scrub, and shrub lands, but will use just about every habitat type in Florida, including swamps. The project occurs within the "occasional" range of the FWC's South Central Bear Management Unit (FWC 2021c). Black bear road mortality and nuisance occurrence data (FWC 2021d & 2021e) were reviewed to assess the potential level of occurrence within the project limits. No black bear mortalities or nuisance reports have been documented within the project study area. No bears or bear tracks were observed during field reviews. However, the species has been documented south and east of the project (see **Figure 3-1**), so the black bear may move across US 98 between the areas in which it has been documented. The potential for occurrence of this species within the project study area is therefore considered to be **moderate**. Within the project limits, the FDOT will construct a wildlife feature with upland shelves at the US 98 bridge of the Hillsborough River which could be used by bears to cross US 98. It is also recommended that the FDOT utilize the black bear special provision (included in **Appendix D**). Therefore, there is "***no adverse effect anticipated***" for the Florida black bear from the proposed project.

3.5 WILDLIFE FEATURE

The proposed project will replace the US 98 bridge over the Hillsborough River. With public conservation lands present on both sides of US 98 in this location, the SWFWMD Upper Hillsborough Preserve to the south and the SWFWMD Green Swamp Wilderness Preserve to the north, the FDOT is proposing a wildlife feature be incorporated into the bridge replacement. The wildlife feature is expected to include 10-foot shelves on each side of the river for wildlife use. Due to right of way (ROW), drainage and environmental lands constraints, the profile of the roadway and bridge is not expected to be raised above the existing condition. Therefore, the vertical clearance for the feature is anticipated to be approximately 3 feet, similar to what exists today. The target species for this wildlife feature will be non-listed amphibians, reptiles and small mammals.

A meeting with the FWC was conducted on September 8, 2021 to discuss the proposed wildlife feature. Meeting notes and conceptual details are included in **Appendix F**. Specific wildlife feature details will be developed during project design.

SECTION 4 WETLANDS AND OTHER SURFACE WATERS

The locations, limits, types, nature, and functions of all surface waters, including wetlands within the project limits were assessed as part of compliance with Presidential Executive Order (EO) 11990, "Protection of Wetlands" and USDOT Order 5660.1A, *Preservation of the Nation's Wetlands*. These federal policies require avoidance of long and short-term impacts and avoidance of direct and indirect support of new construction in wetlands to the fullest extent practicable.

4.1 METHODOLOGY

Wetland and other surface water boundaries were approximated in both a desktop and field evaluation in conformance with the federal and state criteria promulgated in the *Corps of Engineers Wetlands Delineation Manual* (USACE 1987), the *Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Atlantic and Gulf Coastal Plain Region: Version 2* (USACE 2010), and the *Florida Wetlands Delineation Manual* (Gilbert et. al 1995). Background research conducted to identify the wetland communities occurring within the study area included review of the USFWS *National Wetland Inventory* (NWI) (2021c), Land Use and Cover data from the SWFWMD (2017), Soil Survey Geographic (SSURGO) Database for Florida (NRCS 2018, 2021), and aerial photography interpretation (ESRI 2021 & Google Earth 2021). Data verification was conducted during field reconnaissance surveys.

The approximate boundaries of all wetland and other surface water features occurring within the study area were mapped, assigned an identification number, and categorized in accordance with the USFWS NWI GIS data (2021c) and the FLUCFCS designation (SWFWMD 2017). Dominant vegetative strata, plant species (Tobe et. al 1998), hydrologic indicators, and soil characteristics were assessed and documented.

Wetland and other surface water features were designated based upon their status, hydrology, and soils. Vegetated wetland systems (i.e. cypress, stream/lake swamps, marshes, etc.) were designated as wetlands (WL) and occur throughout the southernmost 4.3 miles of the study area. Ditches which are relatively permanent waters, were excavated in hydric soils, and/or contain hydrophytic vegetation were designated as wet ditches (D). Open water, unvegetated systems within the study area were identified as ponds (P). Maps depicting wetlands and other surface water features occurring within the study area are provided in **Appendix G** and site photos are available in **Appendix H**.

4.2 EXISTING SURFACE WATERS

The existing conditions of all surface waters (including wetlands) within the study area were assessed using GIS data resources and field verification. Forty-eight (48) systems occur within the study area. These systems all occur within the Withlacoochee HUC8 watershed; however, certain systems occur within the Hillsborough River Basin and others within the Withlacoochee Basin. These systems are further described in the following text and **Table 4-1** which includes the acreage of the systems

occurring within the study area, which basin each system occurs in, each system's FLUCFCS Description (FDOT 1999), as well as the NWI classification (Cowardin et al 1979).

Table 4-1 Wetlands and Other Surface Waters within Study Area

Number	FLUCFCS Classification	FLUCFCS Description	NWI Classification	Basin	Study Area Acres
Other Surface Waters					
D-1	5100	Streams and Waterways	R2EMx	Hillsborough River	0.26
D-2	5100	Streams and Waterways	R2EMx	Hillsborough River	0.39
D-3	5100	Streams and Waterways	R2EMx	Hillsborough River	1.34
D-4	5100	Streams and Waterways	R2EMx	Hillsborough River	3.58
D-5	5100	Streams and Waterways	R2EMx	Hillsborough River	0.07
D-6	5100	Streams and Waterways	R2EMx	Hillsborough River	0.04
D-7	5100	Streams and Waterways	R2EMx	Hillsborough River	0.72
D-8	5100	Streams and Waterways	R2EMx	Hillsborough River	0.47
D-9	5100	Streams and Waterways	R2EMx	Hillsborough River	0.6
D-10	5100	Streams and Waterways	R2EMx	Hillsborough River & Withlacoochee	5.56
D-11	5100	Streams and Waterways	R2EMx	Withlacoochee	1.22
P-1	5300	Reservoirs	L2UB4x	Hillsborough	0.63
P-2	5300	Reservoirs	L2UB4x	Withlacoochee	1.17
P-3	5300	Reservoirs	L2UB4x	Withlacoochee	2.86
P-4	5300	Reservoirs	L2UB4x	Withlacoochee	0.04
Other Surface Waters Total					**18.95**
Wetlands					
WL-1	6300	Wetland Forested Mixed	PFO	Hillsborough River	4.02
WL-2	6410	Freshwater Marshes	PEM1	Hillsborough River	0.98
WL-3	6300	Wetland Forested Mixed	PFO	Hillsborough River	0.16
WL-4	6150	Stream and Lake Swamps (Bottomland)	PFO3	Hillsborough River	5.49
WL-5	6430	Wet Prairies	PEM1	Hillsborough River	4.03
WL-6	6170	Mixed Wetland Hardwoods	PFO3	Hillsborough River	1.97
WL-7	6170	Mixed Wetland Hardwoods	PFO3	Hillsborough River	1.86

Number	FLUCFCS Classification	FLUCFCS Description	NWI Classification	Basin	Study Area Acres
WL-8	6410	Freshwater Marshes	PEM1	Hillsborough River	0.44
WL-9	6410	Freshwater Marshes	PEM1	Hillsborough River	0.33
WL-10	6410	Freshwater Marshes	PEM1	Hillsborough River	0.05
WL-11	6210	Cypress	PFO2	Hillsborough River	2.96
WL-12	6410	Freshwater Marshes	PEM1	Hillsborough River	0.15
WL-13	6410	Freshwater Marshes	PEM1	Hillsborough River	0.22
WL-14	6170	Mixed Wetland Hardwoods	PFO3	Hillsborough River	0.22
WL-15	6410	Freshwater Marshes	PEM1	Hillsborough River	0.12
WL-16	6210	Cypress	PFO2	Hillsborough River	0.17
WL-17	6300	Wetland Forested Mixed	PFO	Hillsborough River	1.95
WL-18	6410	Freshwater Marshes	PEM1	Hillsborough River	1.71
WL-19	6410	Freshwater Marshes	PEM1	Hillsborough River	0.48
WL-20	6430	Wet Prairies	PEM1	Hillsborough River	0.01
WL-21	6150	Stream and Lake Swamps (Bottomland)	PFO3	Hillsborough River & Withlacoochee	125.01
WL-22	6150	Stream and Lake Swamps (Bottomland)	PFO3	Withlacoochee	3.34
WL-23	6150	Stream and Lake Swamps (Bottomland)	PFO3	Withlacoochee	10.85
WL-24	6430	Wet Prairies	PEM1	Withlacoochee	0.32
WL-25	6430	Wet Prairies	PEM1	Withlacoochee	0.08
WL-26	6210	Cypress	PFO2	Withlacoochee	4.37
WL-27	6210	Cypress	PFO2	Withlacoochee	1.87
WL-28	6300	Wetland Forested Mixed	PFO	Withlacoochee	1.50
WL-29	6210	Cypress	PFO2	Withlacoochee	0.08
WL-30	6410	Freshwater Marshes	PEM1	Withlacoochee	0.49
WL-31	6210	Cypress	PFO2	Withlacoochee	0.34
WL-32	6250	Hydric Pine Flatwoods	PFO2	Withlacoochee	0.60
WL-33	6150	Stream and Lake Swamps (Bottomland)	PFO3	Withlacoochee	13.56
Wetlands Total					**189.73**

Streams and Waterways (FLUCFCS 510)

Streams and Waterways within the study area consist of eleven hydric stormwater management features (i.e., ditches and swales) within roadway ROW and on private properties identified as D-1 through D-11.

D-1, D-2, D-3, D-4, D-9, D-10, and D-11 are the hydric roadside ditches that occur within the existing ROW of US 98. These systems contain species such as soft rush, cattail (*Typha latifolia*), saltbush (*Baccharis halimifolia*), wax myrtle, Carolina willow, Peruvian primrose willow, Chapman's beaksedge (*Rhynchospora chapmanii*), star sedge (*Dichromena* spp.), beggarticks, dollarweed (*Hydrocotyle umbellata*), and blue maidencane (*Amphicarpum muehlenbergianum*). During field reviews, these other surface waters were observed to be saturated and inundated. Tadpoles were observed in areas of inundation. The soil map units these systems occur over are Pomona, Tavares, Zephyr, Myakka, Chobee, Eaugallie, Sparr, and Sellers.

D-5, D-6, D-7, and D-8 are other surface waters that occur on private properties in pasture areas. From discussions with the property owner, these features were excavated in the 1960's to alleviate flooding and direct runoff toward the Hillsborough River. These systems typically have steep banks and were inundated during field reviews. These systems typically contain blue maidencane, soft rush, dollarweed, and beggarticks. The soil map units that these systems occur over are Pomona, Zephyr, and Eaugallie.

Reservoirs (FLUCFCS 530)

P-1, P-2, P-3, and P-4 are excavated features or depressional areas within the study area. These systems are open water, typically non-vegetated systems; although, surficial species such as duckweed, water spangles and waterlily are present and the banks of P-2 contain red maple, soft rush, and sweetgum. The soil map units within these systems consist of Pomona, Zephyr, Tavares, Lake, and Water.

Stream and Lake Swamps (Bottomland) (FLUCFCS 615)

WL-4, WL-21, WL-22, WL-23, and WL-33 are the stream and lake swamps within the project study area. Stream and lake swamps are the third most abundant land use/cover within the project study area, accounting for 158.25 acres (15.46% of the study area). These systems occur on both sides of US 98 from the project limits at CR 54 to the proposed location of SMF 300-1. WL-21 is hydrologically contiguous with the Hillsborough River. These systems have been fragmented by residential developments/livestock operations and US 98 and other roadways.

The canopies of these systems typically contain bald cypress (*Taxodium distichum*), sweetgum, red maple, slash pine, American elm (*Ulmus americana*), swamp bay (*Persea palustris*), laurel oak, and water oak (*Quercus nigra*). Midstory species typically included Carolina willow, wax myrtle, and cabbage palm. Groundcover and shrub level species typically included Peruvian primrose willow, button bush (*Cephalanthus occidentalis*), elderberry (*Sambucus canadensis*), swamp fern (*Blechnum serrulatum*), chain fern (*Woodwardia virginica*), arrowhead (*Sagittaria lancifolia*), and pickerelweed

(*Pontederia cordata*). The soil series that these systems occur over are Pomona, Sparr, Eaugallie, Zephyr, Chobee, Wabasso, Pits, Adamsville, Myakka, and Tavares.

Mixed Wetland Hardwoods (FLUCFCS 617)

WL-6, WL-7, and WL-14 are the Mixed Wetland Hardwood systems within the project study area. WL-6 and WL-7 occur just east and north of the US 98/CR 54 intersection respectively. WL-14 occurs on the north side of US 98 approximately 0.5-mile northwest of the US98/CR 54 intersection. These systems are wetlands dominated by various hardwood species that are not directly associated with Hillsborough River floodplains or other floodplains. These systems are typically dominated by species such as red maple, sweet gum, laurel oak, and water oak. The soil series that these systems occur over are Pomona and Sellers.

Cypress (FLUCFCS 621)

WL-11, WL-16, WL-26, WL-27, WL-29, and WL-31 are the cypress wetlands that occur within the project study area. All of these species contain canopies dominated by bald cypress. WL-11 and WL-16 are cypress domes that occur on private properties with pastures used for grazing livestock. WL-26, WL 27, WL-29, and WL-31 are each cypress-dominated wetland systems within larger stream and lake swamp systems. These systems occur over Sellers, Pomona, Zephyr, Adamsville, Myakka, and Tavares soils series.

Hydric Pine Flatwoods (FLUCFCS 625)

WL-32 is the only Hydric Pine Flatwood that occurs within the project study area. This system occurs at the edge of the study area on the north side of US 98 approximately 2.8 miles northwest of the US 98/CR 54 intersection. This system is dominated by slash pine with little understory vegetation. This system occurs over Adamsville and Tavares soil series.

Wetland Forested Mixed (FLUCFCS 630)

WL-1, WL-3, WL-17, and WL-28 are the Wetland Forested Mixed systems that occur within the study area. These systems are wetlands which are dominated by a mixture of hardwood and coniferous species that are not directly associated with the Hillsborough River floodplain or other floodplains. WL-1 and WL-3 occur south of the US 98/CR 54 intersection. WL-17 and WL-28 each occur on the north side of US 98, approximately 0.6 mile and 2.4 miles northwest of the US 98/CR 54 intersection respectively. The canopies of these systems typically contain red maple, sweet gum, water oak, slash pine, and bald cypress. Understory species are typically Carolina willow and cabbage palm. These systems occur over Eaton, Pomona, Zephyr, and Myakka soil series.

Freshwater Marshes (FLUCFCS 641)

WL-2, WL-8, WL-9, WL-10, WL-12, WL-13, WL-15, WL-18, WL-19, and WL-30 are the freshwater marshes within the project study area. Apart from WL-30, each of these systems occur within 1 mile of the US 98 and CR 54 intersection and are low-lying areas within pastures on private properties. WL-30 is a non-forested system that occurs within WL-21 which is a stream and lake swamp. Typical

species within these systems include blue maidencane, soft rush, bushy bluestem (*Andropogon glomeratus*), and pickerelweed. These systems occur over Eaton, Pomona, Zephyr, Myakka, Pits, and Water soils series.

Wet Prairies (FLUCFCS 643)

WL-5, WL-20, WL-24, and WL-25 are the wet prairies within the project study area. WL-2 and WL-5 occur on private property within pastures used for livestock grazing adjacent to the intersection of US 98 and CR 54. WL-20, WL-24, Wl-25, WL-28, and WL-32 are non-forested systems that occur within WL-21. These systems are dominated by hydrophytic grass species such as blue maidencane, bushy bluestem, and torpedograss (*Panicum repens*), but also contain emergent species such as arrowhead and cattails. These systems occur over Basinger, Myakka, Pomona, Eaton, Wabasso, Pits, and Zephyr.

4.3 IMPACT AVOIDANCE AND MINIMIZATION

Pursuant to Executive Order 11990, *Protection of Wetlands*, federal actions should avoid, to the extent possible, the long- and short-term adverse impacts associated with the destruction or modification of wetlands and avoid direct or indirect support of construction in wetlands wherever there is a practicable alternative. Unavoidable wetland impacts resulting from construction of the project would occur with the build alternative. Transportation safety standards for side slopes, additional lanes and widths, horizontal clearances/clear zones, driver sight distance, and stormwater management facility design necessitate these impacts. Impacts to wetlands are unavoidable for the build alternative due to the presence of wetlands within the existing and proposed ROW. Wetland impacts are primarily being avoided and minimized by keeping the proposed roadway improvements within the existing 160’ right of way through the sensitive Green Swamp Area. In order to do this, design variations for border width, median width, and/or side slopes are being sought. No right of way acquisition for roadway or pond sites is being proposed from the State TIITF lands or the Boarshead Ranch Mitigation Bank.

Additional wetland impact avoidance and minimization measures will be evaluated and documented during the project design phase. These measures may include but are not limited to, consideration of the use of structural elements such as retaining walls, consideration of the placement of stormwater treatment systems, and the use of appropriate best management practices during construction.

4.4 WETLAND IMPACT ANALYSIS

The project mainline will directly impact approximately 9.29 acres of wetlands and result in approximately 10.94 acres of secondary wetland impacts. Direct and secondary impacts from the project mainline total approximately 20.23 acres of wetland impacts. Direct impacts were calculated from impacts resulting directly from the project footprint (assuming all systems within project ROW would be impacted) and secondary impacts were calculated using a 25-ft buffer from the primary impacts. Of these impacts, 5.00 acres are within the Withlacoochee Basin. The remaining 15.23 acres of impacts are within the Hillsborough River Basin.

For the recommended SMF and FPC sites documented in this NRE, only SMF 200-1 would result in wetland impacts. SMF 200-1 would result in 6.85 acres of direct impacts to wetlands and 1.35 acres of secondary impacts to wetlands. Combined direct and secondary impacts from SMF 200-1 total 8.20 acres of impacts. These impacts are entirely within the Hillsborough River Basin.

Approximately 11.25 acres of impacts to man-made other surface waters are anticipated from the construction of the roadway improvements, with an additional 1.95 acres of man-made other surface water impacts resulting from stormwater pond and floodplain compensation facility construction. Of these other surface water impacts, approximately 12.08 acres of impact will occur within the Hillsborough River basin and 1.12 acres of impact will occur within the Withlacoochee River basin.

Impacts to wetlands within the study area will result mostly from placement of fill material but will also occur from excavation of lands for FPCs and SMFs. Maps depicting wetland impacts related to the build alternative are provided in **Appendix I**.

Impacts to project wetlands were assessed using the Uniform Mitigation Assessment Method (UMAM). The UMAM (Chapter 62-345 F.A.C.) was developed by the State of Florida to assess the ecological functions provided by wetlands and the amount of mitigation necessary to offset the loss of functions by a proposed project. UMAM was subsequently adopted by the USACE. The UMAM analysis is based on assessing an area on three criteria: location and landscape support, water environment, and community structure. These criteria are scored with the whole increment values between "10" (indicating the highest quality system) and "0" (indicating no present value). The three criteria are summed and divided by 30 to yield a score for the assessment area between "0" and "1". The difference between the "with project" and "current" condition is calculated to result in the "Delta". The UMAM delta is multiplied by the area of wetland impact to quantify the loss of wetland functions (functional loss).

UMAM was used to analyze the quality of the wetlands which will be impacted by the project. Each individual wetland within the project corridor was evaluated using UMAM and the assessment area was calculated based on the proposed improvements. The wetlands within the project corridor were grouped together based on wetland type, function, overall characteristics, and watershed.

UMAM data sheets were compiled for each wetland type and are provided in **Appendix J**. The functional loss for the surface waters within the project footprint was calculated and a summary table of the functional loss by habitat is included in **Table 4-2**. The impact acreage of other surface waters (FLUCFCS 510 and FLUCFCS 530) is provided in the assessment; however, wetland mitigation is not required for these systems. The FDEP may claim federal jurisdiction over portions of ditches cut in hydric soils. The jurisdiction along with potential mitigation requirements for these ditches will be determined during the project's design and environmental permitting phase.

Direct wetland impacts from the project mainline (9.29 acres) will result in an estimated functional loss of 6.77 units. The secondary wetland impacts associated with the project mainline (10.94 acres) will result in an estimated functional loss of 1.09 units. Total direct and secondary wetland impacts from the project mainline (20.23 acres) are estimated to have a total functional loss of 7.86 units. The

5.00 acres within the Withlacoochee Basin would have a total estimated functional loss of 1.6. The impacts within the Withlacoochee Basin will be exclusively to forested systems. Of the 15.23 acres within the Hillsborough River Basin, 14.49 acres of impacts will be to forested systems with an estimated functional loss of 6.03. Approximately 0.74 acre of impact would result to herbaceous systems within the Hillsborough River Basin with an estimated functional loss of 0.23.

The direct wetland impacts associated with SMF 200-1 (6.85 acres) are estimated to result in 5.00 units of functional loss and the secondary wetland impacts (1.35 acres) are estimated to result in 0.14 units of functional loss. The combined direct and secondary impacts which would result from SMF 200-1 total 8.20 acres of impacts resulting in 5.14 units of functional loss. These impacts are entirely to forested systems within the Hillsborough River Basin.

The project will also result in 1.02 acres of secondary impacts to systems within the Boarshead Ranch Mitigation Bank property. Secondary impacts to this property will need to be coordinated further with the mitigation bank and permitting agencies during the project's design and environmental permitting phase.

Table 4-2 Project Wetland Impacts and UMAM Analysis Summary

Project Feature	Impacted Systems	FLUCFCS Classification	Herbaceous/ Forested Systems	Direct Impact Area Per Basin (Acres)	Direct Impact Area Total (Acres)	Secondary Impact Area Per Basin (Acres)	Secondary Impact Area Total (Acres)	Total Impact Areas Per Basin (Acres)	Total Impact Area (Acres)	Delta (Prim/ Second)	Direct Functional Loss Per Basin	Total Direct Functional Loss	Secondary Functional Loss Per Basin	Total Secondary Functional Loss	Total Functional Loss Per Basin	Total Functional Loss
Roadway	D-1, D-2, D-3, D-4, D-9, D-10, and D-11	5100: Streams and Waterways	N/A	Withlacoochee: 4.66 (2.56 in hydric soils & 2.1 in upland soils) Hillsborough River: 6.55 (1.22 in hydric soils & 5.33 in upland soils)	11.21 total (3.78 in hydric soils and 7.43 in upland soils)	N/A	N/A	Withlacoochee: 4.66 (2.56 in hydric soils & 2.1 in upland soils) Hillsborough River: 6.55 (1.22 in hydric soils & 5.33 in upland soils)	11.21 total (3.78 in hydric soils & 7.43 in upland soils)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	P-4	5300: Reservoirs	N/A	Withlacoochee: 0.04 in upland soils	0.04 (upland soils)	N/A	N/A	Withlacoochee: 0.04 in upland soils	0.04	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Other Surface Waters Total		**N/A**	**Withlacoochee: 4.70 Hillsborough River: 6.55**	**11.25**	**N/A**	**N/A**	**Withlacoochee: 4.70 Hillsborough River: 6.55**	**11.25**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
	WL-1	6300: Wetland Forested Mixed	Forested	Hillsborough River: 0.51	0.51	Hillsborough River: 0.41	0.41	Hillsborough River: 0.92	0.92	-0.73 / -0.10	Hillsborough River: 0.37	0.37	Hillsborough River: 0.04	0.04	Hillsborough River: 0.41	0.41
	WL-4, WL-21, WL-22, and WL-33	6150: Stream and Lake Swamps (Bottomland)	Forested	Withlacoochee: 1.75 Hillsborough River: 6.77	8.52	Withlacoochee: 3.25 Hillsborough River: 6.80	10.05	Withlacoochee: 5.00 Hillsborough River: 13.57	18.57	-0.73 / -0.10	Withlacoochee: 1.28 Hillsborough River: 4.94	6.22	Withlacoochee: 0.32 Hillsborough River: 0.68	1.00	Withlacoochee: 1.6 Hillsborough River: 5.62	7.22
	WL-2 and WL-15	6410: Freshwater Marshes	Herbaceous	Hillsborough River: 0.06	0.06	Hillsborough River: 0.05	0.05	Hillsborough River: 0.11	0.11	-0.70 / -0.10	Hillsborough River: 0.04	0.04	Hillsborough River: 0.01	0.01	Hillsborough River: 0.05	0.05
	WL-5	6430: Wet Prairies	Herbaceous	Hillsborough River: 0.20	0.20	Hillsborough River: 0.43	0.43	Hillsborough River: 0.63	0.63	-0.70 / -0.10	Hillsborough River: 0.14	0.14	Hillsborough River: 0.04	0.04	Hillsborough River: 0.18	0.18
	Wetlands Total		**N/A**	**Withlacoochee: 1.75 (forested) Hillsborough River: 7.54 (7.28 forested & 0.26 herbaceous)**	**9.29**	**Withlacoochee: 3.25 (forested) Hillsborough River: 7.69 (7.21 forested & 0.48 herbaceous)**	**10.94**	**Withlacoochee: 5.00 (forested) Hillsborough River: 15.23 (14.49 forested & 0.74 herbaceous)**	**20.23**	**N/A**	**Withlacoochee: 1.28 (forested) Hillsborough River: 5.49 (5.31 forested & 0.18 herbaceous)**	**6.77**	**Withlacoochee: 0.32 (forested) Hillsborough River: 0.77 (0.72 forested & 0.05 herbaceous)**	**1.09**	**Withlacoochee: 1.6 (forested) Hillsborough River: 6.26 (6.03 forested & 0.23 herbaceous)**	**7.86**
SMF 200-1	D-7 and D-8	5100: Streams and Waterways	N/A	Hillsborough River 0.87 (0.60 in hydric soils & 0.27 in uplands soil)	0.87 (0.60 in hydric soils & 0.27 in uplands soil)	N/A	N/A	Hillsborough River 0.87 (0.60 in hydric soils & 0.27 in uplands soil)	0.87 (0.60 in hydric soils & 0.27 in uplands soil)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Other Surface Waters Total		**N/A**	**Hillsborough River: 0.87**	**0.87**	**N/A**	**N/A**	**Hillsborough River: 0.87**	**0.87**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**

Project Feature	Impacted Systems	FLUCFCS Classification	Herbaceous/ Forested Systems	Direct Impact Area Per Basin (Acres)	Direct Impact Area Total (Acres)	Secondary Impact Area Per Basin (Acres)	Secondary Impact Area Total (Acres)	Total Impact Areas Per Basin (Acres)	Total Impact Area (Acres)	Delta (Prim/ Second)	Direct Functional Loss Per Basin	Total Direct Functional Loss	Secondary Functional Loss Per Basin	Total Secondary Functional Loss	Total Functional Loss Per Basin	Total Functional Loss
	WL-22 and WL-23	6150: Stream and Lake Swamps (Bottomland)	Forested	Hillsborough River: 6.85 (forested)	6.85	Hillsborough River: 1.35 (forested)	1.35	Hillsborough River: 8.20 (forested)	8.20	-0.73 / -0.10	Hillsborough River: 5.00 (forested)	5.00	Hillsborough River: 0.14 (forested)	0.14	Hillsborough River: 5.14 (forested)	5.14
	Wetlands Total		**N/A**	**Hillsborough River: 6.85 (forested)**	**6.85**	**Hillsborough River: 1.35 (forested)**	**1.35**	**Hillsborough River: 8.20 (forested)**	**8.20**	**N/A**	**Hillsborough River: 5.00 (forested)**	**5.00**	**Hillsborough River: 0.14 (forested)**	**0.14**	**Hillsborough River: 5.14 (forested)**	**5.14**
SMF 300-1	P-2	5300: Reservoirs	N/A	0.59 (Withlacoochee)	0.59 (upland soils)	N/A	N/A	0.59 (Withlacoochee)	0.59	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FPC 300-South-01	P-2	5300: Reservoirs	N/A	0.49 (Withlacoochee)	0.49 (upland soils)	N/A	N/A	0.49 (Withlacoochee)	0.49	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FPC 300-North-01, SMF 400-1, SMF 500-1, SMF 600-2, SMF 700-1, SMF 800-1, SMF 900-1	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

4.5 CONCEPTUAL MITIGATION PLAN

Wetland impacts which will result from the construction of this project will be mitigated pursuant to Section 373.4137, F.S., to satisfy all mitigation requirements of Part IV of Chapter 373, F.S. and 33 USC. §1344. In 2008, the USACE and the US Environmental Protection Agency (USEPA) issued regulations governing compensatory mitigation for activities authorized by the Department of the Army (Federal Register 2008). These regulations, as promulgated in 33 CFR Part 332, establish a hierarchy for determining the type and location of compensatory mitigation. Briefly summarized, the rule establishes a preference for the use of mitigation bank credits if a mitigation bank has the appropriate number of and resource type of credits available. If the permitted impacts are not in the service area of an approved mitigation bank or in-lieu fee program cannot be used to provide the required compensatory mitigation, the rule establishes a preference for permittee responsible mitigation under a watershed approach.

Total impacts from the project mainline and SMF 200-1 total approximately 28.43 acres of wetland impacts with a total estimated functional loss of 13.0 units. Of these impacts, 5.00 acres are within the Withlacoochee Basin with a total estimated functional loss of 1.6. The impacts within the Withlacoochee Basin will be exclusively to forested systems. The remaining 23.43 acres of impacts are within the Hillsborough River Basin. Of these 23.43 acres, 22.69 acres of impacts will be to forested systems with a functional loss of 11.17. Approximately 0.74 acre of impact would result to herbaceous systems within the Hillsborough River Basin with a functional loss of 0.23.

The project anticipates using commercially available mitigation credits from agency-approved banks with an appropriate geographic service area to provide compensatory mitigation sufficient to offset unavoidable project impacts to wetlands and wetland-dependent species habitat. The mitigation banks within the Hillsborough River Basin include the Hillsborough River Mitigation Bank (MB), the Hillsborough River Phase II MB, Wiggins Prairie MB, and the North Tampa MB. The mitigation banks within the Withlacoochee River Basin include the Green Swamp MB, the Withlacoochee MB, the Crooked River MB, and the Hilochee MB. The entire roadway project is located within the Boarshead Ranch MB. **Table 4-3** below details the type and amount of credits available at these banks. These values are based on review of the USACE Regulatory In-Lieu Fee and Bank Information Tracking System (RIBITS) conducted on August 27, 2021. Although credit availability among these banks will likely change in the time between this PD&E study's conclusion and the project's future environmental permitting efforts, sufficient mitigation credits are available to offset the impacts from the proposed improvements. With compensatory mitigation completed within the same watershed where the impacts are incurred, the project will not result in cumulative impacts.

Table 4-3 Compensatory Wetland Mitigation Options for US 98

Bank Name	Credit Classification	Assessment Method	Basin	Available Credits
Boarshead Ranch MB	Palustrine Emergent and Palustrine Forested	UMAM	Hillsborough River and Withlacoochee	21.78 emergent 14.63 forested
Hillsborough River Phase I and Phase II MB	Palustrine Emergent and Palustrine Forested	UMAM	Hillsborough River	6.658 emergent 11.72 forested
Wiggins Prairie MB	Palustrine Emergent and Palustrine Forested	UMAM	Hillsborough River	8.61 emergent 6.45 forested
North Tampa MB	Palustrine Forested	UMAM	Hillsborough River	1.82 forested
Green Swamp MB	Palustrine Forested	UMAM	Withlacoochee	19.49 forested
Withlacoochee MB	Palustrine Emergent and Palustrine Forested	UMAM	Withlacoochee	0.29 emergent 20.34 forested
Crooked River MB	Palustrine Emergent and Palustrine Forested	UMAM	Withlacoochee	0.00 emergent 0.00 forested
Hilochee MB	Palustrine Emergent and Palustrine Forested	UMAM	Withlacoochee	31.31 emergent 6.26 forested

The exact number of mitigation credits required to fully offset the lost value of functions resulting from the project's wetland impacts will be determined during the design phase and in coordination with the state and federal environmental permitting agencies.

4.6 SIGNIFICANT WATERS AND PROTECTION AREAS

Significant Waters and Protection Areas include Aquatic Preserves, Outstanding Florida Waters (OFW), Wild and Scenic Rivers, and Class I and Class II waters. Both the Hillsborough River system (south of US 98) and the Withlacoochee River System (north of US 98) have been designated as Special Outstanding Florida Waters under 62-302.700(9)(i), Florida Administrative Code. Therefore, enhanced water quality treatment considerations will be necessary. These enhanced water quality considerations are discussed further in the Pond Siting Report and Water Quality Impact Evaluation prepared under separate cover for this study. The project's stormwater management facilities will be designed in accordance with applicable State requirements and coordinated further with the SWFWMD during the project's future environmental permitting effort.

SECTION 5 ESSENTIAL FISH HABITAT ASSESSMENT

Essential Fish Habitat (EFH) and Habitat Areas of Particular Concern (HAPC) are designated by the National Oceanic and Atmospheric Administration (NOAA), NMFS and the regional fishery management councils for species managed under the Magnuson-Stevens Fishery Conservation and Management Act as amended (MSA). The MSA established eight Fishery Management Councils (FMC) across the country that are tasked with creating and amending Fishery Management Plans (FMP). However, due to the inland geographic location of the project, there are no tidally-influenced surface waters within the project study area. Therefore, there is no EFH or HAPC within the project study area and consultation for EFH is not necessary.

SECTION 6 ANTICIPATED PERMITS, COORDINATION, AND AUTHORIZATIONS

Environmental permits, coordination, and authorizations from the following agencies will likely be required for construction of this project:

Anticipated Permits

- SWFWMD – Individual Environmental Resource Permit (ERP)
- FDEP – Section 404 Standard Individual Permit, National Pollutant Discharge Elimination System (NPDES) Permit (to be obtained by contractor)
- FWC – Gopher Tortoise Conservation Permit

Anticipated Coordination

- USFWS – ESA Section 7 consultation for federally-listed plant and animal species, coordination for bald eagle and other migratory bird species.
- FWC – Coordination for state-listed animal species and the black bear.
- FDACS – Coordination for state-listed plant species.

As part of this PD&E study, the FDOT submitted a Sovereign Submerged Lands determination request to the FDEP Division of State Lands Bureau of Survey and Mapping for the US 98 crossing at the Hillsborough River. Via a response letter dated April 2, 2021 (see **Appendix K**), the FDEP responded "currently there is insufficient information and documentation to determine whether the submerged lands at this site are state owned. We recommend that the proprietary requirements normally applied to state owned lands not be applied to this site. There are no Board of Trustees Easements of leases at the subject site."

SECTION 7 CONCLUSION

7.1 PROTECTED SPECIES AND HABITAT

The study area was evaluated for the presence of federal and/or state protected species and their suitable habitat in accordance with Section 7 of the ESA and Part 2, Chapter 16 of the PD&E Manual. Based on this evaluation the proposed project "***may affect, but is not likely to adversely affect***" the Eastern indigo snake, Eastern black rail and wood stork. The project is anticipated to have "***no effect***" on the bluetail mole skink, Audubon's crested caracara, Florida scrub jay, piping plover and red cockaded woodpecker. For state-listed species there is "***no adverse effect anticipated***" for the plume polypody, stiff-leaved wild pine, Florida pine snake, gopher tortoise, Florida burrowing owl, Florida sandhill crane, little blue heron, reddish egret, roseate spoonbill, southeastern American kestrel, tricolored heron, bald eagle and the Florida black bear. There is "***no effect anticipated***" for the celestial lily, craighead's nodding caps, Florida willow, pondspice, pygmy pipes, sand butterfly pea, short-tailed snake, least tern and black skimmer.

Multiple protection measures are to be employed to negate and minimize any potential effects to these species. Some of the measures employed are anticipated to include more detailed field surveys and agency coordination during the project's design phase, the use of Best Management Practices (BMPs), and species-specific standard protection measures/FDOT Special Provisions (e.g., eastern indigo snake, gopher tortoise, and black bear) during construction. The FDOT is proposing a wildlife feature be incorporated into the Hillsborough River bridge replacement. The wildlife feature is expected to include 10-foot shelves on each side of the river for wildlife use. Due to right of way, drainage and environmental lands constraints, the profile of the roadway and bridge is not expected to be raised above the existing condition. Therefore, the vertical clearance for the crossing is anticipated to be approximately 3 feet, similar to what exists today. During the design and permitting phases, the FDOT will reassess the project action area for potential involvement with federal and state-protected species and coordinate further with the USFWS, FWC and FDACS as necessary.

7.2 WETLANDS FINDING

In accordance with Executive Order 11990 and US DOT 5660.1A, and based on the documentation of existing wetland conditions as presented in the NRE, and in consideration of the Preferred Alternative and its effects on wetlands, it is hereby determined that:

- Measures have been taken to minimize harm to wetlands. Wetland impacts are primarily being avoided and minimized by keeping the proposed roadway improvements within the existing 160' right of way through the sensitive Green Swamp Area. In order to do this, design variations for border width, median width, and/or side slopes are being sought. No right of way acquisition for roadway or pond sites is being proposed from the TIITF lands or the Boarshead Ranch Mitigation Bank.

- Through the implementation of compensatory mitigation, the proposed project will have no significant short-term or long-term adverse impacts to wetlands.
- There is no practicable alternative to construction in wetlands.

Wetland impacts which will result from the construction of this project will be mitigated pursuant to Section 373.4137, F.S., to satisfy all mitigation requirements of Part IV of Chapter 373, F.S. and 33 USC. §1344.

7.3 ESSENTIAL FISH HABITAT

As discussed in Section 5, wetlands and other surface waters present are entirely freshwater systems. No EFH is present within or in immediate proximity to the project limits.

7.4 COMMITMENTS AND IMPLEMENTATION MEASURES

The FDOT will coordinate the results of this NRE with the USFWS, NMFS, and FWC to receive concurrence from these agencies. Results of the NRE will also be coordinated with the USACE and FDEP.

Commitments

- The FDOT will implement the most current version of the USFWS' *Standard Protection Measures for the Eastern Indigo Snake* (USFWS 2013a).
- The FDOT will complete a wood stork suitable foraging habitat assessment during the project's Design phase to ensure that the proper amount of mitigation is procured for impacts to suitable wood stork foraging habitat in accordance with the wood stork consultation key.
- The FDOT will re-survey the project footprint for the presence of burrowing owls, Florida sandhill cranes and Southeast American kestrels during the nesting season and prior to construction commencement. If nesting activity is noted, coordination with the FWC will be completed as necessary.
- The FDOT will survey two known nests in cell towers within the study area during the bald eagle nesting season and prior to construction to determine if these nests are active eagle nests. If an active bald eagle nest is identified, no construction will commence within 660 feet of the nest during nesting season (October 1st to May 15th) unless authorized by the USFWS Office of Migratory Birds. FDOT Special Provision SP0070104-2 (Bald Eagle) will be implemented as applicable during project construction.
- The FDOT will conduct surveys for the stiff-leaved wild pine, plume polypody and other state-listed plant species during the project's design/environmental permitting phase and prior to construction. If listed plants are observed, the FDOT will continue coordination with the FDACS and Florida Native Plant Society or similar organization to facilitate the relocation of protected plants within the project footprint.

- To facilitate wildlife movement between the state-owned lands on both sides of the road, a wildlife feature will be provided. This feature will consist of 10-foot-wide shelves constructed at the seasonal high-water elevation on both sides of the Hillsborough River beneath the US 98 bridge.

Implementation Measures

- The FDOT will comply with the most current gopher tortoise permitting guidelines prior to project construction. This will include a gopher tortoise survey and gopher tortoise relocation as necessary.
- The FDOT will implement its Special Provision for the gopher tortoise (SP0070104-3) and Florida black bear (SP0070104-1) (FDOT 2021) during project construction.
- To protect water quality, the FDOT will implement erosion and sediment control BMPs, including a Stormwater Pollution Prevention Plan, during project construction.

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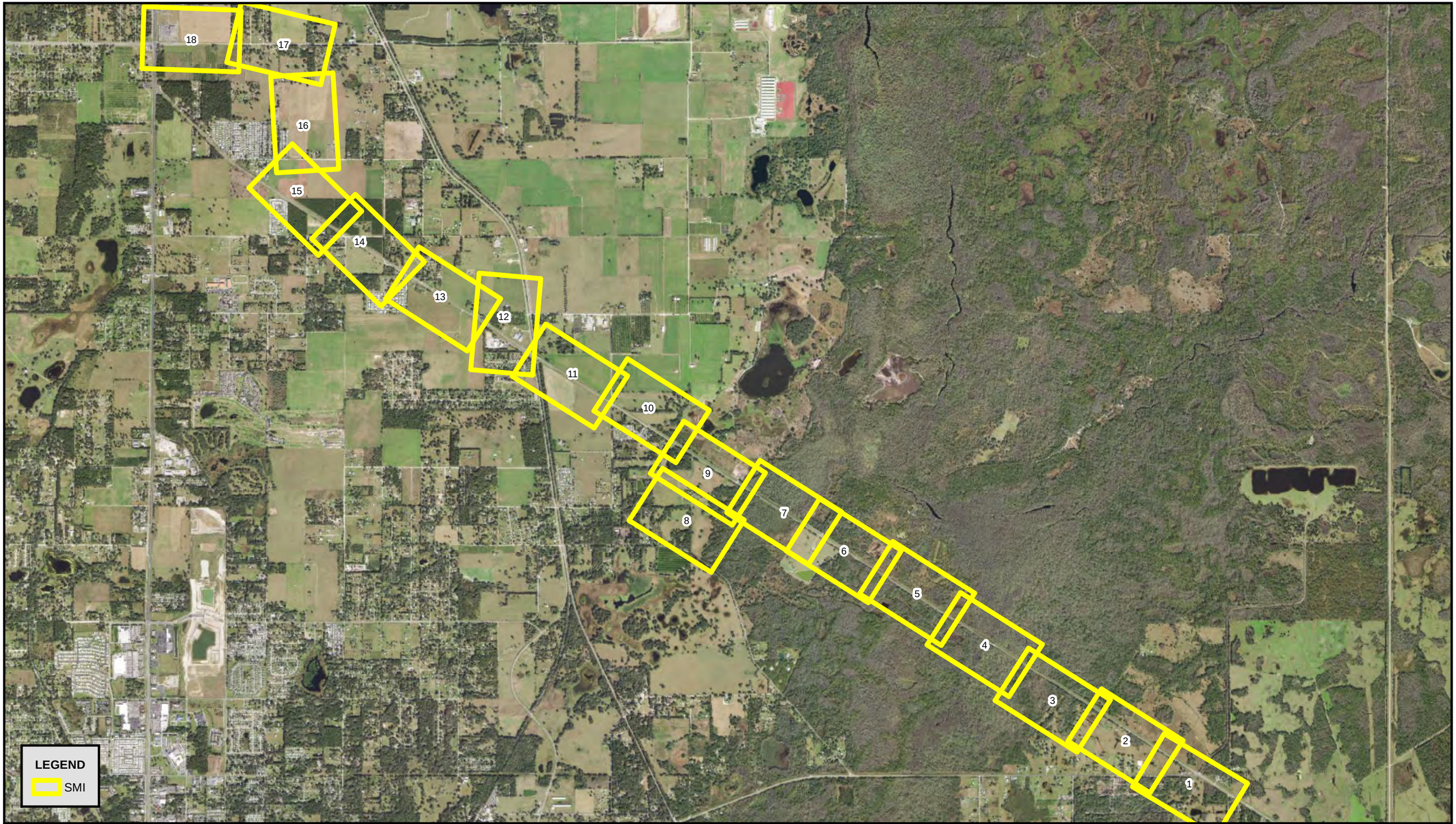
APPENDICES

APPENDIX A

Florida Land Use, Cover and Forms Classification System (FLUCFCS) Maps



FDOT

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Feet

1 inch = 3,000 feet

Sheet Index

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, FNAI 2021, RK&K 2021

N

FDOT

0 200 400

Feet

1 inch = 200 feet

FLUCFCS Maps

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, SWFWMD 2017, RK&K 2021

FDOT

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Feet

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FLUCFCS Maps

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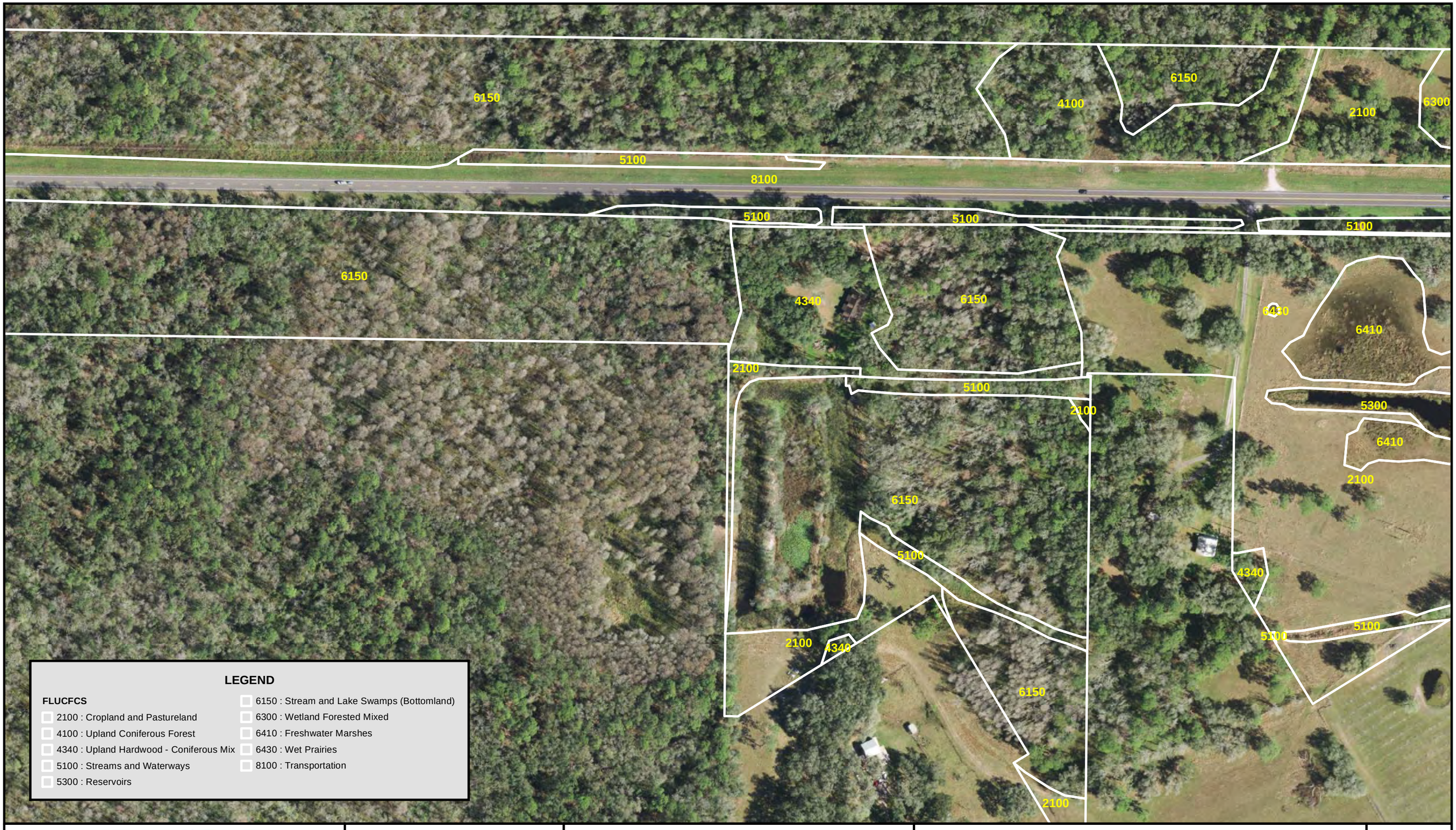
Pasco County, Florida

Sources: ESRI 2021, SWFWMD 2017, RK&K 2021



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Feet

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FLUCFCS Maps

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Pasco County, Florida

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FDOT

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Feet

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FLUCFCS Maps

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from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, SWFWMD 2017, RK&K 2021

N

LEGEND

FLUCFCS

- 4340 : Upland Hardwood - Coniferous Mix
- 5100 : Streams and Waterways
- 6150 : Stream and Lake Swamps (Bottomland)
- 6210 : Cypress
- 6300 : Wetland Forested Mixed
- 6410 : Freshwater Marshes
- 6430 : Wet Prairies
- 8100 : Transportation

FDOT

0 200 400

Feet

1 inch = 200 feet

FLUCFCS Maps

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, SWFWMD 2017, RK&K 2021

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FDOT

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FLUCFCS Maps

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FLUCFCS Maps

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Sources: ESRI 2021, SWFWMD 2017, RK&K 2021

FDOT

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FLUCFCS Maps

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FDOT

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Feet

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FLUCFCS Maps

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from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, SWFWMD 2017, RK&K 2021

LEGEND

FLUCFCS

- 1100 : Residential Low Density
- 1300 : Residential High Density
- 2100 : Cropland and Pastureland
- 4340 : Upland Hardwood - Coniferous Mix
- 4400 : Tree Plantation
- 5300 : Reservoirs
- 8100 : Transportation

0 200 400

Feet

1 inch = 200 feet

FLUCFCS Maps

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, SWFWMD 2017, RK&K 2021

FDOT

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FLUCFCS Maps

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FLUCFCS Maps

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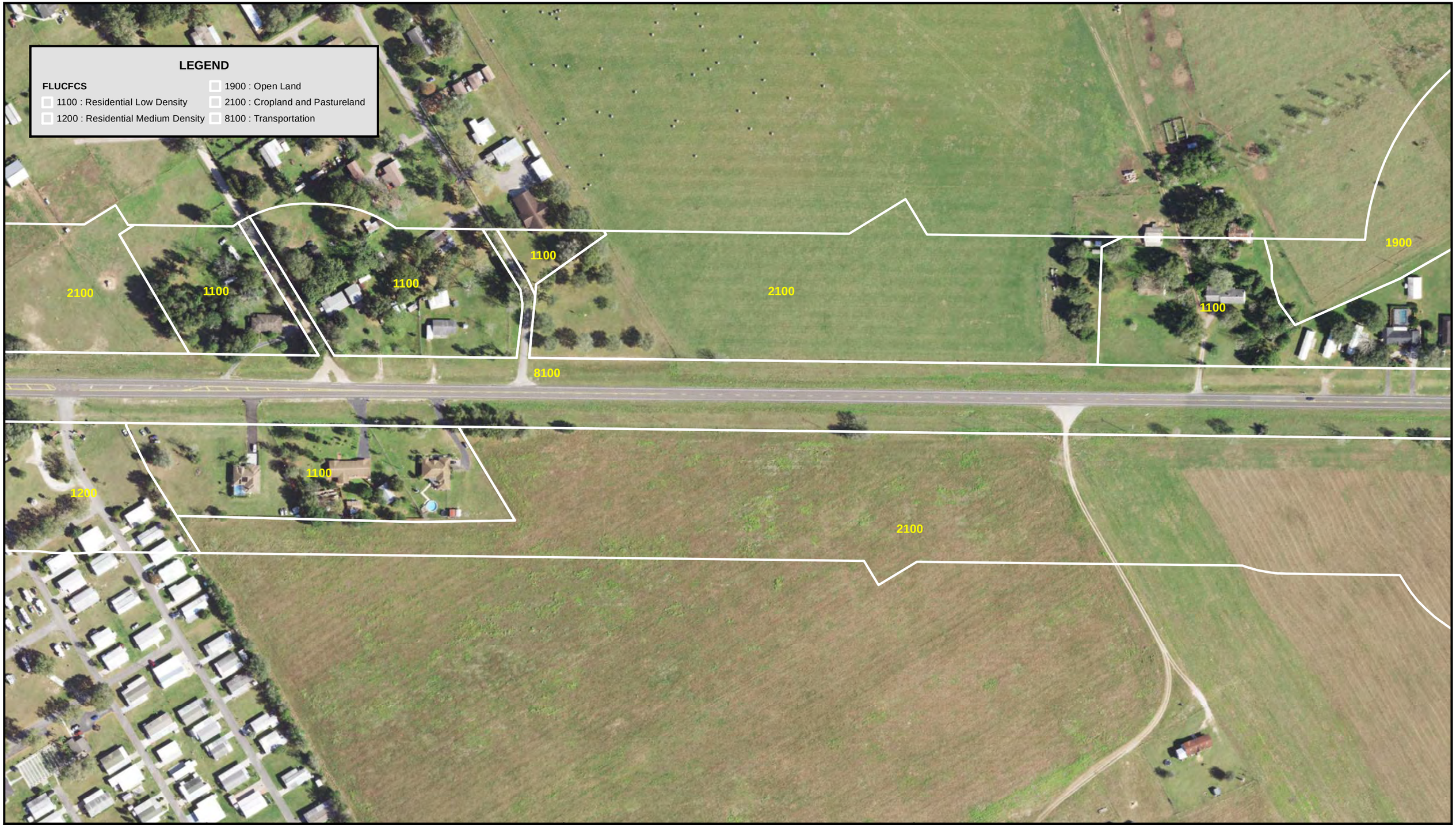
Pasco County, Florida

Sources: ESRI 2021, SWFWMD 2017, RK&K 2021



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FLUCFCS Maps

US 98/SR 35/SR 700
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FDOT

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FLUCFCS Maps

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FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, SWFWMD 2017, RK&K 2021

LEGEND

FLUCFCS

- 1100 : Residential Low Density
- 1300 : Residential High Density
- 2100 : Cropland and Pastureland
- 3200 : Shrub and Brushland
- 4340 : Upland Hardwood - Coniferous Mix
- 4400 : Tree Plantation
- 8100 : Transportation

FDOT

0 200 400

Feet

1 inch = 200 feet

FLUCFCS Maps

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, SWFWMD 2017, RK&K 2021

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Sources: ESRI 2021, SWFWMD 2017, RK&K 2021

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FLUCFCS Maps

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from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, SWFWMD 2017, RK&K 2021

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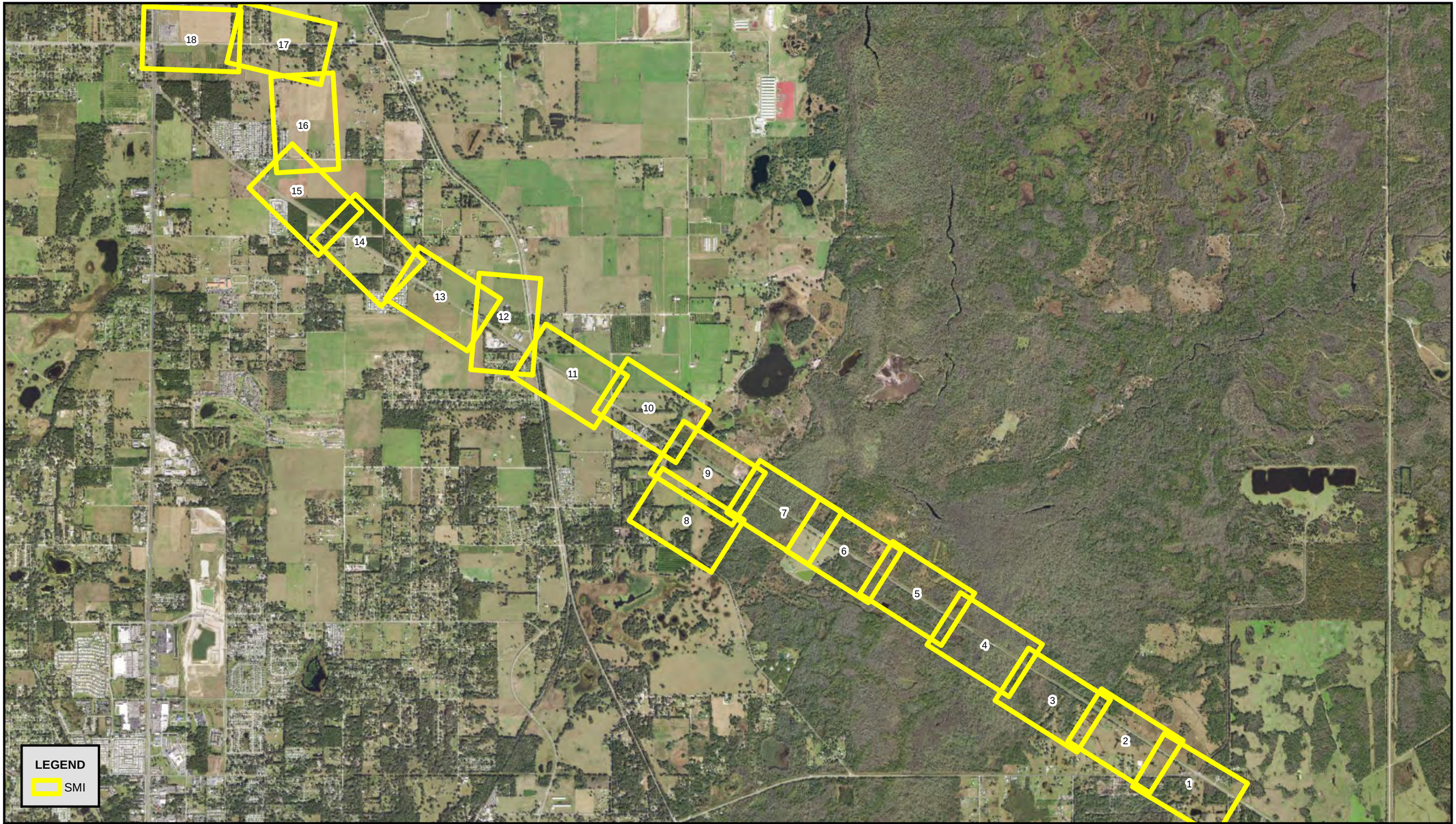
APPENDIX B

Natural Resource Conservation Service (NRCS) Soils Map



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Pasco County, Florida

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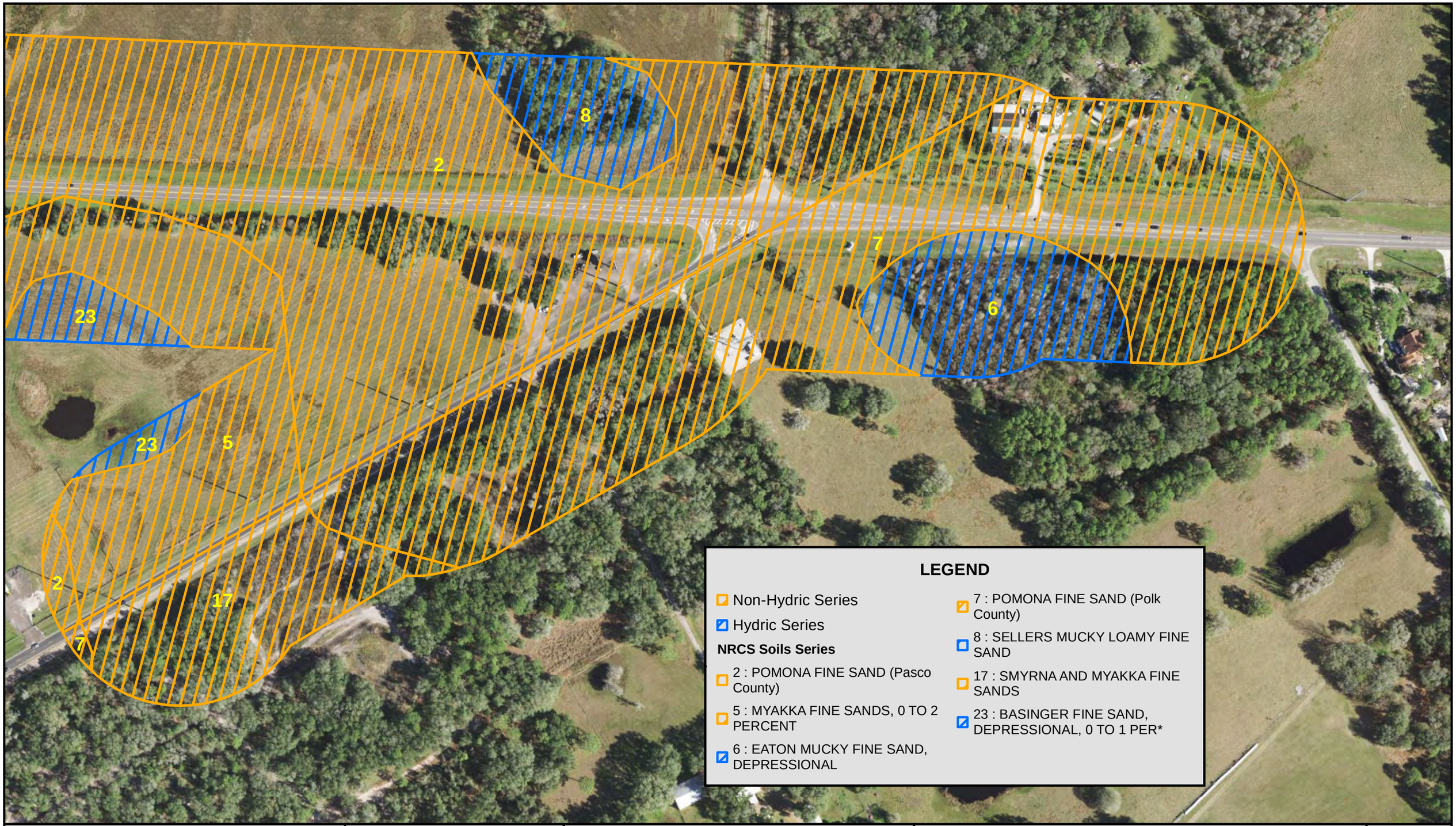


LEGEND

- Non-Hydric Series
- Hydric Series

NRCS Soils Series

- 2 : POMONA FINE SAND (Pasco County)
- 5 : MYAKKA FINE SANDS, 0 TO 2 PERCENT
- 6 : EATON MUCKY FINE SAND, DEPRESSIONAL
- 7 : POMONA FINE SAND (Polk County)
- 8 : SELLERS MUCKY LOAMY FINE SAND
- 17 : SMYRNA AND MYAKKA FINE SANDS
- 23 : BASINGER FINE SAND, DEPRESSIONAL, 0 TO 1 PER*

FDOT

0 200 400

Feet

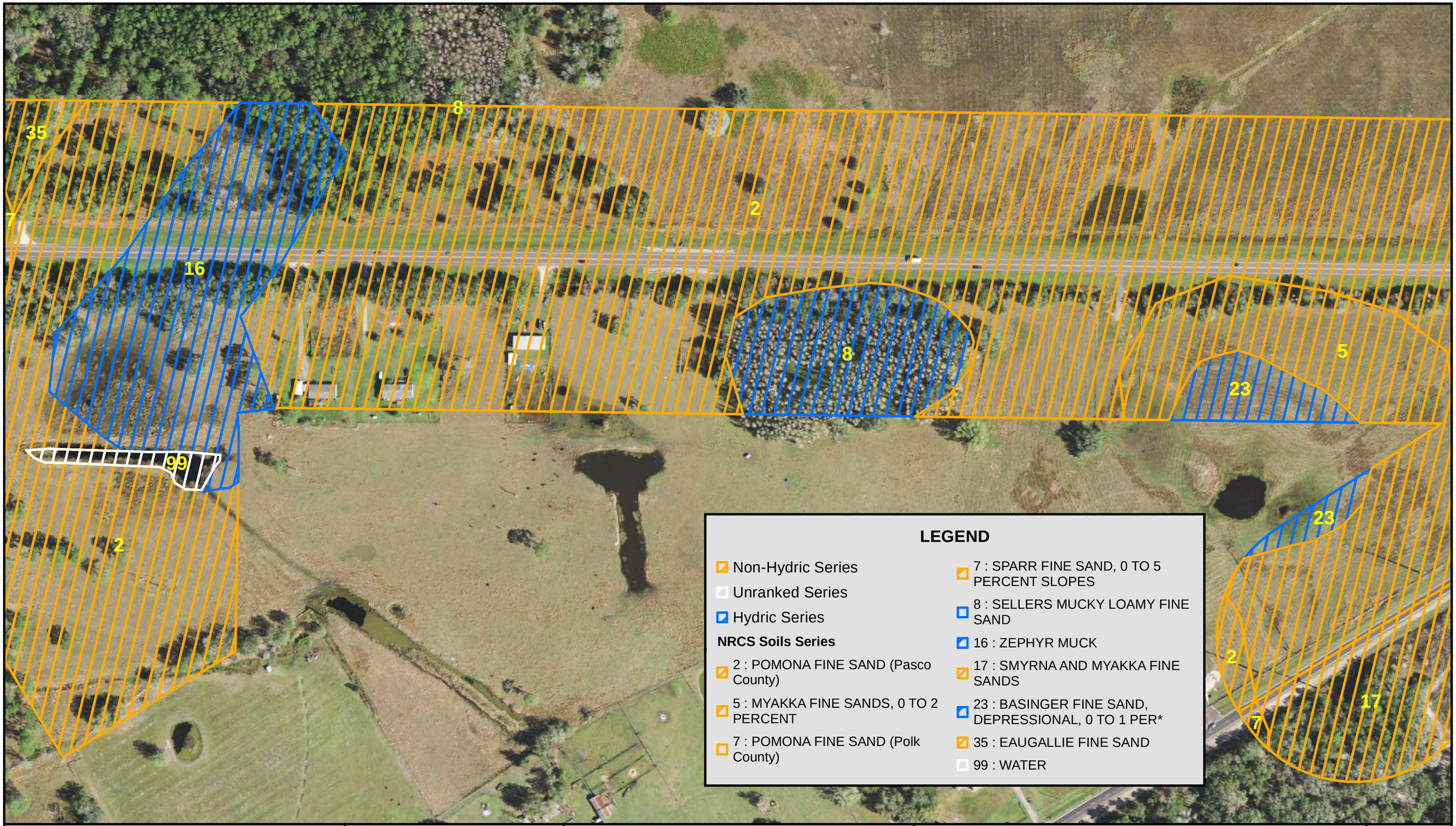
1 inch = 200 feet

NRCS Soils Maps

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, NRCS 2018, 2021

N



LEGEND

- Non-Hydric Series
- Unranked Series
- Hydric Series

NRCS Soils Series

- 2 : POMONA FINE SAND (Pasco County)
- 5 : MYAKKA FINE SANDS, 0 TO 2 PERCENT
- 7 : POMONA FINE SAND (Polk County)
- 7 : SPARR FINE SAND, 0 TO 5 PERCENT SLOPES
- 8 : SELLERS MUCKY LOAMY FINE SAND
- 16 : ZEPHYR MUCK
- 17 : SMYRNA AND MYAKKA FINE SANDS
- 23 : BASINGER FINE SAND, DEPRESSIONAL, 0 TO 1 PER*
- 35 : EAUGALLIE FINE SAND
- 99 : WATER

FDOT

0 200 400

Feet

1 inch = 200 feet

NRCS Soils Maps

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, NRCS 2018, 2021

LEGEND

- Non-Hydric Series
- Unranked Series
- Hydric Series

NRCS Soils Series

- 2 : POMONA FINE SAND (Pasco County)
- 7 : SPARR FINE SAND, 0 TO 5 PERCENT SLOPES
- 16 : ZEPHYR MUCK
- 35 : EAUGALLIE FINE SAND
- 39 : CHOBEE SOILS, FREQUENTLY FLOODED
- 99 : WATER

FDOT

0 200 400

Feet

1 inch = 200 feet

NRCS Soils Maps

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, NRCS 2018, 2021

N

LEGEND

- Non-Hydric Series
- Unranked Series
- Hydric Series

NRCS Soils Series

- 2 : POMONA FINE SAND (Pasco County)
- 10 : WABASSO FINE SAND
- 16 : ZEPHYR MUCK
- 28 : PITS
- 39 : CHOBEE SOILS, FREQUENTLY FLOODED

FDOT

0 200 400

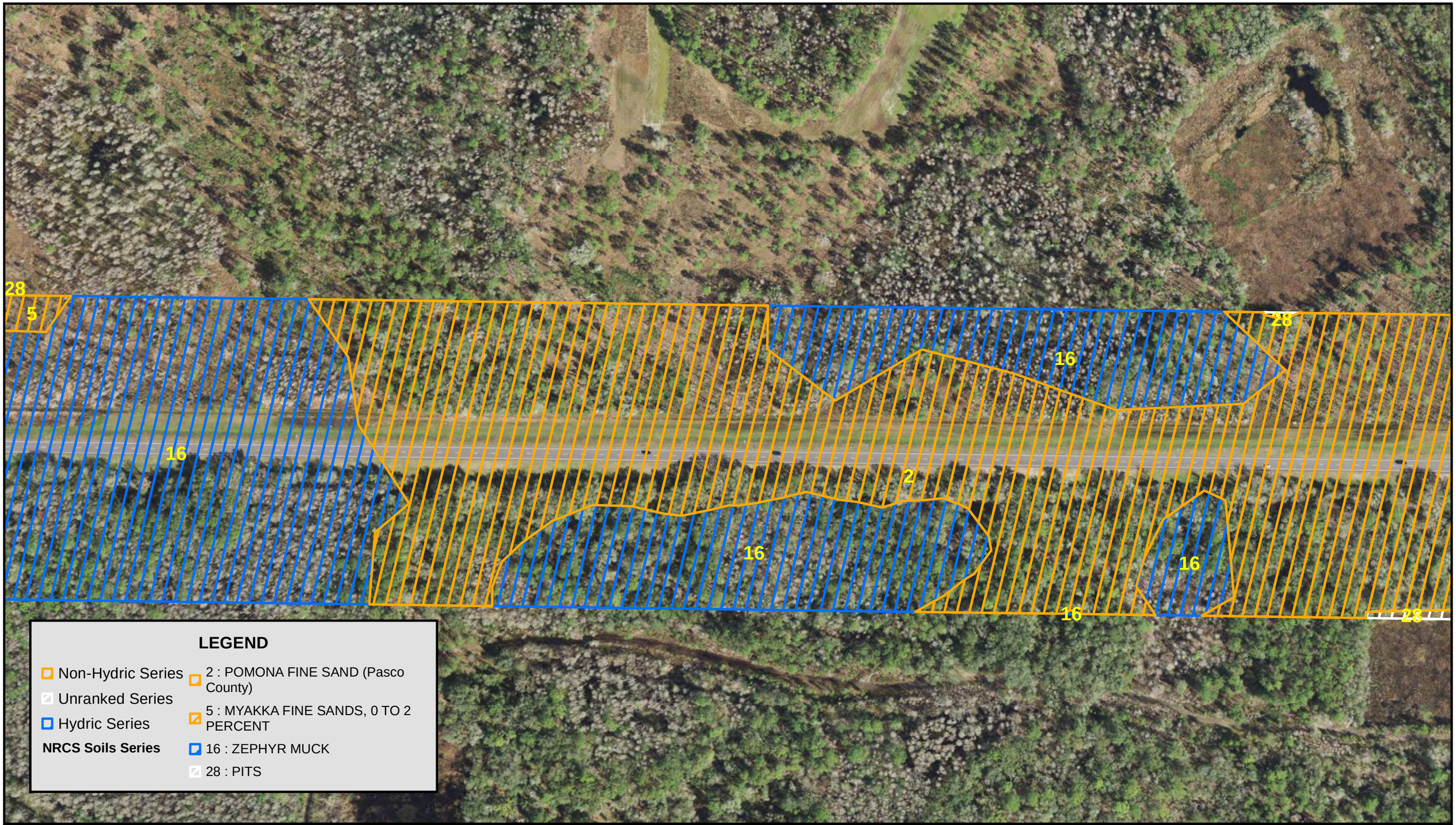
Feet

1 inch = 200 feet

NRCS Soils Maps

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, NRCS 2018, 2021



LEGEND

- Non-Hydric Series
- Unranked Series
- Hydric Series

NRCS Soils Series

- 2 : POMONA FINE SAND (Pasco County)
- 5 : MYAKKA FINE SANDS, 0 TO 2 PERCENT
- 16 : ZEPHYR MUCK
- 28 : PITS

FDOT

0 200 400

Feet

1 inch = 200 feet

NRCS Soils Maps

US 98/SR 35/SR 700
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NRCS Soils Maps

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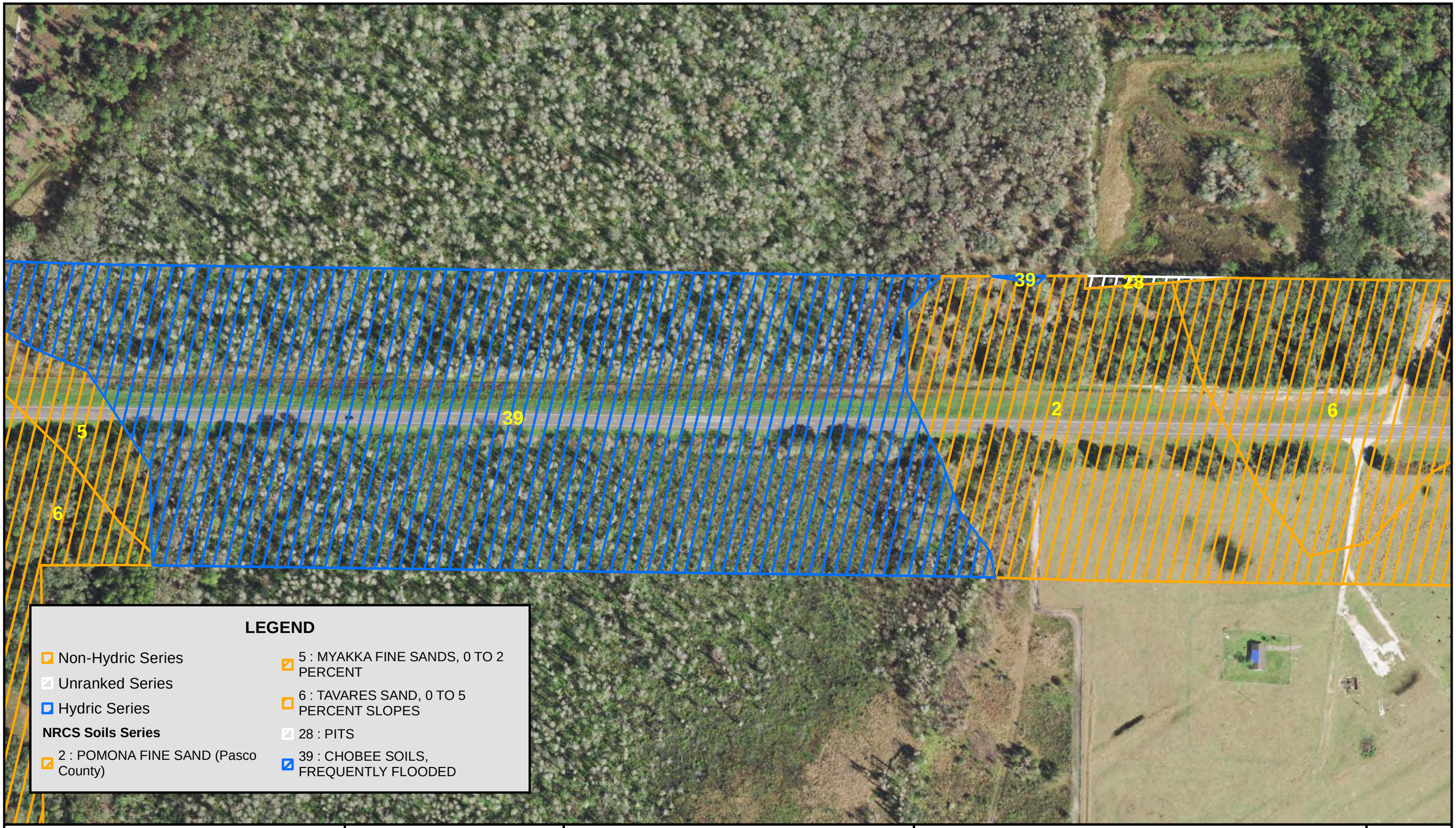

LEGEND

- Non-Hydric Series
- Unranked Series
- Hydric Series

NRCS Soils Series

- 2 : POMONA FINE SAND (Pasco County)
- 5 : MYAKKA FINE SANDS, 0 TO 2 PERCENT
- 6 : TAVARES SAND, 0 TO 5 PERCENT SLOPES
- 28 : PITS
- 39 : CHOBEE SOILS, FREQUENTLY FLOODED

FDOT

0 200 400
Feet
1 inch = 200 feet

NRCS Soils Maps

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, NRCS 2018, 2021

N

LEGEND

- Non-Hydric Series
- Hydric Series

NRCS Soils Series

- 2 : POMONA FINE SAND (Pasco County)
- 6 : TAVARES SAND, 0 TO 5 PERCENT SLOPES
- 32 : LAKE FINE SAND, 0 TO 5 PERCENT SLOPES
- 39 : CHOBEE SOILS, FREQUENTLY FLOODED
- 43 : ARREDONDO FINE SAND, 0 TO 5 PERCENT SLOPES
- 72 : ORLANDO FINE SAND, 0 TO 5 PERCENT SLOPES

FDOT

0 200 400

Feet

1 inch = 200 feet

NRCS Soils Maps

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, NRCS 2018, 2021

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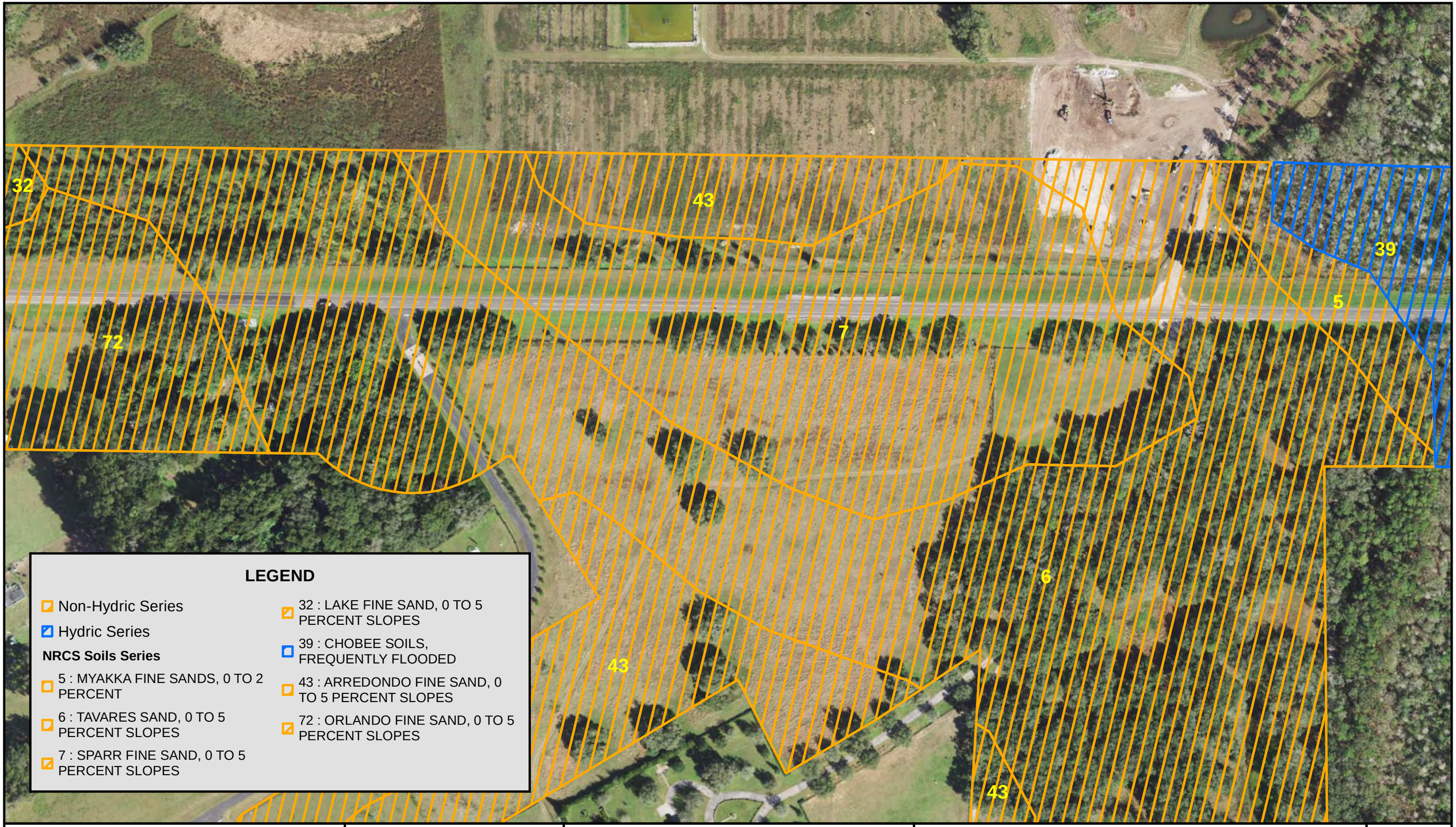

LEGEND

- Non-Hydric Series
- Hydric Series

NRCS Soils Series

- 5 : MYAKKA FINE SANDS, 0 TO 2 PERCENT
- 6 : TAVARES SAND, 0 TO 5 PERCENT SLOPES
- 7 : SPARR FINE SAND, 0 TO 5 PERCENT SLOPES
- 32 : LAKE FINE SAND, 0 TO 5 PERCENT SLOPES
- 39 : CHOBEE SOILS, FREQUENTLY FLOODED
- 43 : ARREDONDO FINE SAND, 0 TO 5 PERCENT SLOPES
- 72 : ORLANDO FINE SAND, 0 TO 5 PERCENT SLOPES

FDOT

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Feet

1 inch = 200 feet

NRCS Soils Maps

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, NRCS 2018, 2021

FDOT

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Feet
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NRCS Soils Maps

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, NRCS 2018, 2021

LEGEND

Non-Hydric Series

NRCS Soils Series

32 : LAKE FINE SAND, 0 TO 5 PERCENT SLOPES

32

FDOT

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Feet

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NRCS Soils Maps

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, NRCS 2018, 2021

FDOT

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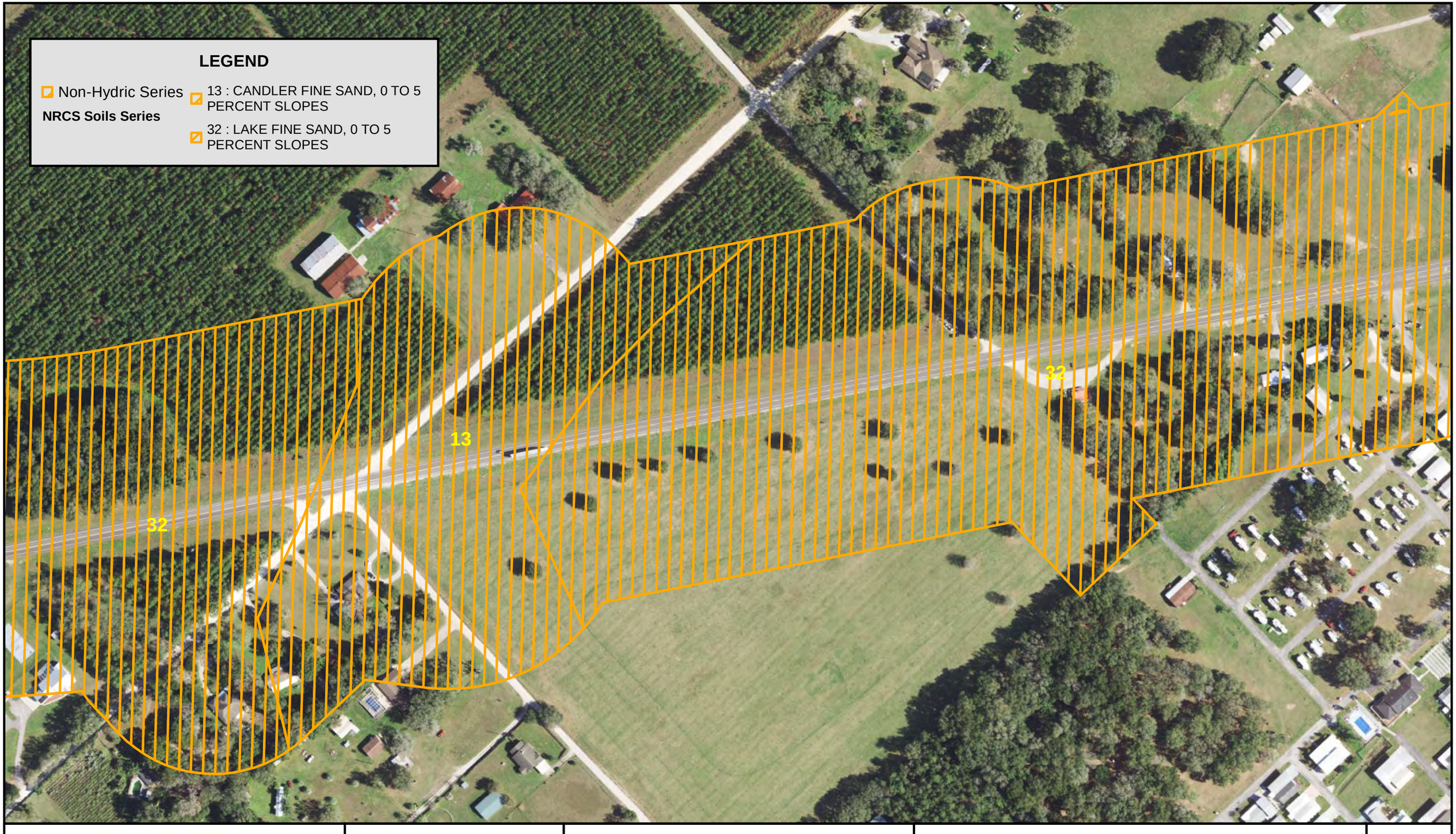

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NRCS Soils Maps

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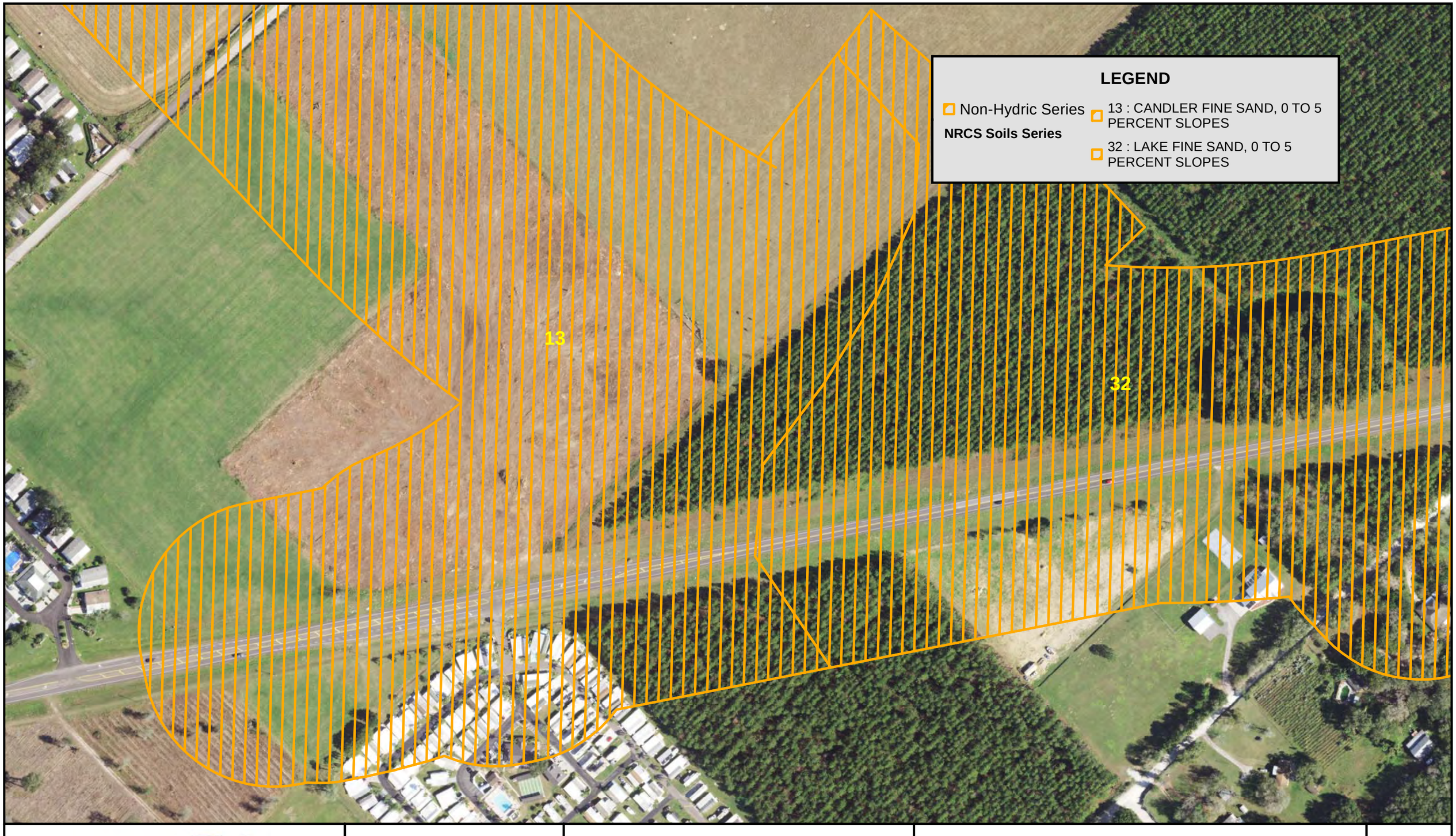
Pasco County, Florida

Sources: ESRI 2021, NRCS 2018, 2021



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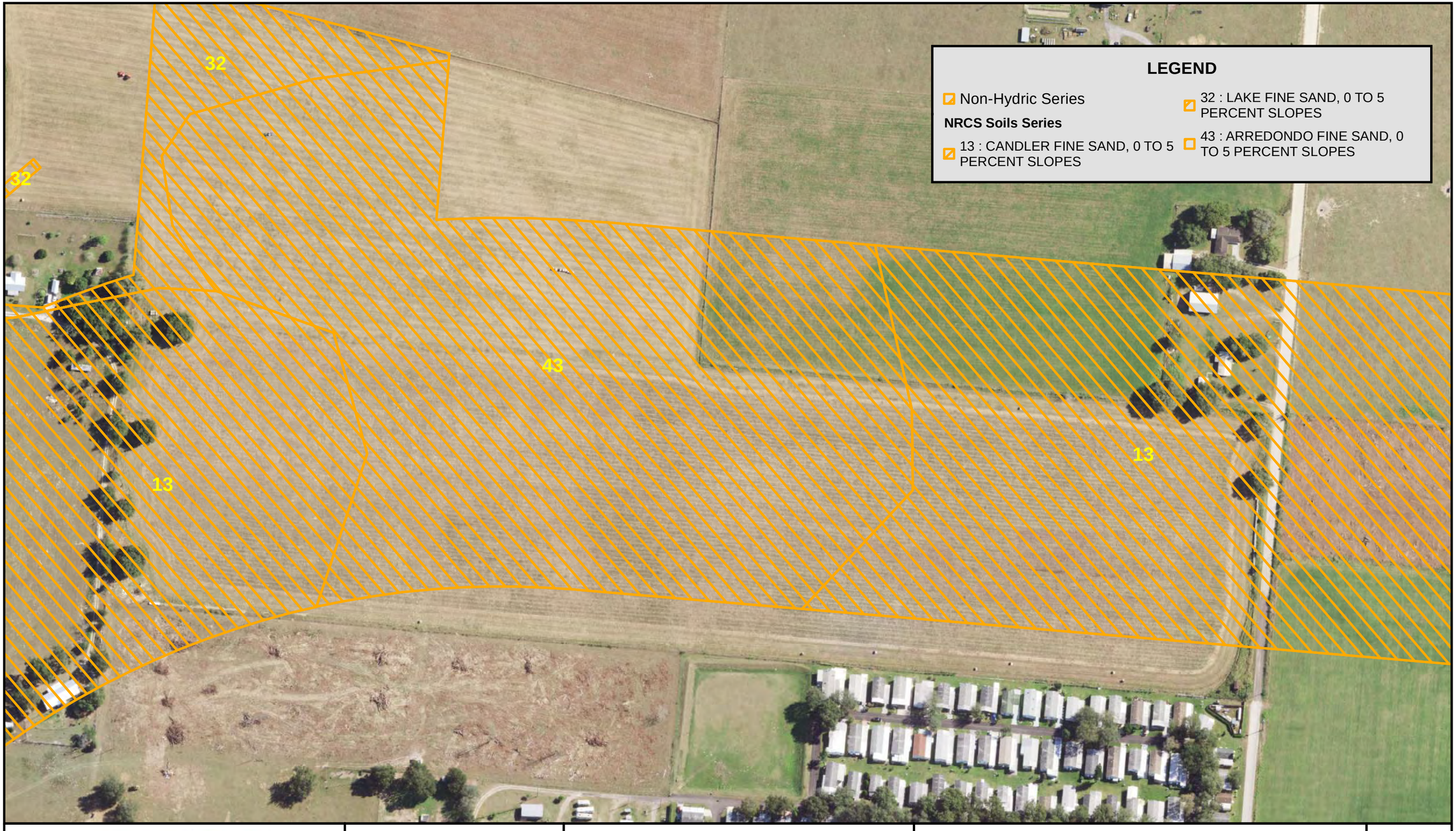

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NRCS Soils Maps

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Pasco County, Florida

Sources: ESRI 2021, NRCS 2018, 2021

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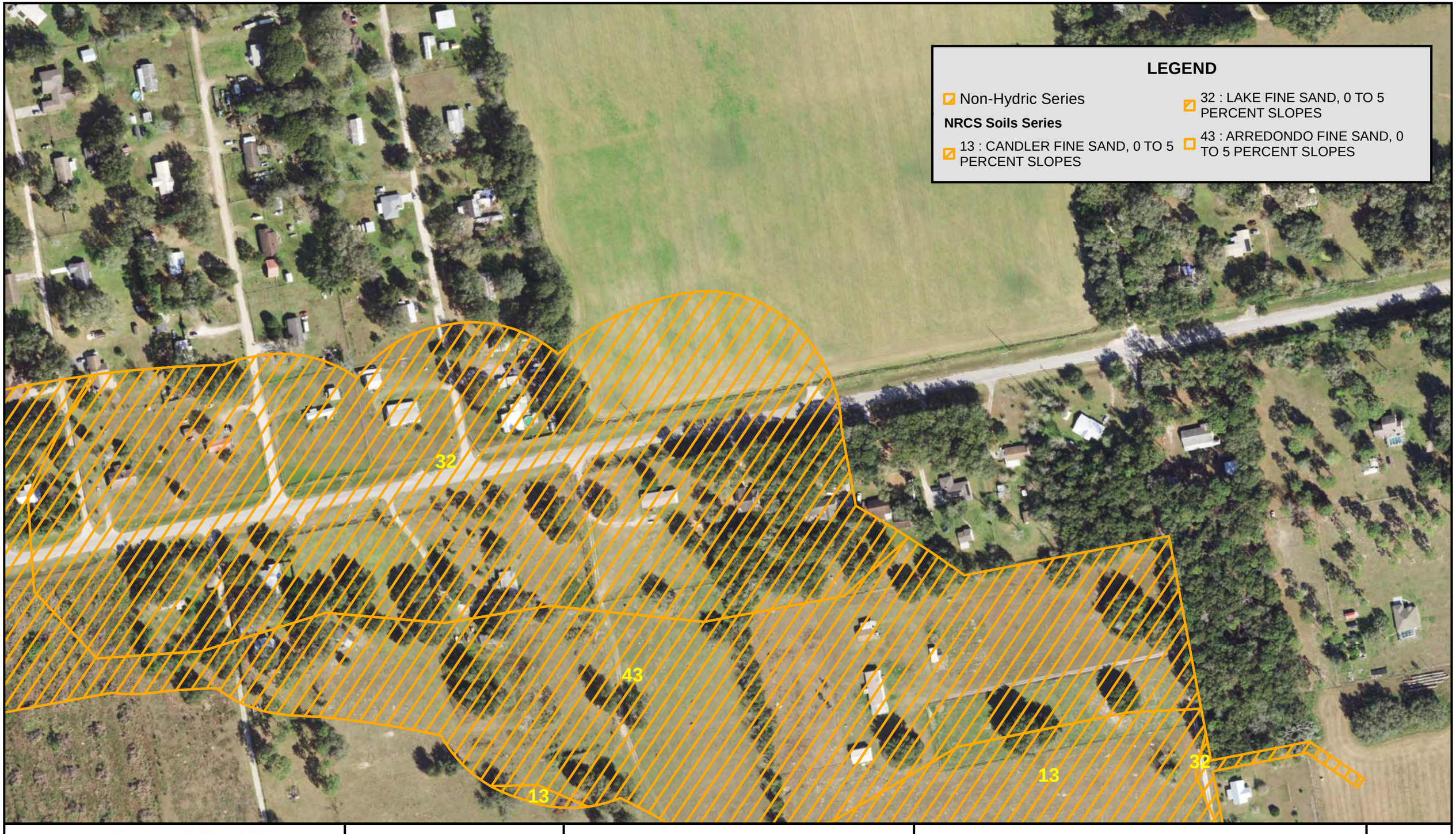

FDOT

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Feet

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NRCS Soils Maps

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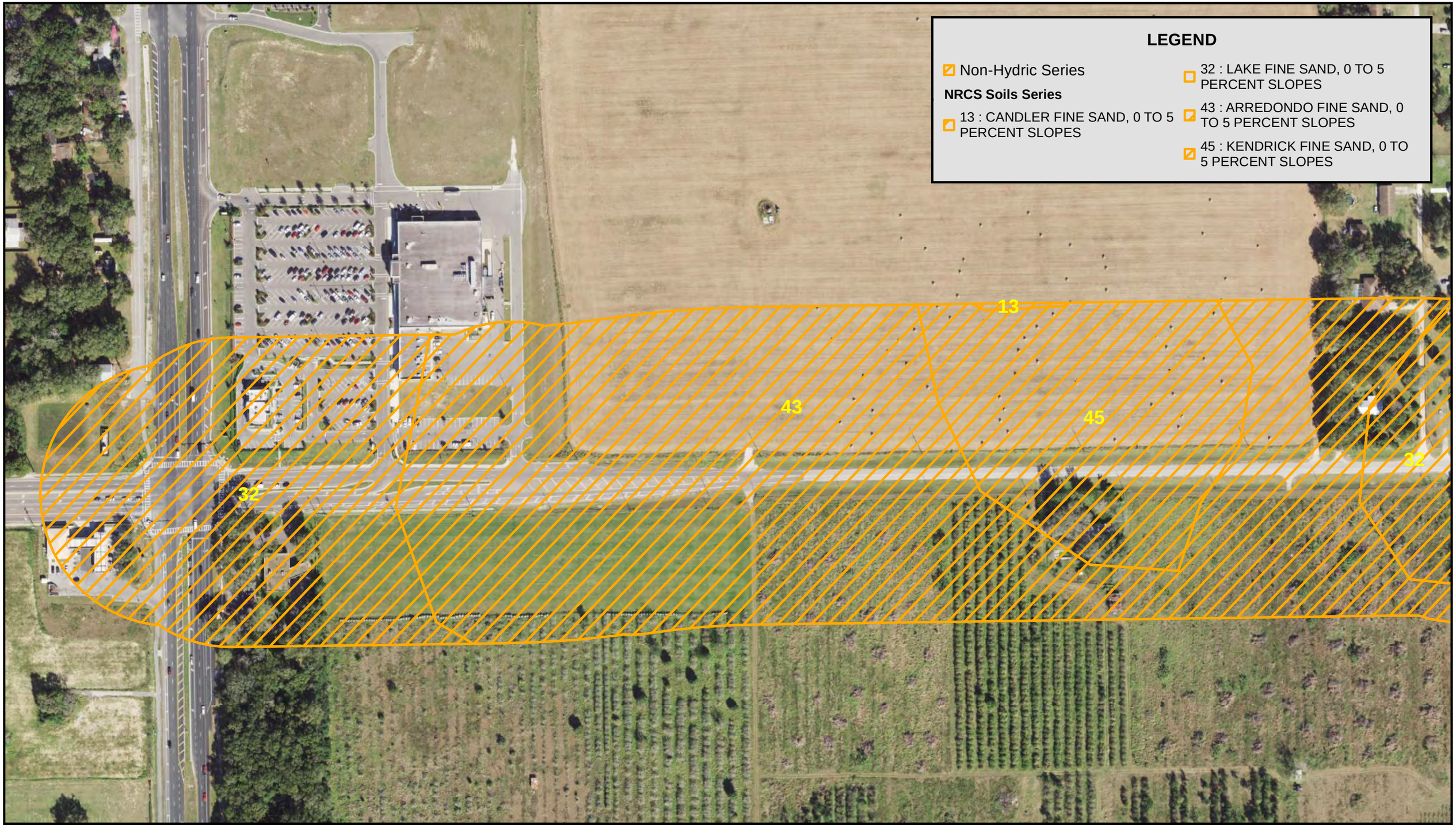

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NRCS Soils Maps

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, NRCS 2018, 2021

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APPENDIX C

FNAI Standard Data Report

FLORIDA
Natural Areas
INVENTORY

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

August 10, 2021

Brett Berube
RK&K
14055 Riveredge Drive, Suite 130
Tampa, FL 33637

Dear Mr. Berube,

Thank you for requesting information from the Florida Natural Areas Inventory (FNAI). At your request we have produced the following report for your project area.

The purpose of this Standard Data Report is to provide objective scientific information on natural resources located in the vicinity of a site of interest, in order to inform those involved in project planning and evaluation. This Report makes no determination of the suitability of a proposed project for this location, or the potential impacts of the project on natural resources in the area.

Project: US 98 PD&E Study

Date Received: 8/3/2021

Location: Pasco County

Element Occurrences

A search of our maps and database indicates that we currently have several element occurrences mapped in the vicinity of the study area (see enclosed map and element occurrence table). Please be advised that a lack of element occurrences in the FNAI database is not a sufficient indication of the absence of rare or endangered species on a site.

The element occurrences data layer includes occurrences of rare species and natural communities. The map legend indicates that some element occurrences occur in the general vicinity of the label point. This may be due to lack of precision of the source data, or an element that occurs over an extended area (such as a wide ranging species or large natural community). For animals and plants, element occurrences generally refer to more than a casual sighting; they usually indicate a viable population of the species. Note that some element occurrences represent historically documented observations which may no longer be extant. Extirpated element occurrences will be marked with an 'X' following the occurrence label on the enclosed map.

Several of the species and natural communities tracked by the Inventory are considered ***data sensitive****. Occurrence records for these elements contain information that we consider sensitive due to collection pressures, extreme rarity, or at the request of the source of the information. The Element Occurrence Record has been labeled "Data Sensitive." We request that you not publish or release specific locational data about these species or communities without consent from the Inventory. If you have any questions concerning this please do not hesitate to call.*

Likely and Potential Rare Species

In addition to documented occurrences, other rare species and natural communities may be identified on or near the site based on habitat models and species range models (see enclosed Biodiversity

Florida Resources
and Environmental
Analysis Center

Institute of Science
and Public Affairs

The Florida State University

Matrix Report). These species should be taken into consideration in field surveys, land management, and impact avoidance and mitigation.

FNAI habitat models indicate areas, which based on land cover type, offer suitable habitat for one or more rare species that is known to occur in the vicinity. Habitat models have been developed for approximately 300 of the rarest species tracked by the Inventory, including all federally listed species.

FNAI species range models indicate areas that are within the known or predicted range of a species, based on climate variables, soils, vegetation, and/or slope. Species range models have been developed for approximately 340 species, including all federally listed species.

The FNAI Biodiversity Matrix Geodatabase compiles Documented, Likely, and Potential species and natural communities for each square mile Matrix Unit statewide.

CLIP

The enclosed map shows natural resource conservation priorities based on the Critical Lands and Waters Identification Project. CLIP is based on many of the same natural resource data developed for the Florida Forever Conservation Needs Assessment, but provides an overall picture of conservation priorities across different resource categories, including biodiversity, landscapes, surface waters, and aggregated CLIP priorities (that combine the individual resource categories). CLIP is also based primarily on remote sensed data and is not intended to be the definitive authority on natural resources on a site.

For more information on CLIP, visit https://www.fnai.org/services/clip.

Florida Scrub-jay Survey – U.S. Fish and Wildlife Service

This survey was conducted by staff and associates of the Archbold Biological Station from 1992 to 1996. An attempt was made to record all scrub-jay (*Aphelocoma coerulescens*) groups, although most federal lands were not officially surveyed. Each map point represents one or more groups.

This data layer indicates that there are potential scrub-jay populations on or very near your site. For additional information:

Fitzpatrick, J.W., B. Pranty, and B. Stith, 1994, Florida scrub jay statewide map, 1992-1993. U. S. Fish and Wildlife Service Report, Cooperative Agreement no. 14-16-004-91-950.

Managed Areas

Portions of the site appear to be located within the Upper Hillsborough, managed by the Southwest Florida Water Management District, within the Green Swamp managed by Southwest Florida Water Management District and within the SWFWMD Green Swamp Conservation Easements managed by Southwest Florida Water Management District,

The Managed Areas data layer shows public and privately managed conservation lands throughout the state. Federal, state, local, and privately managed conservation lands are included.

The Inventory always recommends that professionals familiar with Florida's flora and fauna conduct a site-specific survey to determine the current presence or absence of rare, threatened, or endangered species.

Please visit www.fnai.org/trackinglist.cfm for county or statewide element occurrence distributions and links to more element information.

The database maintained by the Florida Natural Areas Inventory is the single most comprehensive source of information available on the locations of rare species and other significant ecological resources. However, the data are not always based on comprehensive or site-specific field surveys.

Therefore this information should not be regarded as a final statement on the biological resources of the site being considered, nor should it be substituted for on-site surveys. Inventory data are designed for the purposes of conservation planning and scientific research, and are not intended for use as the primary criteria for regulatory decisions.

Information provided by this database may not be published without prior written notification to the Florida Natural Areas Inventory, and the Inventory must be credited as an information source in these publications. **The maps contain sensitive environmental information, please do not distribute or publish without prior consent from FNAI.** FNAI data may not be resold for profit.

Thank you for your use of FNAI services. An invoice will be mailed separately. If I can be of further assistance, please contact me at (850) 224-8207 or at kbrinegar@fnai.fsu.edu.

Sincerely,

Kerri Brinegar

Kerri Brinegar
GIS / Data Services

Encl

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FLORIDA Natural Areas INVENTORY

US 98 PD&E Study

Site boundaries are approximate.

Pasco County

Element Occurrences

- Animals
- Plants
- Communities
- Other
- Data Sensitive
- Point Indicates General Vicinity of Element
- U.S. Fish & Wildlife Service Scrub Jay Survey 1992-96

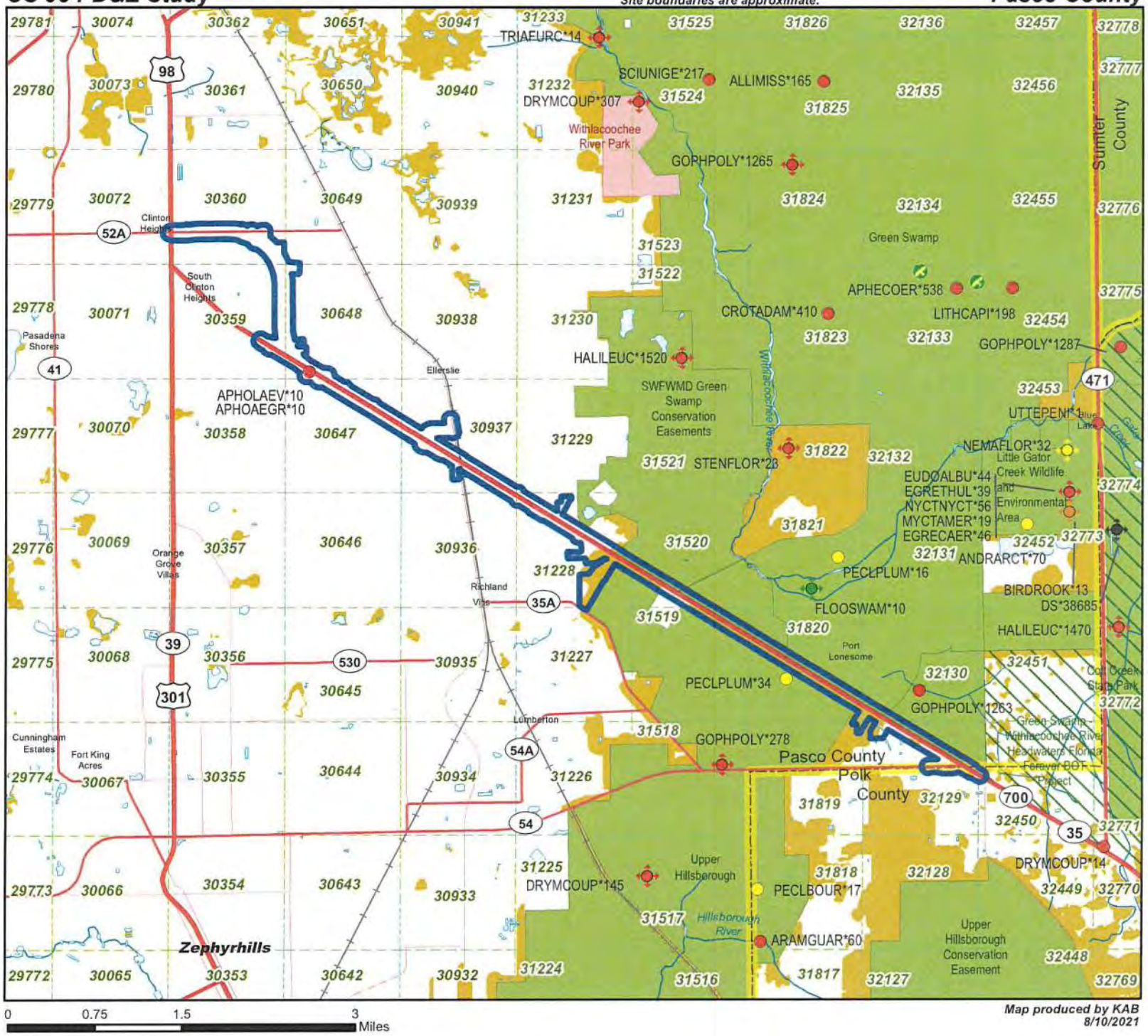
Conservation Lands

- Federal
- State
- Local
- Private
- State Aquatic Preserves

Land Acquisition Projects

- Florida Forever Board of Trustees Projects

- FNAI Rare Species Habitat
- FNAI Biodiversity Matrix Square Mile Units
- County Boundary
- Roads
- Water



0 0.75 1.5 3 Miles

Map produced by KAB
8/10/2021

NOTE
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US 98 PD&E Study

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FLORIDA Natural Areas INVENTORY

CLIP v4.0 Resource Priorities

Biodiversity Resource Category
- Priority 1 - highest
- Priority 2
- Priority 3
- Priority 4
- Priority 5

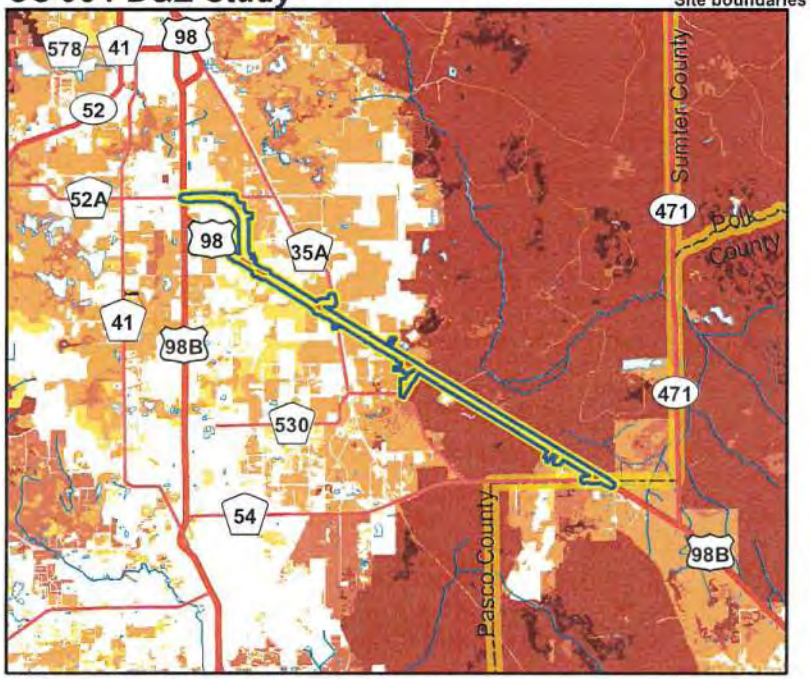
Landscape Resource Category
- Priority 1 - highest
- Priority 2
- Priority 3
- Priority 4
- Priority 5

Surface Water Resource Category
- Priority 1 - highest
- Priority 2
- Priority 3
- Priority 4
- Priority 5

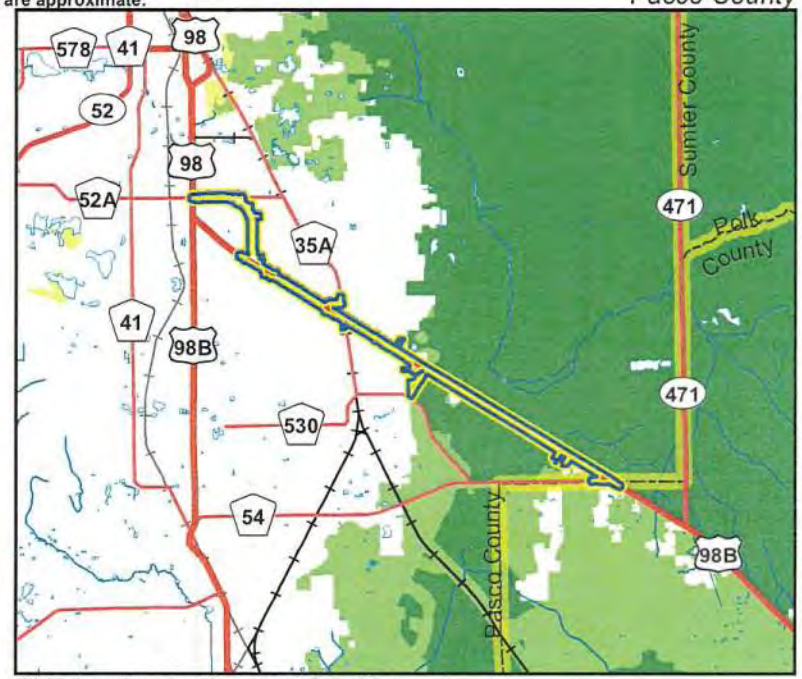
Aggregated CLIP Priorities
- Priority 1 - highest
- Priority 2
- Priority 3
- Priority 4
- Priority 5

Site Boundary

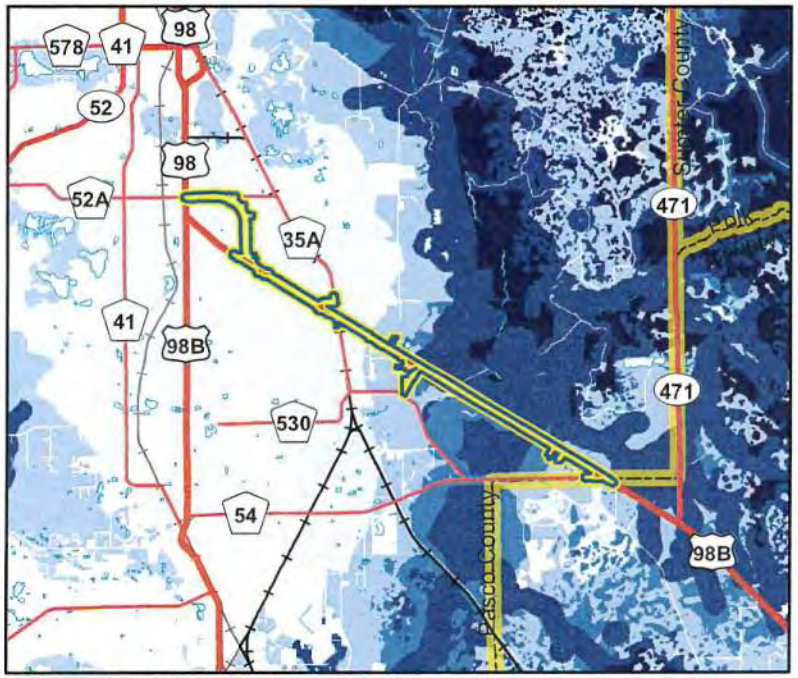
Map should not be interpreted without accompanying documents.



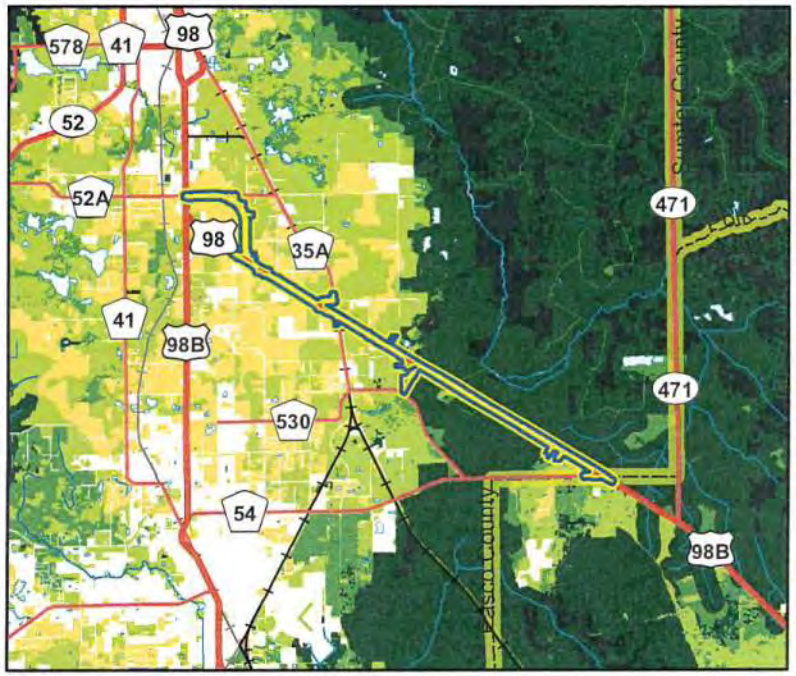
CLIP Biodiversity Resource Priorities



CLIP Landscape Resource Priorities



CLIP Surface Water Resource Priorities



CLIP Aggregated Resource Priorities

0 2 4 8 12 Miles

Map produced by KAB
8/10/2021

Critical Lands and Waters Identification Project (CLIP) is a cooperative effort between the FSU Florida Natural Areas Inventory, UF Center for Landscape Conservation Planning, and FL Fish & Wildlife Conservation Commission, with additional funding from FL Dept of Environmental Protection and US Fish & Wildlife Service.

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FLORIDA Natural Areas INVENTORY

FNAI ELEMENT OCCURRENCE REPORT on or near

US 98 PD&E Study

Map Label	Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing	Observation Date	Description	EO Comments
APHOAEGR*10	*Aphodius aegrotus*	Small Pocket Gopher Aphodius Beetle	G3G4	S3?	N	N	1997-12-03 -- 1997-12-23	1997-12-23: No information given (U06SKE01FLUS).	1997-12-23: One specimen was collected from 1997-12-03 to 1997-12-23, most likely at light or in a malt and dung-baited pitfall trap in a pocket gopher burrow (U06SKE01FLUS, A01SKE02FLUS).
APHOLAEV*10	*Aphodius laevigatus*	Large Pocket Gopher Aphodius Beetle	G3G4	S3?	N	N	1997-12-03 -- 1997-12-23	1997-12-23: No information given (U06SKE01FLUS).	1997-12-23: A total of 21 specimens were collected from 1997-12-02 to 1997-12-23, most likely at light or in malt and dung-baited pitfall traps set in pocket gopher burrows (U06SKE01FLUS, A01SKE02FLUS).
DRYMCOUP*14	*Drymarchon couperi*	Eastern Indigo Snake	G3	S2?	T	FT	1983-12	No general description given	1983-12: SPECIMEN OBSERVED DEAD ON ROAD BY J. COX (PNDCOX02FLUS).
FLOOSWAM*10	Floodplain swamp		G4	S4	N	N	1999	IMPRESSIVE CYPRESS TREES.	1999: Update to last obs date was based on interpretation of aerial photography (previous value was 1968) (U05FNA02FLUS).
GOPHPOLY*1263	*Gopherus polyphemus*	Gopher Tortoise	G3	S3	C	ST	2008-07-16	2008-07-16: actively grazed improved pasture (PNDDIA02FLUS).	2008-07-16: single burrow observed in actively grazed improved pasture (PNDDIA02FLUS).
GOPHPOLY*1265	*Gopherus polyphemus*	Gopher Tortoise	G3	S3	C	ST	2018	2018: Primary habitats surveyed included mesic flatwoods and sandhill, other habitats surveyed included xeric hammock, mesic hammock, scrubby flatwoods, pine plantation, ruderal and pasture-improved (F18FNA11FLUS). 2009: Hog Back Ridge site is good quality sandhill with small inclusions of scrub and scrubby flatwoods (F09FNA13FLUS). 2008-08-26: natural communities and disturbed sites (PNDDIA02FLUS).	2018 FNAI LTDS survey: 343 burrows scoped; 118 occupied, 219 unoocupied, 6 undermined. 82,911.4 m of transect surveyed. Estimated population of 2,472 (F18FNA11FLUS). 2009: FNAI survey of 74 acres in southern portion of this occurrence, known as Hog Back Ridge, resulted in gps'd locations for 157 burrows, including 31 active, 72 inactive and 54 abandoned burrows (F09FNA13FLUS). 2008-08-26: multiple observations across the occurrence, include sightings of 15 live tortoises, ranging from a single 5 cm juvenile to adult animals, plus 123 burrows in various sizes; also see individual sources for data regarding observations of tortoises and their burrows (PNDDIA02FLUS).
GOPHPOLY*278	*Gopherus polyphemus*	Gopher Tortoise	G3	S3	C	ST	1983-02-07	No general description given	1983-02-07: Species occurrence noted here in Diemer's unpublished map set (U86DIE01FLUS).

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FLORIDA Natural Areas INVENTORY

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US 98 PD&E Study

Map Label	Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing	Observation Date	Description	EO Comments
PECLPLUM*16	*Pecluma plumula*	plume polypody	G5	S2	N	E	2008-06-19	2008-06-19: In hydric hammock with many tall Quercus virginiana, light disturbance near one source feature from road otherwise intact (PNDDIA02FLUS).	2008-06-19: 100-300 plants found throughout hydric hammockon tall Quercus virginiana with mosses, lichens, Tillandsia bartramii, and Pleopeltis polypodioides ssp. michauxii (PNDDIA02FLUS).
PECLPLUM*34	*Pecluma plumula*	plume polypody	G5	S2	N	E	2006-06-26	FNAI NC recorded as mesic hammock.	Observed 11-50 plants in leaf on lowest 10' of live oak; mixed in with Pleopeltis polypodioides; other live oaks in area probably also have fern.

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FLORIDA Natural Areas INVENTORY

Florida Natural Areas Inventory

Biodiversity Matrix Report

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing
Matrix Unit ID: 30072					
Likely					
Mycteria americana	Wood Stork	G4	S2	T	FT
Sandhill		G3	S2	N	N
Potential					
Antigone canadensis pratensis	Florida Sandhill Crane	G5T2	S2	N	ST
Asplenium x heteroresiliens	Morzenti's spleenwort	G2	S1	N	N
Athene cunicularia floridana	Florida Burrowing Owl	G4T3	S3	N	ST
Calamintha ashei	Ashe's savory	G3	S3	N	T
Centrosema arenicola	sand butterfly pea	G2Q	S2	N	E
Digitaria floridana	Florida fingergrass	G1	S1	N	N
Drymarchon couperi	Eastern Indigo Snake	G3	S2?	T	FT
Dryobates borealis	Red-cockaded Woodpecker	G3	S2	E, PT	FE
Eriogonum longifolium var. gnaphalifolium	scrub buckwheat	G4T3	S3	T	E
Gopherus polyphemus	Gopher Tortoise	G3	S3	C	ST
Gymnopogon chapmanianus	Chapman's skeletongrass	G3	S3	N	N
Lechea cernua	nodding pinweed	G3	S3	N	T
Lithobates capito	Gopher Frog	G2G3	S3	N	N
Litsea aestivalis	pondspice	G3?	S2	N	E
Matelea floridana	Florida spiny-pod	G2	S2	N	E
Monotropsis reynoldsiae	pygmy pipes	G2	S2	N	E
Mustela frenata peninsulae	Florida Long-tailed Weasel	G5T3?	S3?	N	N
Nemastylis floridana	celestial lily	G2	S2	N	E
Neofiber alleni	Round-tailed Muskrat	G2	S2	N	N
Nolina brittoniana	Britton's beargrass	G3	S3	E	E
Peucaea aestivalis	Bachman's Sparrow	G3	S3	N	N
Podomys floridanus	Florida Mouse	G3	S3	N	N
Salix floridana	Florida willow	G2	S2	N	E
Sciurus niger niger	Southeastern Fox Squirrel	G5T5	S3	N	N
Triphora craigheadii	Craighead's nodding-caps	G1	S1	N	E
Warea carteri	Carter's warea	G1	S1	E	E
Matrix Unit ID: 30359					
Potential					
Antigone canadensis pratensis	Florida Sandhill Crane	G5T2	S2	N	ST
Asplenium x heteroresiliens	Morzenti's spleenwort	G2	S1	N	N
Athene cunicularia floridana	Florida Burrowing Owl	G4T3	S3	N	ST
Centrosema arenicola	sand butterfly pea	G2Q	S2	N	E
Drymarchon couperi	Eastern Indigo Snake	G3	S2?	T	FT
Dryobates borealis	Red-cockaded Woodpecker	G3	S2	E, PT	FE
Eriogonum longifolium var. gnaphalifolium	scrub buckwheat	G4T3	S3	T	E
Gopherus polyphemus	Gopher Tortoise	G3	S3	C	ST
Gymnopogon chapmanianus	Chapman's skeletongrass	G3	S3	N	N
Lechea cernua	nodding pinweed	G3	S3	N	T
Lithobates capito	Gopher Frog	G2G3	S3	N	N
Litsea aestivalis	pondspice	G3?	S2	N	E
Lupinus aridorum	scrub lupine	G3T1	S1	E	E

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FLORIDA Natural Areas INVENTORY

Florida Natural Areas Inventory

Biodiversity Matrix Report

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing
Matelea floridana	Florida spiny-pod	G2	S2	N	E
Monotropsis reynoldsiae	pygmy pipes	G2	S2	N	E
Mustela frenata peninsulae	Florida Long-tailed Weasel	G5T3?	S3?	N	N
Nemastylis floridana	celestial lily	G2	S2	N	E
Neofiber alleni	Round-tailed Muskrat	G2	S2	N	N
Podomys floridanus	Florida Mouse	G3	S3	N	N
Polygala lewtonii	Lewton's polygala	G2	S2	E	E
Salix floridana	Florida willow	G2	S2	N	E
Sciurus niger niger	Southeastern Fox Squirrel	G5T5	S3	N	N
Triphora craigheadii	Craighead's nodding-caps	G1	S1	N	E
Warea carteri	Carter's warea	G1	S1	E	E

Matrix Unit ID: 30360

Likely

Mesic flatwoods		G4	S4	N	N

Potential

Antigone canadensis pratensis	Florida Sandhill Crane	G5T2	S2	N	ST
Asplenium x heteroresiliens	Morzenti's spleenwort	G2	S1	N	N
Athene cunicularia floridana	Florida Burrowing Owl	G4T3	S3	N	ST
Calamintha ashei	Ashe's savory	G3	S3	N	T
Centrosema arenicola	sand butterfly pea	G2Q	S2	N	E
Drymarchon couperi	Eastern Indigo Snake	G3	S2?	T	FT
Dryobates borealis	Red-cockaded Woodpecker	G3	S2	E, PT	FE
Eriogonum longifolium var. gnaphalifolium	scrub buckwheat	G4T3	S3	T	E
Gopherus polyphemus	Gopher Tortoise	G3	S3	C	ST
Gymnopogon chapmanianus	Chapman's skeletongrass	G3	S3	N	N
Lechea cernua	nodding pinweed	G3	S3	N	T
Lithobates capito	Gopher Frog	G2G3	S3	N	N
Litsea aestivalis	pondspice	G3?	S2	N	E
Lupinus aridorum	scrub lupine	G3T1	S1	E	E
Matelea floridana	Florida spiny-pod	G2	S2	N	E
Monotropsis reynoldsiae	pygmy pipes	G2	S2	N	E
Mustela frenata peninsulae	Florida Long-tailed Weasel	G5T3?	S3?	N	N
Nemastylis floridana	celestial lily	G2	S2	N	E
Neofiber alleni	Round-tailed Muskrat	G2	S2	N	N
Podomys floridanus	Florida Mouse	G3	S3	N	N
Polygala lewtonii	Lewton's polygala	G2	S2	E	E
Salix floridana	Florida willow	G2	S2	N	E
Sciurus niger niger	Southeastern Fox Squirrel	G5T5	S3	N	N
Triphora craigheadii	Craighead's nodding-caps	G1	S1	N	E
Warea carteri	Carter's warea	G1	S1	E	E

Matrix Unit ID: 30647

Potential

Antigone canadensis pratensis	Florida Sandhill Crane	G5T2	S2	N	ST
Asplenium x heteroresiliens	Morzenti's spleenwort	G2	S1	N	N
Athene cunicularia floridana	Florida Burrowing Owl	G4T3	S3	N	ST

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FLORIDA Natural Areas INVENTORY

Florida Natural Areas Inventory

Biodiversity Matrix Report

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing
Centrosema arenicola	sand butterfly pea	G2Q	S2	N	E
Drymarchon couperi	Eastern Indigo Snake	G3	S2?	T	FT
Dryobates borealis	Red-cockaded Woodpecker	G3	S2	E, PT	FE
Eriogonum longifolium var. gnaphalifolium	scrub buckwheat	G4T3	S3	T	E
Gopherus polyphemus	Gopher Tortoise	G3	S3	C	ST
Gymnopogon chapmanianus	Chapman's skeletongrass	G3	S3	N	N
Lechea cernua	nodding pinweed	G3	S3	N	T
Lithobates capito	Gopher Frog	G2G3	S3	N	N
Litsea aestivalis	pondspice	G3?	S2	N	E
Lupinus aridorum	scrub lupine	G3T1	S1	E	E
Matelea floridana	Florida spiny-pod	G2	S2	N	E
Monotropsis reynoldsiae	pygmy pipes	G2	S2	N	E
Mustela frenata peninsulae	Florida Long-tailed Weasel	G5T3?	S3?	N	N
Nemastylis floridana	celestial lily	G2	S2	N	E
Neofiber alleni	Round-tailed Muskrat	G2	S2	N	N
Nolina brittoniana	Britton's beargrass	G3	S3	E	E
Podomys floridanus	Florida Mouse	G3	S3	N	N
Polygala lewtonii	Lewton's polygala	G2	S2	E	E
Salix floridana	Florida willow	G2	S2	N	E
Sciurus niger niger	Southeastern Fox Squirrel	G5T5	S3	N	N
Triphora craigheadii	Craighead's nodding-caps	G1	S1	N	E
Ursus americanus floridanus	Florida Black Bear	G5T4	S4	N	N
Warea carteri	Carter's warea	G1	S1	E	E

Matrix Unit ID: 30648

Documented

Aphodius aegrotus	Small Pocket Gopher Aphodius Beetle	G3G4	S3?	N	N
Aphodius laevigatus	Large Pocket Gopher Aphodius Beetle	G3G4	S3?	N	N

Potential

Antigone canadensis pratensis	Florida Sandhill Crane	G5T2	S2	N	ST
Asplenium x heteroresiliens	Morzenti's spleenwort	G2	S1	N	N
Athene cunicularia floridana	Florida Burrowing Owl	G4T3	S3	N	ST
Centrosema arenicola	sand butterfly pea	G2Q	S2	N	E
Drymarchon couperi	Eastern Indigo Snake	G3	S2?	T	FT
Dryobates borealis	Red-cockaded Woodpecker	G3	S2	E, PT	FE
Eriogonum longifolium var. gnaphalifolium	scrub buckwheat	G4T3	S3	T	E
Gopherus polyphemus	Gopher Tortoise	G3	S3	C	ST
Gymnopogon chapmanianus	Chapman's skeletongrass	G3	S3	N	N
Heterodon simus	Southern Hognose Snake	G2	S2S3	N	N
Lechea cernua	nodding pinweed	G3	S3	N	T
Lithobates capito	Gopher Frog	G2G3	S3	N	N
Litsea aestivalis	pondspice	G3?	S2	N	E
Lupinus aridorum	scrub lupine	G3T1	S1	E	E
Matelea floridana	Florida spiny-pod	G2	S2	N	E
Mustela frenata peninsulae	Florida Long-tailed Weasel	G5T3?	S3?	N	N
Nemastylis floridana	celestial lily	G2	S2	N	E
Neofiber alleni	Round-tailed Muskrat	G2	S2	N	N
Nolina brittoniana	Britton's beargrass	G3	S3	E	E

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FLORIDA Natural Areas INVENTORY

Florida Natural Areas Inventory

Biodiversity Matrix Report

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing
Podomys floridanus	Florida Mouse	G3	S3	N	N
Polygala lewtonii	Lewton's polygala	G2	S2	E	E
Salix floridana	Florida willow	G2	S2	N	E
Sciurus niger niger	Southeastern Fox Squirrel	G5T5	S3	N	N
Ursus americanus floridanus	Florida Black Bear	G5T4	S4	N	N
Warea carteri	Carter's warea	G1	S1	E	E

Matrix Unit ID: 30649

Likely

Mycteria americana	Wood Stork	G4	S2	T	FT

Potential

Asplenium x heteroresiliens	Morzenti's spleenwort	G2	S1	N	N
Athene cunicularia floridana	Florida Burrowing Owl	G4T3	S3	N	ST
Centrosema arenicola	sand butterfly pea	G2Q	S2	N	E
Drymarchon couperi	Eastern Indigo Snake	G3	S2?	T	FT
Dryobates borealis	Red-cockaded Woodpecker	G3	S2	E, PT	FE
Eriogonum longifolium var. gnaphalifolium	scrub buckwheat	G4T3	S3	T	E
Gopherus polyphemus	Gopher Tortoise	G3	S3	C	ST
Gymnopogon chapmanianus	Chapman's skeletongrass	G3	S3	N	N
Heterodon simus	Southern Hognose Snake	G2	S2S3	N	N
Lechea cernua	nodding pinweed	G3	S3	N	T
Lithobates capito	Gopher Frog	G2G3	S3	N	N
Litsea aestivalis	pondspice	G3?	S2	N	E
Lupinus aridorum	scrub lupine	G3T1	S1	E	E
Matelea floridana	Florida spiny-pod	G2	S2	N	E
Monotropsis reynoldsiae	pygmy pipes	G2	S2	N	E
Mustela frenata peninsulae	Florida Long-tailed Weasel	G5T3?	S3?	N	N
Nemastylis floridana	celestial lily	G2	S2	N	E
Neofiber alleni	Round-tailed Muskrat	G2	S2	N	N
Nolina brittoniana	Britton's beargrass	G3	S3	E	E
Podomys floridanus	Florida Mouse	G3	S3	N	N
Polygala lewtonii	Lewton's polygala	G2	S2	E	E
Salix floridana	Florida willow	G2	S2	N	E
Sciurus niger niger	Southeastern Fox Squirrel	G5T5	S3	N	N
Triphora craigheadii	Craighead's nodding-caps	G1	S1	N	E
Ursus americanus floridanus	Florida Black Bear	G5T4	S4	N	N
Warea carteri	Carter's warea	G1	S1	E	E

Matrix Unit ID: 30936

Potential

Antigone canadensis pratensis	Florida Sandhill Crane	G5T2	S2	N	ST
Asplenium x heteroresiliens	Morzenti's spleenwort	G2	S1	N	N
Athene cunicularia floridana	Florida Burrowing Owl	G4T3	S3	N	ST
Centrosema arenicola	sand butterfly pea	G2Q	S2	N	E
Drymarchon couperi	Eastern Indigo Snake	G3	S2?	T	FT
Dryobates borealis	Red-cockaded Woodpecker	G3	S2	E, PT	FE
Eriogonum longifolium var. gnaphalifolium	scrub buckwheat	G4T3	S3	T	E

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FLORIDA Natural Areas INVENTORY

Florida Natural Areas Inventory

Biodiversity Matrix Report

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing
Gopherus polyphemus	Gopher Tortoise	G3	S3	C	ST
Gymnopogon chapmanianus	Chapman's skeletongrass	G3	S3	N	N
Heterodon simus	Southern Hognose Snake	G2	S2S3	N	N
Lechea cernua	nodding pinweed	G3	S3	N	T
Lithobates capito	Gopher Frog	G2G3	S3	N	N
Litsea aestivalis	pondspice	G3?	S2	N	E
Lupinus aridorum	scrub lupine	G3T1	S1	E	E
Matelea floridana	Florida spiny-pod	G2	S2	N	E
Monotropsis reynoldsiae	pygmy pipes	G2	S2	N	E
Mustela frenata peninsulae	Florida Long-tailed Weasel	G5T3?	S3?	N	N
Nemastylis floridana	celestial lily	G2	S2	N	E
Neofiber alleni	Round-tailed Muskrat	G2	S2	N	N
Nolina brittoniana	Britton's beargrass	G3	S3	E	E
Paronychia chartacea var. chartacea	paper-like nailwort	G3T3	S3	T	E
Peucaea aestivalis	Bachman's Sparrow	G3	S3	N	N
Podomys floridanus	Florida Mouse	G3	S3	N	N
Polygala lewtonii	Lewton's polygala	G2	S2	E	E
Sceloporus woodi	Florida Scrub Lizard	G2G3	S2S3	N	N
Sciurus niger niger	Southeastern Fox Squirrel	G5T5	S3	N	N
Ursus americanus floridanus	Florida Black Bear	G5T4	S4	N	N
Warea carteri	Carter's warea	G1	S1	E	E

Matrix Unit ID: 30937

Potential

Antigone canadensis pratensis	Florida Sandhill Crane	G5T2	S2	N	ST
Asplenium x heteroresiliens	Morzenti's spleenwort	G2	S1	N	N
Athene cunicularia floridana	Florida Burrowing Owl	G4T3	S3	N	ST
Centrosema arenicola	sand butterfly pea	G2Q	S2	N	E
Drymarchon couperi	Eastern Indigo Snake	G3	S2?	T	FT
Dryobates borealis	Red-cockaded Woodpecker	G3	S2	E, PT	FE
Eriogonum longifolium var. gnaphalifolium	scrub buckwheat	G4T3	S3	T	E
Gopherus polyphemus	Gopher Tortoise	G3	S3	C	ST
Gymnopogon chapmanianus	Chapman's skeletongrass	G3	S3	N	N
Heterodon simus	Southern Hognose Snake	G2	S2S3	N	N
Lechea cernua	nodding pinweed	G3	S3	N	T
Lithobates capito	Gopher Frog	G2G3	S3	N	N
Litsea aestivalis	pondspice	G3?	S2	N	E
Lupinus aridorum	scrub lupine	G3T1	S1	E	E
Matelea floridana	Florida spiny-pod	G2	S2	N	E
Mustela frenata peninsulae	Florida Long-tailed Weasel	G5T3?	S3?	N	N
Nemastylis floridana	celestial lily	G2	S2	N	E
Neofiber alleni	Round-tailed Muskrat	G2	S2	N	N
Nolina brittoniana	Britton's beargrass	G3	S3	E	E
Paronychia chartacea var. chartacea	paper-like nailwort	G3T3	S3	T	E
Peucaea aestivalis	Bachman's Sparrow	G3	S3	N	N
Podomys floridanus	Florida Mouse	G3	S3	N	N
Polygala lewtonii	Lewton's polygala	G2	S2	E	E
Salix floridana	Florida willow	G2	S2	N	E
Sciurus niger niger	Southeastern Fox Squirrel	G5T5	S3	N	N

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Ursus americanus floridanus	Florida Black Bear	G5T4	S4	N	N
Warea carteri	Carter's warea	G1	S1	E	E
Matrix Unit ID: 31227					
Likely					
Drymarchon couperi	Eastern Indigo Snake	G3	S2?	T	FT
Mesic flatwoods		G4	S4	N	N
Mycteria americana	Wood Stork	G4	S2	T	FT
Potential					
Antigone canadensis pratensis	Florida Sandhill Crane	G5T2	S2	N	ST
Athene cunicularia floridana	Florida Burrowing Owl	G4T3	S3	N	ST
Carex chapmannii	Chapman's sedge	G3	S3	N	T
Centrosema arenicola	sand butterfly pea	G2Q	S2	N	E
Dryobates borealis	Red-cockaded Woodpecker	G3	S2	E, PT	FE
Eriogonum longifolium var. gnaphalifolium	scrub buckwheat	G4T3	S3	T	E
Gopherus polyphemus	Gopher Tortoise	G3	S3	C	ST
Gymnopogon chapmanianus	Chapman's skeletongrass	G3	S3	N	N
Heterodon simus	Southern Hognose Snake	G2	S2S3	N	N
Lechea cernua	nodding pinweed	G3	S3	N	T
Lithobates capito	Gopher Frog	G2G3	S3	N	N
Litsea aestivalis	pondspice	G3?	S2	N	E
Lupinus aridorum	scrub lupine	G3T1	S1	E	E
Matelea floridana	Florida spiny-pod	G2	S2	N	E
Monotropsis reynoldsiae	pygmy pipes	G2	S2	N	E
Mustela frenata peninsulae	Florida Long-tailed Weasel	G5T3?	S3?	N	N
Nemastylis floridana	celestial lily	G2	S2	N	E
Neofiber alleni	Round-tailed Muskrat	G2	S2	N	N
Nolina brittoniana	Britton's beargrass	G3	S3	E	E
Notophthalmus perstriatus	Striped Newt	G2G3	S2	N	N
Peucaea aestivalis	Bachman's Sparrow	G3	S3	N	N
Podomys floridanus	Florida Mouse	G3	S3	N	N
Polygala lewtonii	Lewton's polygala	G2	S2	E	E
Rostrhamus sociabilis	Snail Kite	G4G5	S2	E	FE
Sceloporus woodi	Florida Scrub Lizard	G2G3	S2S3	N	N
Sciurus niger niger	Southeastern Fox Squirrel	G5T5	S3	N	N
Warea carteri	Carter's warea	G1	S1	E	E
Matrix Unit ID: 31228					
Likely					
Drymarchon couperi	Eastern Indigo Snake	G3	S2?	T	FT
Mesic flatwoods		G4	S4	N	N
Mycteria americana	Wood Stork	G4	S2	T	FT
Potential					
Antigone canadensis pratensis	Florida Sandhill Crane	G5T2	S2	N	ST
Asplenium x heteroresiliens	Morzenti's spleenwort	G2	S1	N	N
Athene cunicularia floridana	Florida Burrowing Owl	G4T3	S3	N	ST

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Carex chapmannii	Chapman's sedge	G3	S3	N	T
Centrosema arenicola	sand butterfly pea	G2Q	S2	N	E
Dryobates borealis	Red-cockaded Woodpecker	G3	S2	E, PT	FE
Eriogonum longifolium var. gnaphalifolium	scrub buckwheat	G4T3	S3	T	E
Gopherus polyphemus	Gopher Tortoise	G3	S3	C	ST
Gymnopogon chapmanianus	Chapman's skeletongrass	G3	S3	N	N
Heterodon simus	Southern Hognose Snake	G2	S2S3	N	N
Lechea cernua	nodding pinweed	G3	S3	N	T
Lithobates capito	Gopher Frog	G2G3	S3	N	N
Litsea aestivalis	pondspice	G3?	S2	N	E
Lupinus aridorum	scrub lupine	G3T1	S1	E	E
Matelea floridana	Florida spiny-pod	G2	S2	N	E
Monotropsis reynoldsiae	pygmy pipes	G2	S2	N	E
Mustela frenata peninsulae	Florida Long-tailed Weasel	G5T3?	S3?	N	N
Nemastylis floridana	celestial lily	G2	S2	N	E
Neofiber alleni	Round-tailed Muskrat	G2	S2	N	N
Nolina brittoniana	Britton's beargrass	G3	S3	E	E
Notophthalmus perstriatus	Striped Newt	G2G3	S2	N	N
Paronychia chartacea var. chartacea	paper-like nailwort	G3T3	S3	T	E
Peucaea aestivalis	Bachman's Sparrow	G3	S3	N	N
Podomys floridanus	Florida Mouse	G3	S3	N	N
Polygala lewtonii	Lewton's polygala	G2	S2	E	E
Rostrhamus sociabilis	Snail Kite	G4G5	S2	E	FE
Sceloporus woodi	Florida Scrub Lizard	G2G3	S2S3	N	N
Sciurus niger niger	Southeastern Fox Squirrel	G5T5	S3	N	N
Ursus americanus floridanus	Florida Black Bear	G5T4	S4	N	N
Warea carteri	Carter's warea	G1	S1	E	E

Matrix Unit ID: 31229

Likely

Drymarchon couperi	Eastern Indigo Snake	G3	S2?	T	FT
Mycteria americana	Wood Stork	G4	S2	T	FT
Sandhill upland lake		G3	S2	N	N

Potential

Antigone canadensis pratensis	Florida Sandhill Crane	G5T2	S2	N	ST
Asplenium x heteroresiliens	Morzenti's spleenwort	G2	S1	N	N
Athene cunicularia floridana	Florida Burrowing Owl	G4T3	S3	N	ST
Carex chapmannii	Chapman's sedge	G3	S3	N	T
Centrosema arenicola	sand butterfly pea	G2Q	S2	N	E
Dryobates borealis	Red-cockaded Woodpecker	G3	S2	E, PT	FE
Eriogonum longifolium var. gnaphalifolium	scrub buckwheat	G4T3	S3	T	E
Gopherus polyphemus	Gopher Tortoise	G3	S3	C	ST
Gymnopogon chapmanianus	Chapman's skeletongrass	G3	S3	N	N
Heterodon simus	Southern Hognose Snake	G2	S2S3	N	N
Lechea cernua	nodding pinweed	G3	S3	N	T
Lithobates capito	Gopher Frog	G2G3	S3	N	N
Litsea aestivalis	pondspice	G3?	S2	N	E
Lupinus aridorum	scrub lupine	G3T1	S1	E	E

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Matelea floridana	Florida spiny-pod	G2	S2	N	E
Mustela frenata peninsulae	Florida Long-tailed Weasel	G5T3?	S3?	N	N
Nemastylis floridana	celestial lily	G2	S2	N	E
Neofiber alleni	Round-tailed Muskrat	G2	S2	N	N
Nolina brittoniana	Britton's beargrass	G3	S3	E	E
Paronychia chartacea var. chartacea	paper-like nailwort	G3T3	S3	T	E
Podomys floridanus	Florida Mouse	G3	S3	N	N
Polygala lewtonii	Lewton's polygala	G2	S2	E	E
Salix floridana	Florida willow	G2	S2	N	E
Sciurus niger niger	Southeastern Fox Squirrel	G5T5	S3	N	N
Ursus americanus floridanus	Florida Black Bear	G5T4	S4	N	N
Warea carteri	Carter's warea	G1	S1	E	E

Matrix Unit ID: 31519

Likely

Drymarchon couperi	Eastern Indigo Snake	G3	S2?	T	FT
Floodplain swamp		G4	S4	N	N
Mesic flatwoods		G4	S4	N	N
Mycteria americana	Wood Stork	G4	S2	T	FT

Potential

Antigone canadensis pratensis	Florida Sandhill Crane	G5T2	S2	N	ST
Athene cunicularia floridana	Florida Burrowing Owl	G4T3	S3	N	ST
Carex chapmannii	Chapman's sedge	G3	S3	N	T
Centrosema arenicola	sand butterfly pea	G2Q	S2	N	E
Corynorhinus rafinesquii	Rafinesque's Big-eared Bat	G3G4	S1	N	N
Dryobates borealis	Red-cockaded Woodpecker	G3	S2	E, PT	FE
Forestiera godfreyi	Godfrey's swampprivet	G2	S2	N	E
Gopherus polyphemus	Gopher Tortoise	G3	S3	C	ST
Gymnopogon chapmanianus	Chapman's skeletongrass	G3	S3	N	N
Heterodon simus	Southern Hognose Snake	G2	S2S3	N	N
Lithobates capito	Gopher Frog	G2G3	S3	N	N
Monotropsis reynoldsiae	pygmy pipes	G2	S2	N	E
Mustela frenata peninsulae	Florida Long-tailed Weasel	G5T3?	S3?	N	N
Nemastylis floridana	celestial lily	G2	S2	N	E
Neofiber alleni	Round-tailed Muskrat	G2	S2	N	N
Notophthalmus perstriatus	Striped Newt	G2G3	S2	N	N
Peucaea aestivalis	Bachman's Sparrow	G3	S3	N	N
Podomys floridanus	Florida Mouse	G3	S3	N	N
Rostrhamus sociabilis	Snail Kite	G4G5	S2	E	FE
Sciurus niger niger	Southeastern Fox Squirrel	G5T5	S3	N	N
Warea carteri	Carter's warea	G1	S1	E	E

Matrix Unit ID: 31520

Likely

Drymarchon couperi	Eastern Indigo Snake	G3	S2?	T	FT
Floodplain swamp		G4	S4	N	N
Mesic flatwoods		G4	S4	N	N

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Mycteria americana	Wood Stork	G4	S2	T	FT
Potential					
Antigone canadensis pratensis	Florida Sandhill Crane	G5T2	S2	N	ST
Asplenium x heteroresiliens	Morzenti's spleenwort	G2	S1	N	N
Athene cunicularia floridana	Florida Burrowing Owl	G4T3	S3	N	ST
Calamintha ashei	Ashe's savory	G3	S3	N	T
Carex chapmannii	Chapman's sedge	G3	S3	N	T
Centrosema arenicola	sand butterfly pea	G2Q	S2	N	E
Corynorhinus rafinesquii	Rafinesque's Big-eared Bat	G3G4	S1	N	N
Dryobates borealis	Red-cockaded Woodpecker	G3	S2	E, PT	FE
Eriogonum longifolium var. gnaphalifolium	scrub buckwheat	G4T3	S3	T	E
Forestiera godfreyi	Godfrey's swampprivet	G2	S2	N	E
Gopherus polyphemus	Gopher Tortoise	G3	S3	C	ST
Gymnopogon chapmanianus	Chapman's skeletongrass	G3	S3	N	N
Heterodon simus	Southern Hognose Snake	G2	S2S3	N	N
Justicia cooleyi	Cooley's water-willow	G2Q	S2	E	E
Lechea cernua	nodding pinweed	G3	S3	N	T
Lithobates capito	Gopher Frog	G2G3	S3	N	N
Monotropsis reynoldsiae	pygmy pipes	G2	S2	N	E
Mustela frenata peninsulae	Florida Long-tailed Weasel	G5T3?	S3?	N	N
Nemastylis floridana	celestial lily	G2	S2	N	E
Neofiber alleni	Round-tailed Muskrat	G2	S2	N	N
Nolina brittoniana	Britton's beargrass	G3	S3	E	E
Notophthalmus perstriatus	Striped Newt	G2G3	S2	N	N
Paronychia chartacea var. chartacea	paper-like nailwort	G3T3	S3	T	E
Peucaea aestivalis	Bachman's Sparrow	G3	S3	N	N
Podomys floridanus	Florida Mouse	G3	S3	N	N
Polygala lewtonii	Lewton's polygala	G2	S2	E	E
Pseudemys concinna suwanniensis	Suwannee Cooter	G5T3	S3	N	N
Rostrhamus sociabilis	Snail Kite	G4G5	S2	E	FE
Sciurus niger niger	Southeastern Fox Squirrel	G5T5	S3	N	N
Warea carteri	Carter's warea	G1	S1	E	E
Matrix Unit ID: 31819					
Likely					
Drymarchon couperi	Eastern Indigo Snake	G3	S2?	T	FT
Mesic flatwoods		G4	S4	N	N
Mycteria americana	Wood Stork	G4	S2	T	FT
Potential					
Agrimonia incisa	incised groove-bur	G3	S2	N	T
Antigone canadensis pratensis	Florida Sandhill Crane	G5T2	S2	N	ST
Asplenium x heteroresiliens	Morzenti's spleenwort	G2	S1	N	N
Athene cunicularia floridana	Florida Burrowing Owl	G4T3	S3	N	ST
Carex chapmannii	Chapman's sedge	G3	S3	N	T
Centrosema arenicola	sand butterfly pea	G2Q	S2	N	E
Corynorhinus rafinesquii	Rafinesque's Big-eared Bat	G3G4	S1	N	N
Dryobates borealis	Red-cockaded Woodpecker	G3	S2	E, PT	FE

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Forestiera godfreyi	Godfrey's swampprivet	G2	S2	N	E
Gopherus polyphemus	Gopher Tortoise	G3	S3	C	ST
Gymnopogon chapmanianus	Chapman's skeletongrass	G3	S3	N	N
Heterodon simus	Southern Hognose Snake	G2	S2S3	N	N
Lithobates capito	Gopher Frog	G2G3	S3	N	N
Matelea floridana	Florida spiny-pod	G2	S2	N	E
Monotropsis reynoldsiae	pygmy pipes	G2	S2	N	E
Mustela frenata peninsulae	Florida Long-tailed Weasel	G5T3?	S3?	N	N
Nemastylis floridana	celestial lily	G2	S2	N	E
Neofiber alleni	Round-tailed Muskrat	G2	S2	N	N
Notophthalmus perstriatus	Striped Newt	G2G3	S2	N	N
Peucaea aestivalis	Bachman's Sparrow	G3	S3	N	N
Podomys floridanus	Florida Mouse	G3	S3	N	N
Pycnanthemum floridanum	Florida mountain-mint	G3	S3	N	T
Rostrhamus sociabilis	Snail Kite	G4G5	S2	E	FE
Sciurus niger niger	Southeastern Fox Squirrel	G5T5	S3	N	N
Warea carteri	Carter's warea	G1	S1	E	E

Matrix Unit ID: 31820

Documented

Pecluma plumula	plume polypody	G5	S2	N	E

Likely

Drymarchon couperi	Eastern Indigo Snake	G3	S2?	T	FT
Floodplain swamp		G4	S4	N	N
Mesic flatwoods		G4	S4	N	N
Mycteria americana	Wood Stork	G4	S2	T	FT
Scrub		G2	S2	N	N

Potential

Antigone canadensis pratensis	Florida Sandhill Crane	G5T2	S2	N	ST
Athene cunicularia floridana	Florida Burrowing Owl	G4T3	S3	N	ST
Carex chapmannii	Chapman's sedge	G3	S3	N	T
Corynorhinus rafinesquii	Rafinesque's Big-eared Bat	G3G4	S1	N	N
Dryobates borealis	Red-cockaded Woodpecker	G3	S2	E, PT	FE
Forestiera godfreyi	Godfrey's swampprivet	G2	S2	N	E
Gopherus polyphemus	Gopher Tortoise	G3	S3	C	ST
Gymnopogon chapmanianus	Chapman's skeletongrass	G3	S3	N	N
Heterodon simus	Southern Hognose Snake	G2	S2S3	N	N
Lithobates capito	Gopher Frog	G2G3	S3	N	N
Monotropsis reynoldsiae	pygmy pipes	G2	S2	N	E
Mustela frenata peninsulae	Florida Long-tailed Weasel	G5T3?	S3?	N	N
Nemastylis floridana	celestial lily	G2	S2	N	E
Neofiber alleni	Round-tailed Muskrat	G2	S2	N	N
Notophthalmus perstriatus	Striped Newt	G2G3	S2	N	N
Peucaea aestivalis	Bachman's Sparrow	G3	S3	N	N
Podomys floridanus	Florida Mouse	G3	S3	N	N
Sciurus niger niger	Southeastern Fox Squirrel	G5T5	S3	N	N
Warea carteri	Carter's warea	G1	S1	E	E

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Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing
Matrix Unit ID: 32129					
Likely					
Drymarchon couperi	Eastern Indigo Snake	G3	S2?	T	FT
Mesic flatwoods		G4	S4	N	N
Mycteria americana	Wood Stork	G4	S2	T	FT
Potential					
Agrimonia incisa	incised groove-bur	G3	S2	N	T
Antigone canadensis pratensis	Florida Sandhill Crane	G5T2	S2	N	ST
Asplenium x heteroresiliens	Morzenti's spleenwort	G2	S1	N	N
Athene cunicularia floridana	Florida Burrowing Owl	G4T3	S3	N	ST
Carex chapmannii	Chapman's sedge	G3	S3	N	T
Centrosema arenicola	sand butterfly pea	G2Q	S2	N	E
Corynorhinus rafinesquii	Rafinesque's Big-eared Bat	G3G4	S1	N	N
Dryobates borealis	Red-cockaded Woodpecker	G3	S2	E, PT	FE
Forestiera godfreyi	Godfrey's swampprivet	G2	S2	N	E
Gopherus polyphemus	Gopher Tortoise	G3	S3	C	ST
Gymnopogon chapmanianus	Chapman's skeletongrass	G3	S3	N	N
Lithobates capito	Gopher Frog	G2G3	S3	N	N
Matelea floridana	Florida spiny-pod	G2	S2	N	E
Monotropsis reynoldsiae	pygmy pipes	G2	S2	N	E
Mustela frenata peninsulae	Florida Long-tailed Weasel	G5T3?	S3?	N	N
Nemastylis floridana	celestial lily	G2	S2	N	E
Neofiber alleni	Round-tailed Muskrat	G2	S2	N	N
Peucaea aestivalis	Bachman's Sparrow	G3	S3	N	N
Podomys floridanus	Florida Mouse	G3	S3	N	N
Pycnanthemum floridanum	Florida mountain-mint	G3	S3	N	T
Rostrhamus sociabilis	Snail Kite	G4G5	S2	E	FE
Sciurus niger niger	Southeastern Fox Squirrel	G5T5	S3	N	N
Warea carteri	Carter's warea	G1	S1	E	E
Matrix Unit ID: 32130					
Documented					
Gopherus polyphemus	Gopher Tortoise	G3	S3	C	ST
Likely					
Drymarchon couperi	Eastern Indigo Snake	G3	S2?	T	FT
Floodplain swamp		G4	S4	N	N
Mesic flatwoods		G4	S4	N	N
Mycteria americana	Wood Stork	G4	S2	T	FT
Potential					
Agrimonia incisa	incised groove-bur	G3	S2	N	T
Antigone canadensis pratensis	Florida Sandhill Crane	G5T2	S2	N	ST
Asplenium x heteroresiliens	Morzenti's spleenwort	G2	S1	N	N
Athene cunicularia floridana	Florida Burrowing Owl	G4T3	S3	N	ST
Carex chapmannii	Chapman's sedge	G3	S3	N	T
Centrosema arenicola	sand butterfly pea	G2Q	S2	N	E

Definitions: *Documented - Rare species and natural communities documented on or near this site.*
Documented-Historic - Rare species and natural communities documented, but not observed/reported within the last twenty years.
Likely - Rare species and natural communities likely to occur on this site based on suitable habitat and/or known occurrences in the vicinity.
Potential - This site lies within the known or predicted range of the species listed.

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
(850) 224-8207
(850) 681-9364 Fax

FLORIDA Natural Areas INVENTORY

Florida Natural Areas Inventory

Biodiversity Matrix Report

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing
Corynorhinus rafinesquii	Rafinesque's Big-eared Bat	G3G4	S1	N	N
Dryobates borealis	Red-cockaded Woodpecker	G3	S2	E, PT	FE
Gymnopogon chapmanianus	Chapman's skeletongrass	G3	S3	N	N
Lithobates capito	Gopher Frog	G2G3	S3	N	N
Matelea floridana	Florida spiny-pod	G2	S2	N	E
Monotropsis reynoldsiae	pygmy pipes	G2	S2	N	E
Mustela frenata peninsulae	Florida Long-tailed Weasel	G5T3?	S3?	N	N
Nemastylis floridana	celestial lily	G2	S2	N	E
Neofiber alleni	Round-tailed Muskrat	G2	S2	N	N
Peucaea aestivalis	Bachman's Sparrow	G3	S3	N	N
Podomys floridanus	Florida Mouse	G3	S3	N	N
Pycnanthemum floridanum	Florida mountain-mint	G3	S3	N	T
Sciurus niger niger	Southeastern Fox Squirrel	G5T5	S3	N	N
Warea carteri	Carter's warea	G1	S1	E	E

Matrix Unit ID: 32450

Likely

Mesic flatwoods		G4	S4	N	N
Mycteria americana	Wood Stork	G4	S2	T	FT

Potential

Agrimonia incisa	incised groove-bur	G3	S2	N	T
Antigone canadensis pratensis	Florida Sandhill Crane	G5T2	S2	N	ST
Asplenium x heteroresiliens	Morzenti's spleenwort	G2	S1	N	N
Athene cunicularia floridana	Florida Burrowing Owl	G4T3	S3	N	ST
Centrosema arenicola	sand butterfly pea	G2Q	S2	N	E
Drymarchon couperi	Eastern Indigo Snake	G3	S2?	T	FT
Dryobates borealis	Red-cockaded Woodpecker	G3	S2	E, PT	FE
Gopherus polyphemus	Gopher Tortoise	G3	S3	C	ST
Gymnopogon chapmanianus	Chapman's skeletongrass	G3	S3	N	N
Lithobates capito	Gopher Frog	G2G3	S3	N	N
Litsea aestivalis	pondspice	G3?	S2	N	E
Matelea floridana	Florida spiny-pod	G2	S2	N	E
Monotropsis reynoldsiae	pygmy pipes	G2	S2	N	E
Mustela frenata peninsulae	Florida Long-tailed Weasel	G5T3?	S3?	N	N
Nemastylis floridana	celestial lily	G2	S2	N	E
Neofiber alleni	Round-tailed Muskrat	G2	S2	N	N
Peucaea aestivalis	Bachman's Sparrow	G3	S3	N	N
Podomys floridanus	Florida Mouse	G3	S3	N	N
Pycnanthemum floridanum	Florida mountain-mint	G3	S3	N	T
Rostrhamus sociabilis	Snail Kite	G4G5	S2	E	FE
Sciurus niger niger	Southeastern Fox Squirrel	G5T5	S3	N	N

Definitions: *Documented - Rare species and natural communities documented on or near this site.*
Documented-Historic - Rare species and natural communities documented, but not observed/reported within the last twenty years.
Likely - Rare species and natural communities likely to occur on this site based on suitable habitat and/or known occurrences in the vicinity.
Potential - This site lies within the known or predicted range of the species listed.

Elements and Element Occurrences

An **element** is any exemplary or rare component of the natural environment, such as a species, natural community, bird rookery, spring, sinkhole, cave, or other ecological feature.

An **element occurrence (EO)** is an area of land and/or water in which a species or natural community is, or was, present. An EO should have practical conservation value for the Element as evidenced by potential continued (or historical) presence and/or regular recurrence at a given location.

Element Ranking and Legal Status

Using a ranking system developed by NatureServe and the Natural Heritage Program Network, the Florida Natural Areas Inventory assigns two ranks for each element. The global rank is based on an element's worldwide status; the state rank is based on the status of the element in Florida. Element ranks are based on many factors, the most important ones being estimated number of Element Occurrences (EOs), estimated abundance (number of individuals for species; area for natural communities), geographic range, estimated number of adequately protected EOs, relative threat of destruction, and ecological fragility.

FNAI GLOBAL ELEMENT RANK

G1 = Critically imperiled globally because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.
G2 = Imperiled globally because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.
G3 = Either very rare and local throughout its range (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction from other factors.
G4 = Apparently secure globally (may be rare in parts of range).
G5 = Demonstrably secure globally.
GH = Of historical occurrence throughout its range, may be rediscovered (e.g., ivory-billed woodpecker).
GX = Believed to be extinct throughout range.
GXC = Extirpated from the wild but still known from captivity or cultivation.
G#? = Tentative rank (e.g., G2?).
G#G# = Range of rank; insufficient data to assign specific global rank (e.g., G2G3).
G#T# = Rank of a taxonomic subgroup such as a subspecies or variety; the G portion of the rank refers to the entire species and the T portion refers to the specific subgroup; numbers have same definition as above (e.g., G3T1).
G#Q = Rank of questionable species - ranked as species but questionable whether it is species or subspecies; numbers have same definition as above (e.g., G2Q).
G#T#Q = Same as above, but validity as subspecies or variety is questioned.
GU = Unrankable; due to a lack of information no rank or range can be assigned (e.g., GUT2).
GNA = Ranking is not applicable because the element is not a suitable target for conservation (e.g. a hybrid species).
GNR = Element not yet ranked (temporary).
GNRTNR = Neither the element nor the taxonomic subgroup has yet been ranked.

FNAI STATE ELEMENT RANK

S1 = Critically imperiled in Florida because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.
S2 = Imperiled in Florida because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.
S3 = Either very rare and local in Florida (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction from other factors.
S4 = Apparently secure in Florida (may be rare in parts of range).
S5 = Demonstrably secure in Florida.
SH = Of historical occurrence in Florida, possibly extirpated, but may be rediscovered (e.g., ivory-billed woodpecker).
SX = Believed to be extirpated throughout Florida.
SU = Unrankable; due to a lack of information no rank or range can be assigned.
SNA = State ranking is not applicable because the element is not a suitable target for conservation (e.g. a hybrid species).
SNR = Element not yet ranked (temporary).

FEDERAL LEGAL STATUS

Legal status information provided by FNAI for information only. For official definitions and lists of protected species, consult the relevant federal agency.

Definitions derived from U.S. Endangered Species Act of 1973, Sec. 3. Note that the federal status given by FNAI refers only to Florida populations and that federal status may differ elsewhere.

C = Candidate species for which federal listing agencies have sufficient information on biological vulnerability and threats to support proposing to list the species as Endangered or Threatened.
E = Endangered: species in danger of extinction throughout all or a significant portion of its range.
E, T = Species currently listed endangered in a portion of its range but only listed as threatened in other areas
E, PDL = Species currently listed endangered but has been proposed for delisting.
E, PT = Species currently listed endangered but has been proposed for listing as threatened.
E, XN = Species currently listed endangered but tracked population is a non-essential experimental population.
T = Threatened: species likely to become Endangered within the foreseeable future throughout all or a significant portion of its range.
PE = Species proposed for listing as endangered
PS = Partial status: some but not all of the species' infraspecific taxa have federal
PT = Species proposed for listing as threatened
SAT = Treated as threatened due to similarity of appearance to a species which is federally listed such that enforcement personnel have difficulty in attempting to differentiate between the listed and unlisted species.
SC = Not currently listed, but considered a "species of concern" to USFWS.

STATE LEGAL STATUS

Provided by FNAI for information only. For official definitions and lists of protected species, consult the relevant state agency.

Animals: Definitions derived from "Florida's Endangered Species and Species of Special Concern, Official Lists" published by Florida Fish and Wildlife Conservation Commission, 1 August 1997, and subsequent updates.

C = Candidate for listing at the Federal level by the U. S. Fish and Wildlife Service
FE = Listed as Endangered Species at the Federal level by the U. S. Fish and Wildlife Service
FT = Listed as Threatened Species at the Federal level by the U. S. Fish and Wildlife Service
FXN = Federal listed as an experimental population in Florida
FT(S/A) = Federal Threatened due to similarity of appearance
ST = State population listed as Threatened by the FFWCC. Defined as a species, subspecies, or isolated population which is acutely vulnerable to environmental alteration, declining in number at a rapid rate, or whose range or habitat is decreasing in area at a rapid rate and as a consequence is destined or very likely to become an endangered species within the foreseeable future.
SSC = Listed as Species of Special Concern by the FFWCC. Defined as a population which warrants special protection, recognition, or consideration because it has an inherent significant vulnerability to habitat modification, environmental alteration, human disturbance, or substantial human exploitation which, in the foreseeable future, may result in its becoming a threatened species. (SSC* for Pandion haliaetus (Osprey) indicates that this status applies in Monroe county only.)
N = Not currently listed, nor currently being considered for listing.

Plants: Definitions derived from Sections 581.011 and 581.185(2), Florida Statutes, and the Preservation of Native Flora of Florida Act, 5B-40.001. FNAI does not track all state-regulated plant species; for a complete list of state-regulated plant species, call Florida Division of Plant Industry, 352-372-3505 or see: http://www.doacs.state.fl.us/pi/.

E = Endangered: species of plants native to Florida that are in imminent danger of extinction within the state, the survival of which is unlikely if the causes of a decline in the number of plants continue; includes all species determined to be endangered or threatened pursuant to the U.S. Endangered Species Act.
T = Threatened: species native to the state that are in rapid decline in the number of plants within the state, but which have not so decreased in number as to cause them to be Endangered.
N = Not currently listed, nor currently being considered for listing.

Element Occurrence Ranking

FNAI ranks of quality of the element occurrence in terms of its viability (EORANK). Viability is estimated using a combination of factors that contribute to continued survival of the element at the location. Among these are the size of the EO, general condition of the EO at the site, and the conditions of the landscape surrounding the EO (e.g. an immediate threat to an EO by local development pressure could lower an EO rank).

A = Excellent estimated viability
A? = Possibly excellent estimated viability
AB = Excellent or good estimated viability
AC = Excellent, good, or fair estimated viability
B = Good estimated viability
B? = Possibly good estimated viability
BC = Good or fair estimated viability
BD = Good, fair, or poor estimated viability
C = Fair estimated viability
C? = Possibly fair estimated viability
CD = Fair or poor estimated viability
D = Poor estimated viability
D? = Possibly poor estimated viability
E = Verified extant (viability not assessed)
F = Failed to find
H = Historical
NR = Not ranked, a placeholder when an EO is not (yet) ranked.
U = Unrankable
X = Extirpated

*For additional detail on the above ranks see: http://www.natureserve.org/explorer/eorankguide.htm

FNAI also uses the following EO ranks:

H? = Possibly historical
F? = Possibly failed to find
X? = Possibly extirpated

The following offers further explanation of the H and X ranks as they are used by FNAI:

The rank of H is used when there is a lack of recent field information verifying the continued existence of an EO, such as (a) when an EO is based only on historical collections data; or (b) when an EO was ranked A, B, C, D, or E at one time and is later, without field survey work, considered to be possibly extirpated due to general habitat loss or degradation of the environment in the area. This definition of the H rank is dependent on an interpretation of what constitutes "recent" field information. Generally, if there is no known survey of an EO within the last 20 to 40 years, it should be assigned an H rank. While these time frames represent suggested maximum limits, the actual time period for historical EOs may vary according to the biology of the element and the specific landscape context of each occurrence (including anthropogenic alteration of the environment). Thus, an H rank may be assigned to an EO before the maximum time frames have lapsed. Occurrences that have not been surveyed for periods exceeding these time frames should not be ranked A, B, C, or D. The higher maximum limit for plants and communities (i.e., ranging from 20 to 40 years) is based upon the assumption that occurrences of these elements generally have the potential to persist at a given location for longer periods of time. This greater potential is a reflection of plant biology and community dynamics. However, landscape factors must also be considered. Thus, areas with more anthropogenic impacts on the environment (e.g., development) will be at the lower end of the range, and less-impacted areas will be at the higher end.

The rank of X is assigned to EOs for which there is documented destruction of habitat or environment, or persuasive evidence of eradication based on adequate survey (i.e., thorough or repeated survey efforts by one or more experienced observers at times and under conditions appropriate for the Element at that location).

APPENDIX D

Species Protection Measures/Special Provisions

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.

LEGAL REQUIREMENTS AND RESPONSIBILITY TO THE PUBLIC – LAWS TO BE OBSERVED - COMPLIANCE WITH FEDERAL ENDANGERED SPECIES ACT AND OTHER WILDLIFE REGULATIONS (GOPHER TORTOISE).

(REV 6-15-17) (FA 6-20-17) (1-19)

SUBARTICLE 7-1.4 is expanded by the following new Subarticle:

7-1.4.1 Additional Requirements for Gopher Tortoises (Gopherus Polyphemus): Certain gopher tortoise burrows are to remain within the project area, as shown in the Plans, and must be protected. Avoid ground disturbing impacts within a 25 foot radius of each burrow. Install and maintain silt fence in accordance with Section 104 as a means of burrow avoidance, ensuring that it opens towards the offsite project limits, does not herd tortoises toward an obstacle, and that burrows are not fully encircled. Install fence prior to any other construction activity. Replace fence in the same location as the original fence. Remove fence upon completion of construction.

Silt fence intended for burrow avoidance may also be used as silt fence for erosion control but shall not be considered as the only silt fence needed for erosion control purposes within the project limits.

Follow the gopher tortoise species requirements posted in the URL address in 7-1.4 when gopher tortoises are observed or previously unidentified burrows are discovered.

LEGAL REQUIREMENTS AND RESPONSIBILITY TO THE PUBLIC – LAWS TO BE OBSERVED - COMPLIANCE WITH FEDERAL ENDANGERED SPECIES ACT AND OTHER WILDLIFE REGULATIONS (EAGLE).
(REV 6-16-17) (FA 6-28-17) (1-19)

SUBARTICLE 7-1.4 is being expanded by the following new Sub article:

7-1.4.1 Additional Requirements for Bald Eagles (Haliaeetus leucocephalus): The following active bald eagle nests are located within 660 feet of the project as shown in the Plans:

Nest # (note which buffer zone nest falls within)
Nest # (note which buffer zone nest falls within)

No construction activities can occur, including staging of equipment, within 330 feet of any active bald eagle nest during nesting season (October 1 – May 15, or until all nestlings fledge).

Conduct construction activities occurring between 330 feet and 660 feet from an active bald eagle nest during nesting season as directed by the Engineer, who will act in coordination with the nest monitor provided by the Department. Stop work when directed by the Engineer and do not resume work within the monitoring area until approval is received from the Engineer.

Construction activities more than 660 feet from a nest may be conducted, at any time of year, with no coordination required with the USFWS or FWC.

When new or alternate nests are observed, follow the bald eagle species guidelines posted in the URL address in 7-1.4.

LEGAL REQUIREMENTS AND RESPONSIBILITY TO THE PUBLIC – LAWS TO BE OBSERVED - COMPLIANCE WITH FEDERAL ENDANGERED SPECIES ACT AND OTHER WILDLIFE REGULATIONS (BEAR).
(REV 6-6-17) (FA 6-13-17) (1-19)

SUBARTICLE 7-1.4 is expanded by the following:

The Department has determined that Florida black bears (*Ursus americanus floridanus*) occur in the project area. Unless stored overnight in a sealed, manufacturer-labeled bear-resistant container or in a locked metal container, remove garbage and food debris from the construction site daily to eliminate possible sources of food that could encourage and attract bears. Human bear conflicts are to be reported to the FWC Hotline at 1-888-404-3922.

APPENDIX E

USFWS Wood Stork Consultation Key Excerpts

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

Purpose and Background

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

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

Scope of the key

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

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

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

Summary of General Wood Stork Nesting and Foraging Habitat Information

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

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

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

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

WOOD STORK KEY

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

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

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

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

Project impacts SFH[2]……go to C

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

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

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

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

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

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

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

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

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

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

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

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

Monitoring and Reporting Effects

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

Literature Cited

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

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

Rodgers, J.A. Jr., A.S. Wenner, and S.T. Schwikert. 1987. Population dynamics of wood storks in northern and central Florida, USA. Colonial Waterbirds 10:151-156.

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

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

APPENDIX F

Proposed Hillsborough River Wildlife Feature

Supplemental Information

LOCHNER

MEETING MINUTES

Date: September 8, 2021 | 1:00 PM – 2:00 PM

Location: MS Teams Virtual Meeting

Re: WPI Seg No. 443368-2
US 98 (SR 35/SR 700) PD&E Study
Wildlife Feature Coordination Meeting

These meeting notes represent the understanding of the preparer (Genesis Zambrano, H. W. Lochner).

Attendees:

Kevin Connor, HW Lochner
Genesis Zambrano, HW Lochner
Gordon Mullen, RK&K
Allison Conner, FDOT District 7
Craig Fox, FDOT District 7
Kirk Bogen, FDOT District 7
Robin Rhinesmith, FDOT District 7
Kristee Booth, Florida Fish and Wildlife Conservation Commission
Sean Greene, Florida Fish and Wildlife Conservation Commission
Terry Gilbert, Florida Fish and Wildlife Conservation Commission

Project Overview – Presented by Allison Conner and Kevin Connor

District 7 is conducting a Project Development and Environment (PD&E) Study for the widening of US 98 (SR 35/ SR 700) from two lanes to four lanes from the Polk County Line / CR 54 to US 301 (SR 39/SR 41) which includes the realignment of US 98 (SR 35/SR 700) between CR 35A to US 301 (SR 39/SR 41). As the Natural Resources Evaluation (NRE) is being developed for this study, the purpose of this meeting is to discuss the potential to include a wildlife feature at the US 98 bridge over the Hillsborough River in Pasco County. The wildlife feature is expected to include 10-foot shelves on each side of the river for wildlife use. Due to right of way (ROW) and drainage constraints, the profile of the roadway and bridge is not expected to be raised above the existing condition. Therefore, the vertical clearance for the feature is anticipated to be approximately 3 feet, similar to what exists today. Existing conditions include 160 feet of existing ROW with SWFWMD / TIITF lands on each side of the feature. (See attached).

Discussion

Sean Greene asked if there is fencing associated with the feature and what are the target species for the feature. Kevin Connor responded that the target species will be non-listed small mammals and herps. Gordon Mullen added that fencing will be costly and result in more wetland impacts due to the proximity of wetlands and the seasonal high water (SHW) elevation against the roadway toe of slope. He also added that a few Florida black bears have been documented within a few miles of this location. Kristee Booth mentioned that the small species explains the 3-foot clearance. Kristee also asked if there is a lot of road kill data. Gordon responded by saying he and his team did not see a prevalence of roadkill during project field reviews and that not a lot of roadkill data is available.

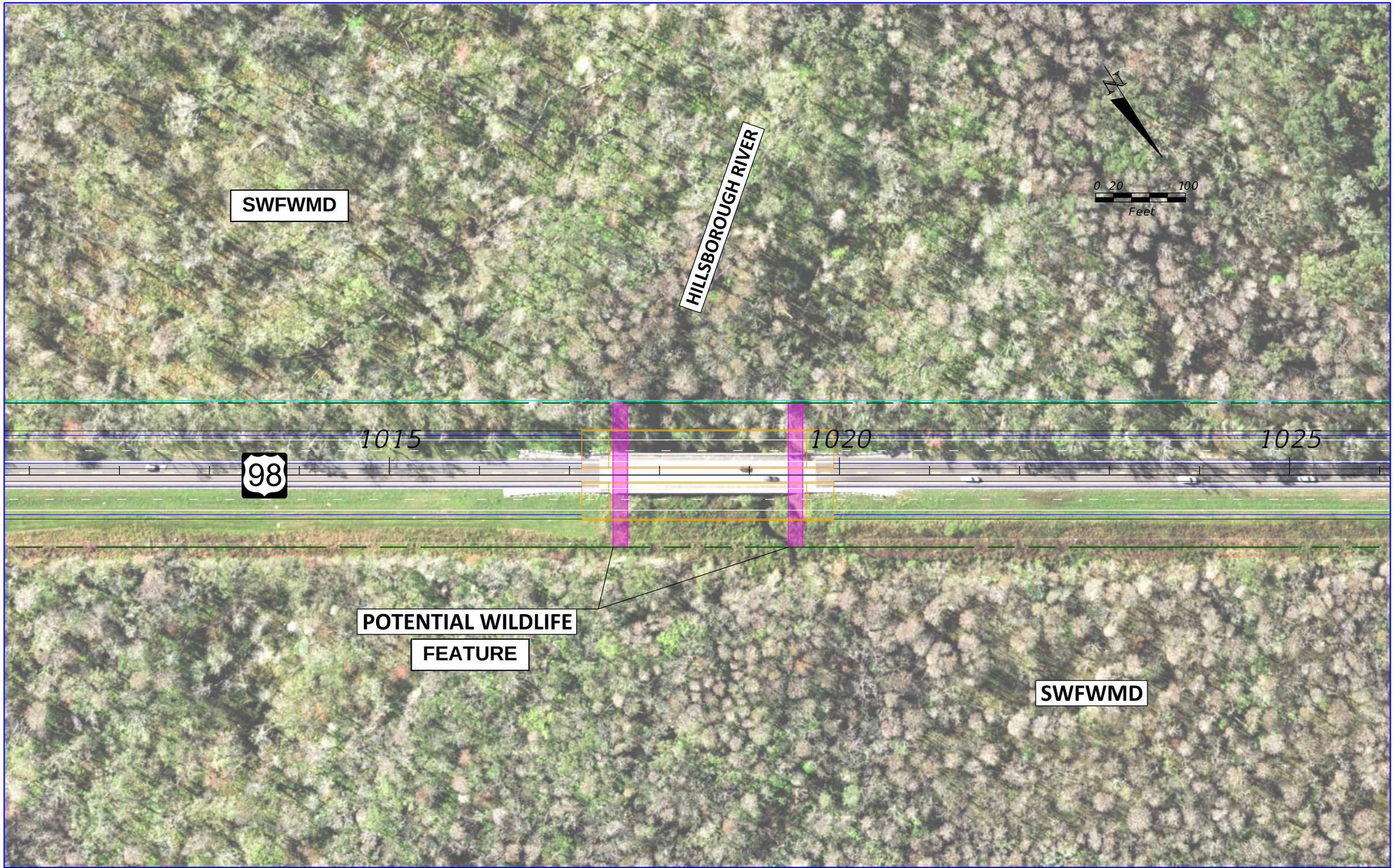
Terry Gilbert asked what the average daily vehicle use is for the road. Kevin answered that it was approximately 6,000 to 7,000 vehicles per day. Terry added that deer and bear can swim through the water if needed. Terry asked if there was a potential for FDOT buying some land to increase habitat locally. Kirk Bogen responded by stating that since there are no listed species being targeted by the feature and no adverse effect determination are anticipated for the project, land acquisition will not occur. Terry asked if there was more of an opening now. Kevin answered that there will be more of an opening under the bridge post construction than what is existing now. Kevin added that the worst case scenario would be to match the existing low member elevation. He also mentioned that this may be adjusted to increase the vertical clearance in the design phase based on bridge type, but it is not expected to be any lower.

Kristee asked about the ROW needs for the project and/or wildlife feature, and if we had coordinated with SWFWMD. Kevin responded that the project will not require ROW from the SWFWMD / TIITF lands. The wildlife feature will be entirely located within FDOT ROW. As such, no coordination with SWFWMD relative to ROW has taken place.

Allison Connor asked if there were any other environmental considerations for species that should be discussed or did the proposed cross section satisfy the FWC's concerns. Sean Greene responded by saying if the target is small to medium-sized mammals and herps then it should be sufficient. Terry added that it would be nice to have more clearance to accommodate larger animals. Kristee asked if raising the roadway was a hydrologic concern and what were the other factors affecting the proposed feature dimensions. Kevin answered by saying that key considerations included slope tie-ins and avoiding impacts to drainage intended to provide a net water quality benefit. Kristee acknowledged that it would increase wetland impacts and impacts to SWFWMD/TIITF lands. Kevin said that there were no discussions of roadway/bridge design with SWFWMD.

Terry asked if it was possible to lower the shelf elevation to allow for more vertical clearance. Kevin responded by saying that it was possible but the intent was to provide some dry area at or above SHW. Kristen asked if the shelf could be fortified. Kevin answered that it was a design level detail that would come after the PD&E. Kristee added that if installing rip rap waterward of the shelf would cause more wetland impacts. Kevin said that they are trying to improve what is already there without incurring additional impacts. Kristee acknowledged that it sounds like they are doing the most that they can do.

Allison mentioned that the discussion of the meeting will be included with the NRE. FDOT will then review the document, allowing consultants to address comments and then it will be submitted to the FWC and other agencies for review. Allison also asked if the group agreed with limiting fencing to avoid additional impacts. FWC agreed with Allison's statement and added that it will avoid funneling large animals to a feature that is not ideal for them.



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

US 98 FROM POLK COUNTY LINE TO US 301

PROJECT DEVELOPMENT AND ENVIRONMENT (PD&E) STUDY

PASCO COUNTY, FLORIDA

FPID: 4433368-1-22-01

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
	PASCO	443368-2-22-01

POTENTIAL WILDLIFE - EXHIBIT 1

SHEET NO.

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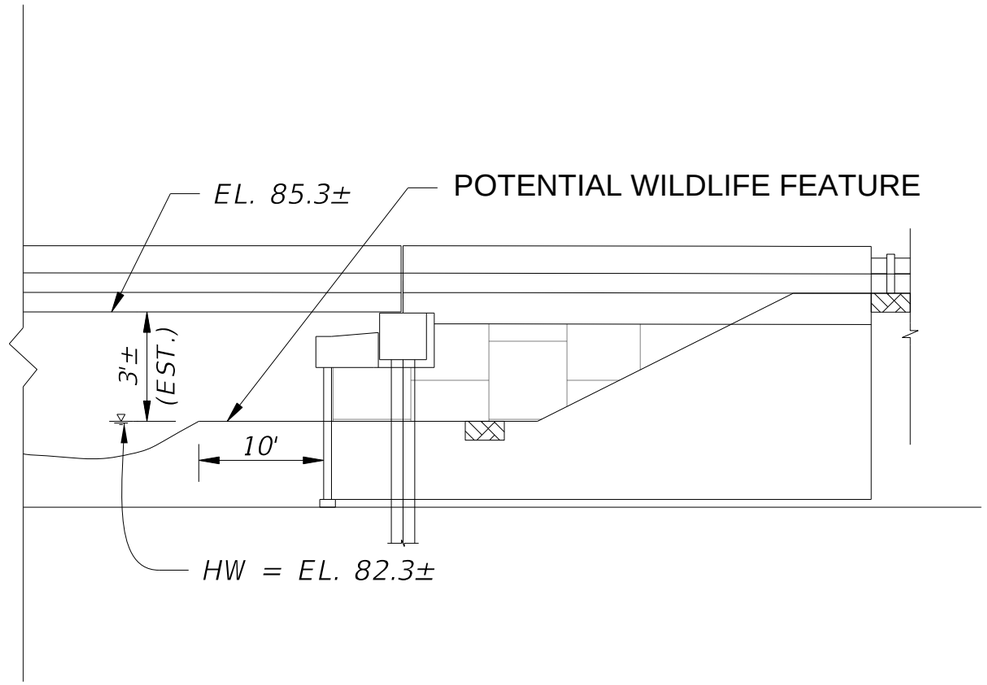
HILLSBOROUGH RIVER BRIDGE



NOT TO SCALE

FOR ILLUSTRATIVE PURPOSES ONLY

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

US 98 FROM POLK COUNTY LINE TO US 301

PROJECT DEVELOPMENT AND ENVIRONMENT (PD&E) STUDY

PASCO COUNTY, FLORIDA

FPID: 4433368-1-22-01

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
	PASCO	443368-2-22-01

POTENTIAL WILDLIFE - EXHIBIT 2

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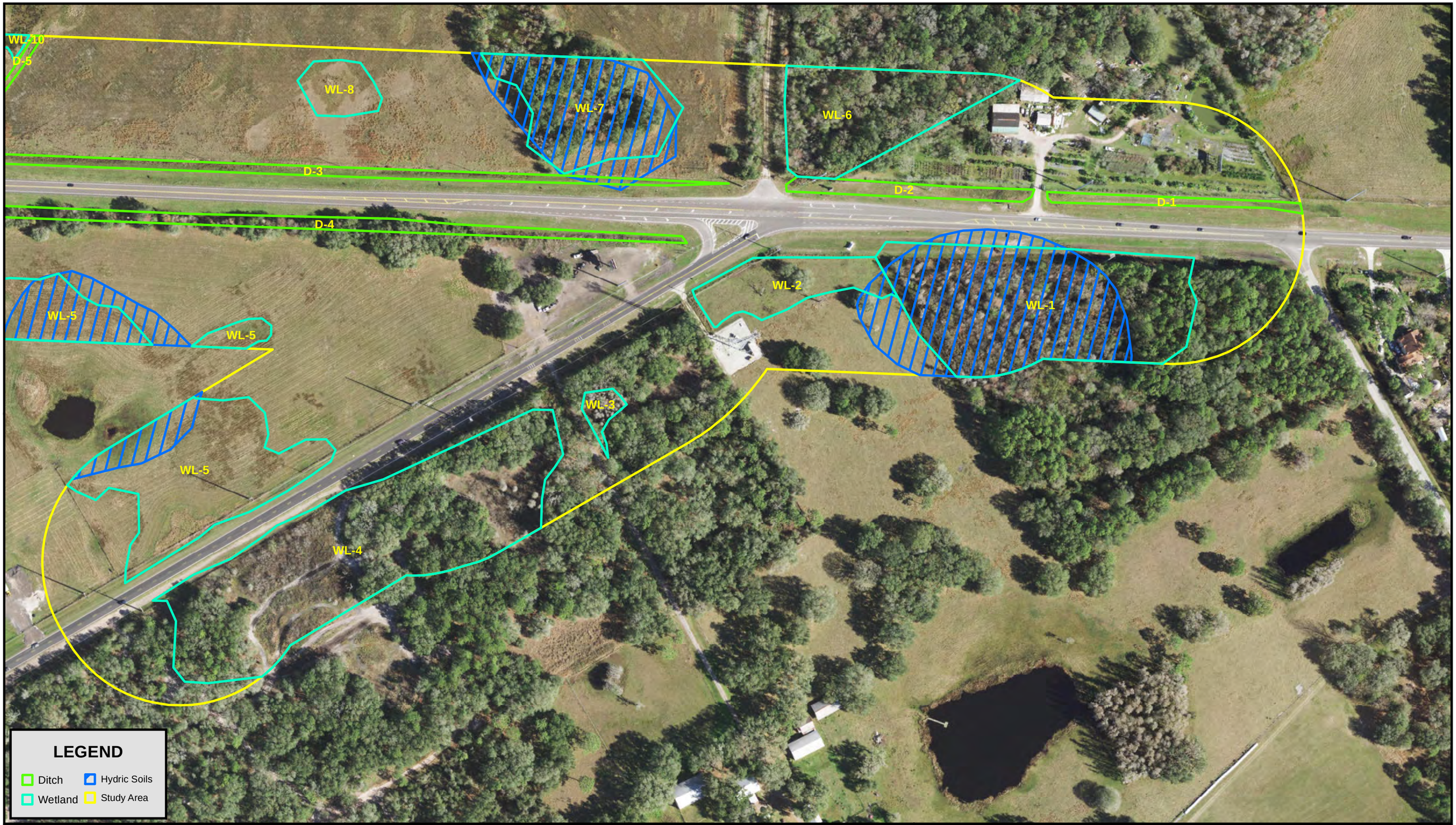
APPENDIX G

Project Wetland and Other Surface Water Maps



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Feet

1 inch = 200 feet

Project Wetland and Other Surface Water Maps

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, NRCS 2018, 2021, SWFWMD 2017, RK&K 2021

FDOT

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Feet
1 inch = 200 feet

Project Wetland and Other Surface Water Maps

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, NRCS 2018, 2021, SWFWMD 2017, RK&K 2021

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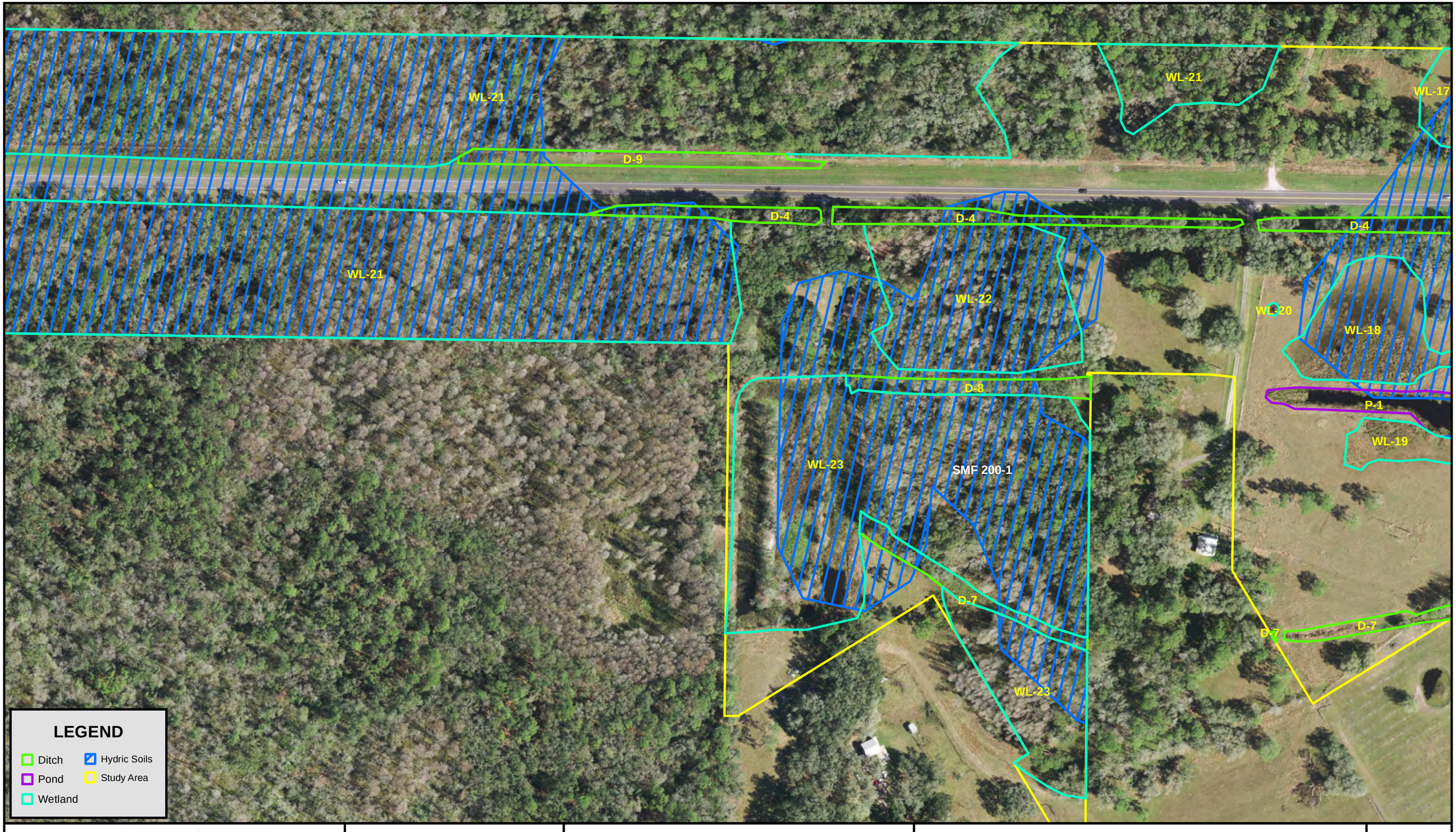

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Feet

1 inch = 200 feet

Project Wetland and Other Surface Water Maps

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, NRCS 2018, 2021, SWFWMD 2017, RK&K 2021

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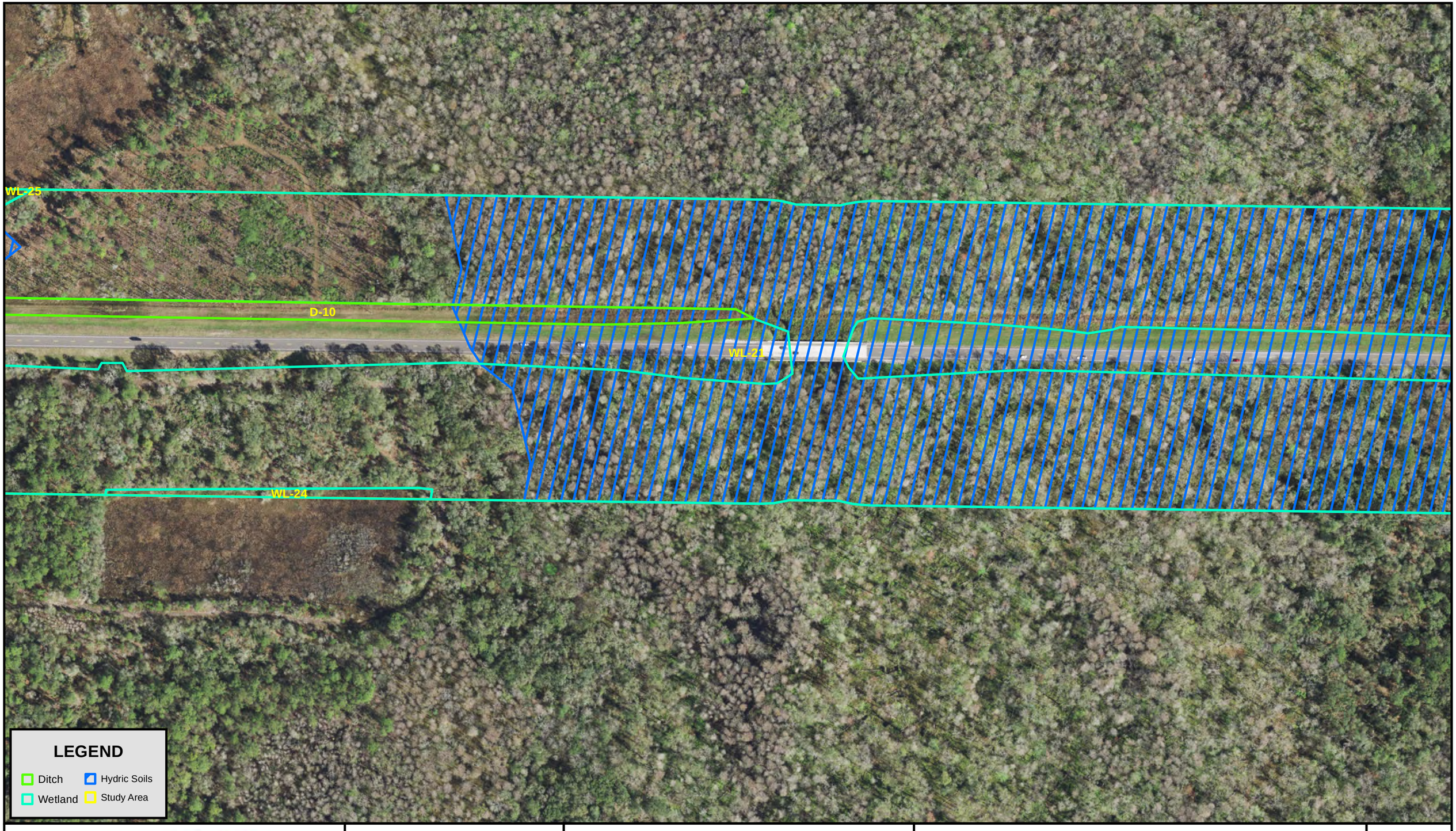

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Feet

1 inch = 200 feet

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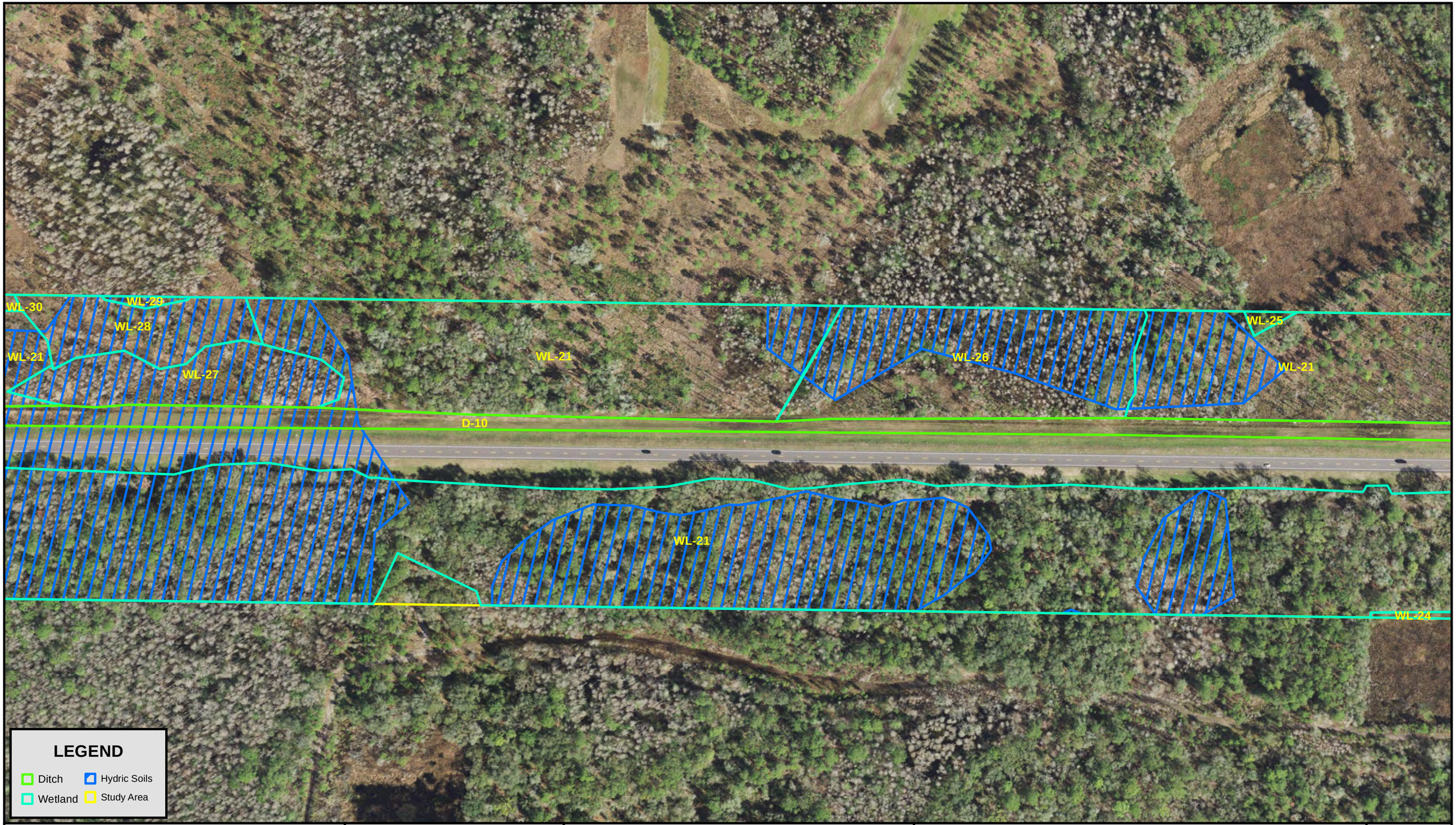

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Feet
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Project Wetland and Other Surface Water Maps

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Pasco County, Florida

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FDOT

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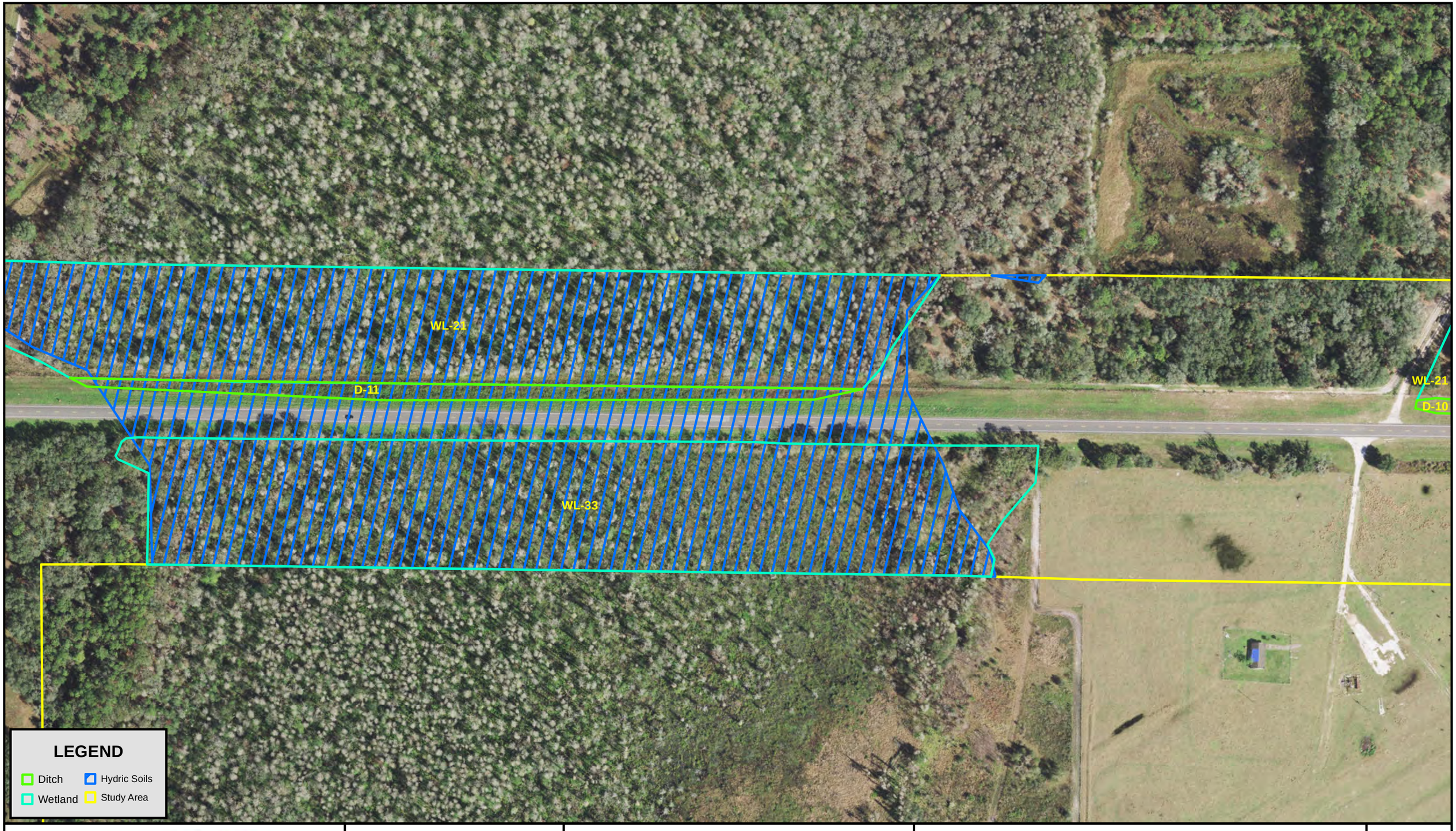

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Feet
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FDOT

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Feet
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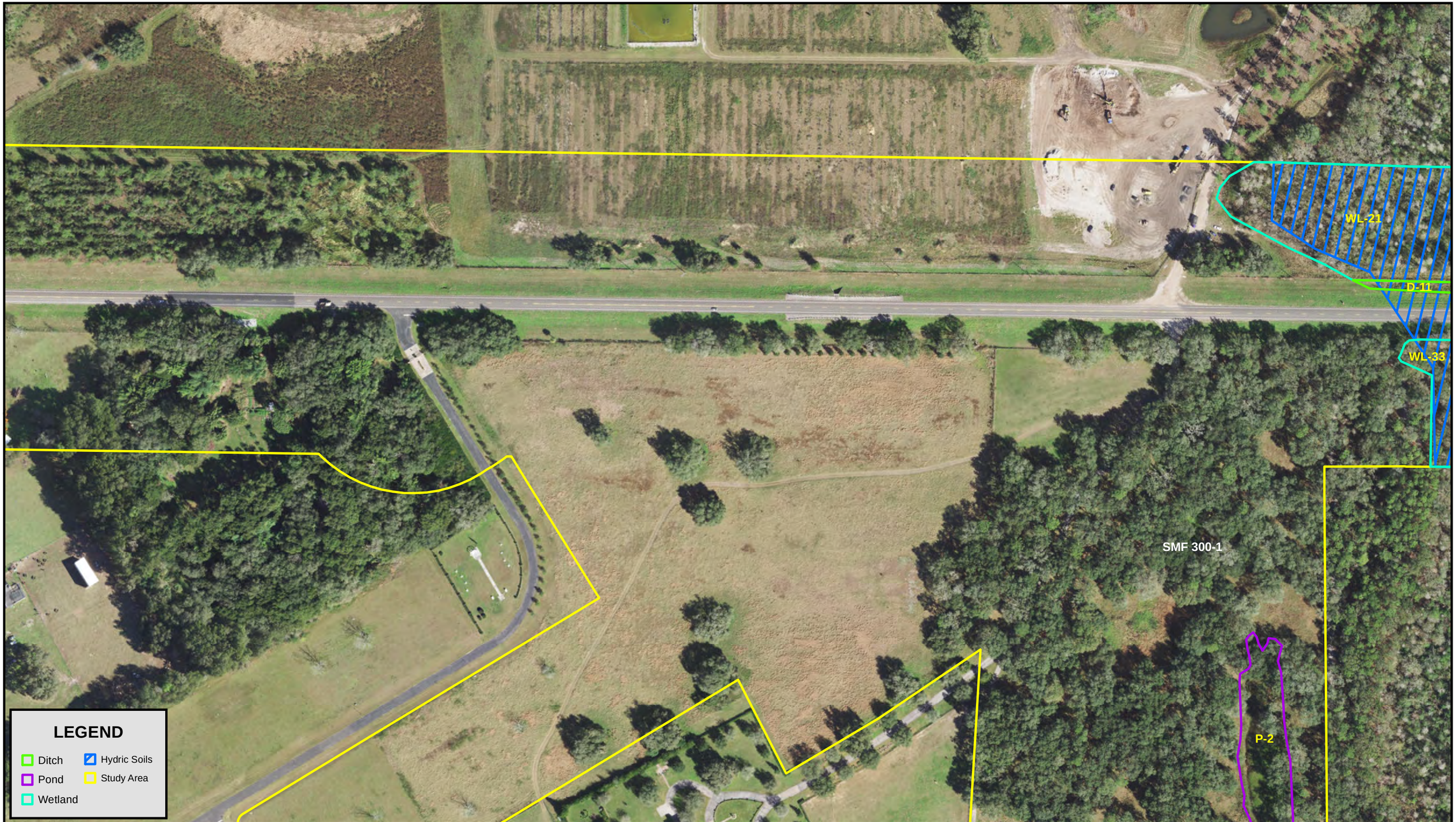

FDOT

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Feet
1 inch = 200 feet

Project Wetland and Other Surface Water Maps

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, NRCS 2018, 2021, SWFWMD 2017, RK&K 2021

FDOT

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Feet
1 inch = 200 feet

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FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, NRCS 2018, 2021, SWFWMD 2017, RK&K 2021

N

NO WETLANDS/OTHER
SURFACE WATERS
THIS SHEET

SMF 400-1

LEGEND

Study Area

FDOT

0 200 400

Feet

1 inch = 200 feet

Project Wetland and Other Surface Water Maps

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, NRCS 2018, 2021, SWFWMD 2017, RK&K 2021

SMF 500-1

P-1

LEGEND

- Pond
- Study Area

FDOT

0 200 400

Feet

1 inch = 200 feet

Project Wetland and Other Surface Water Maps

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, NRCS 2018, 2021, SWFWMD 2017, RK&K 2021

SMF 700-1

SMF 600-2

NO WETLANDS/OTHER
SURFACE WATERS
THIS SHEET

LEGEND

Study Area

FDOT

0 200 400

Feet

1 inch = 200 feet

Project Wetland and Other Surface Water Maps

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, NRCS 2018, 2021, SWFWMD 2017, RK&K 2021

N

NO WETLANDS/OTHER
SURFACE WATERS
THIS SHEET

SMF 700-1

LEGEND

Study Area

FDOT

0 200 400

Feet

1 inch = 200 feet

Project Wetland and Other Surface Water Maps

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, NRCS 2018, 2021, SWFWMD 2017, RK&K 2021

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FDOT

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Feet

1 inch = 200 feet

Project Wetland and Other Surface Water Maps

US 98/SR 35/SR 700
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FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, NRCS 2018, 2021, SWFWMD 2017, RK&K 2021

SMF 900-1

NO WETLANDS/OTHER
SURFACE WATERS
THIS SHEET

LEGEND

Study Area

FDOT

0 200 400

Feet

1 inch = 200 feet

Project Wetland and Other Surface Water Maps

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, NRCS 2018, 2021, SWFWMD 2017, RK&K 2021

N

NO WETLANDS/OTHER
SURFACE WATERS
THIS SHEET

SMF 900-1

LEGEND

Study Area

FDOT

0 200 400

Feet

1 inch = 200 feet

Project Wetland and Other Surface Water Maps

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, NRCS 2018, 2021, SWFWMD 2017, RK&K 2021

N

NO WETLANDS/OTHER
SURFACE WATERS
THIS SHEET

LEGEND

Study Area

FDOT

0 200 400

Feet

1 inch = 200 feet

Project Wetland and Other Surface Water Maps

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, NRCS 2018, 2021, SWFWMD 2017, RK&K 2021

N

APPENDIX H

Project Site Photos

Photo 1: Typical Stream and Lake Swamp (FLUCFCS 6150) (WL-21)

Photo 2: Mixed Wetland Hardwood (FLUCFCS 6410) (WL-7)

Photo 3: Typical Streams and Waterways (FLUCFCS 5100) within ROW (D-11)

Photo 4: Nest in Cell Tower near US 98 and CR 54 Intersection

Photo 5: Typical Upland Pasture (FLUCFCS 2100) with Cell Tower with Nest in Background

Photo 6: Stream and Lake Swamp (FLUCFCS 6150) (WL-21) at Bridge over Hillsborough River

Photo 7: Typical Freshwater Marsh (FLUCFCS 6410) (WL-2) adjacent to Stream and Wetland Forested Mixed (FLUCFCS 6300) (WL-1)

Photo 8: Typical Stream and Lake Swamp (FLUCFCS 6150) (WL-33)

Photo 9: Typical Stream and Waterway (FLUCFCS 5100) (D-10)

Photo 10: Fill on private parcel/in-holding within Boarshead Ranch Property

Photo 11: Typical Upland US 98 ROW

Photo 12: US 98 Bridge Over CR 35A

Photo 13: Gopher Tortoise Observed within Study Area

Photo 14: Typical Potentially Occupied Gopher Tortoise Burrow within US 98 ROW

Photo 15: Typical Shrub and Brushland (FLUCFCS 3200)

Photo 16: Typical Tree Plantation (FLUCFCS 4400)

Photo 17: P-4 (FLUCFCS 5300)

Photo 18: Typical Upland Pasture (FLUCFCS 2100) where New Alignment is Proposed

Photo 19: Typical Stream and Waterway (FLUCFCS 5100) (D-8) within SMF 200-1

Photo 20: Typical Stream and Lake Swamp (FLUCFCS 6150) (WL-23) within SMF 200-1

Photo 21: Typical Stream and Waterway (FLUCFCS 5100) (D-7) within SMF 200-1

Photo 22: Typical View SMF 300-1

Photo 23: Typical View FPC 300 South-01

Photo 24: D-2 (FLUCFCS 5300) within FPC 300-South-01 and SMF 300-1

Photo 25: Typical View FPC 300 North-01

Photo 26: P-3 (FLUCFCS 5300)

Photo 27: Typical View SMF 500-01

Photo 28: Typical View SMF 400-01

Photo 29: Typical View SMF 600-02

Photo 30: Typical View SMF 700-01

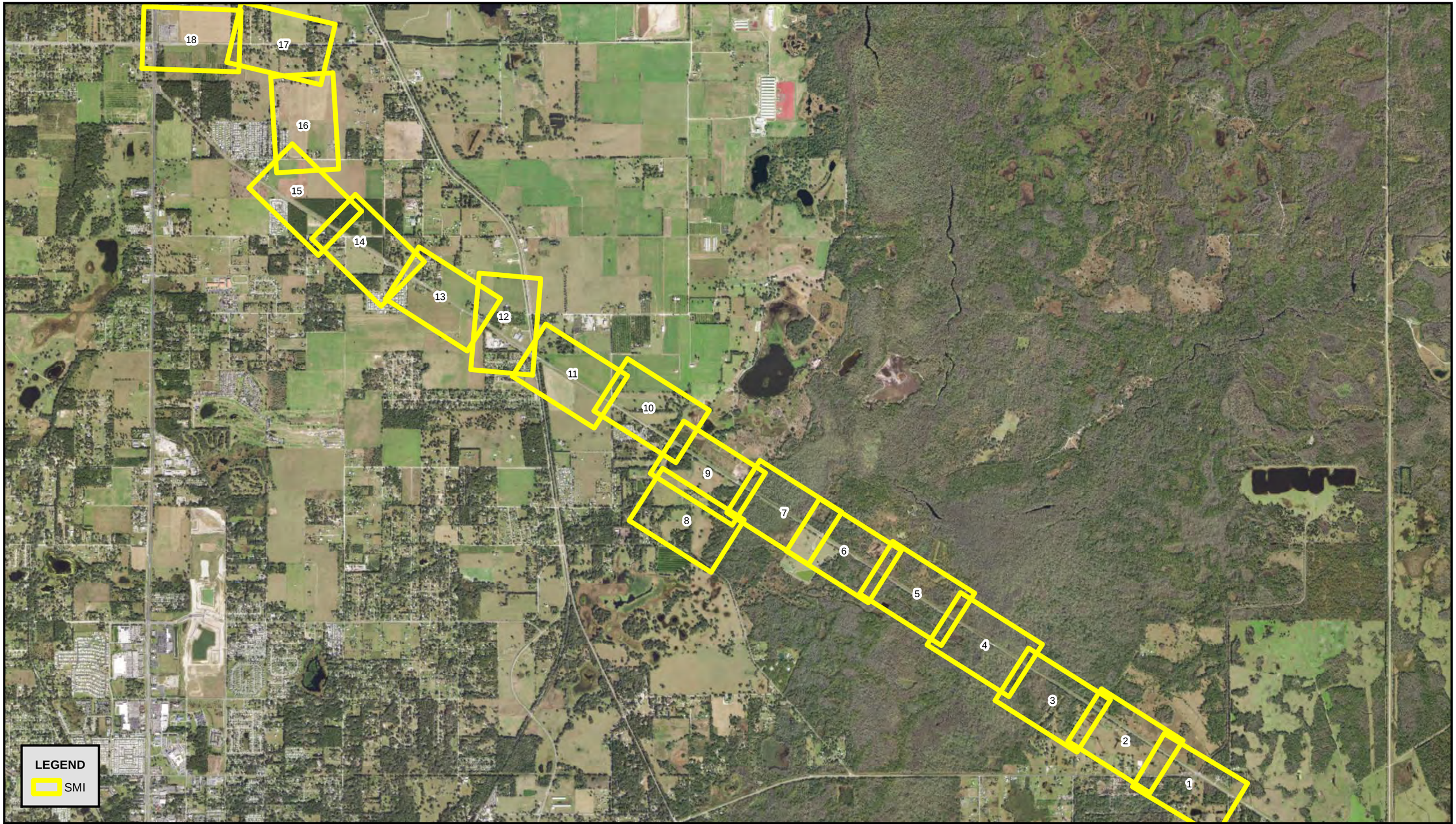
Photo 31: Typical View SMF 800-01

Photo 32: Typical View SMF 900-01

Photo 33: Photo of *Tillandsia fasciculata* observed along the E. side of the US 98 ROW within the central portion of the study area

APPENDIX I

Wetland Impact Maps



FDOT

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Feet

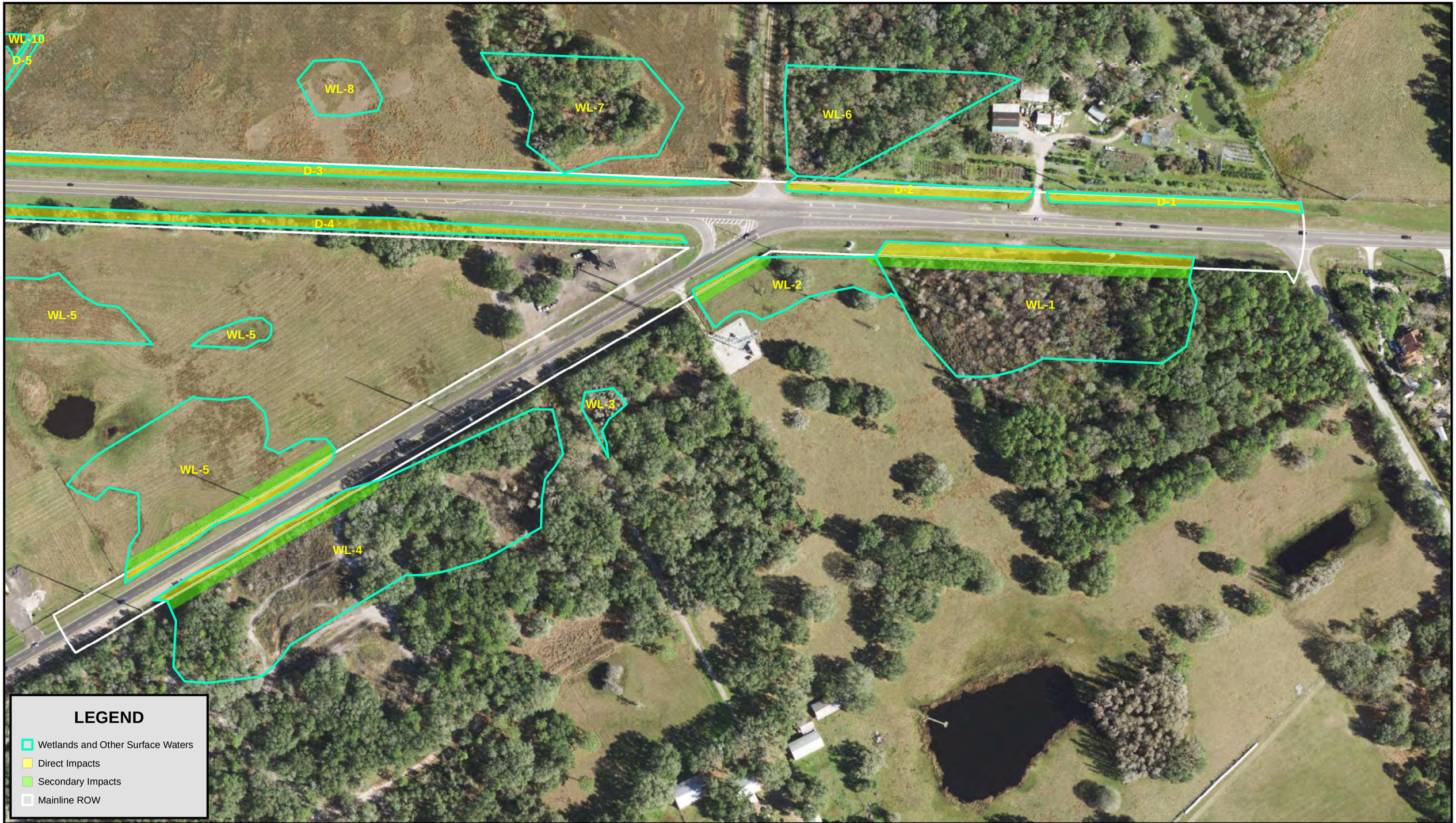
1 inch = 3,000 feet

Sheet Index

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, FNAI 2021, RK&K 2021

N



FDOT

0 200 400

Feet

1 inch = 200 feet

Wetland Impact Maps

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, RK&K 2021

N

FDOT

0 200 400

Feet

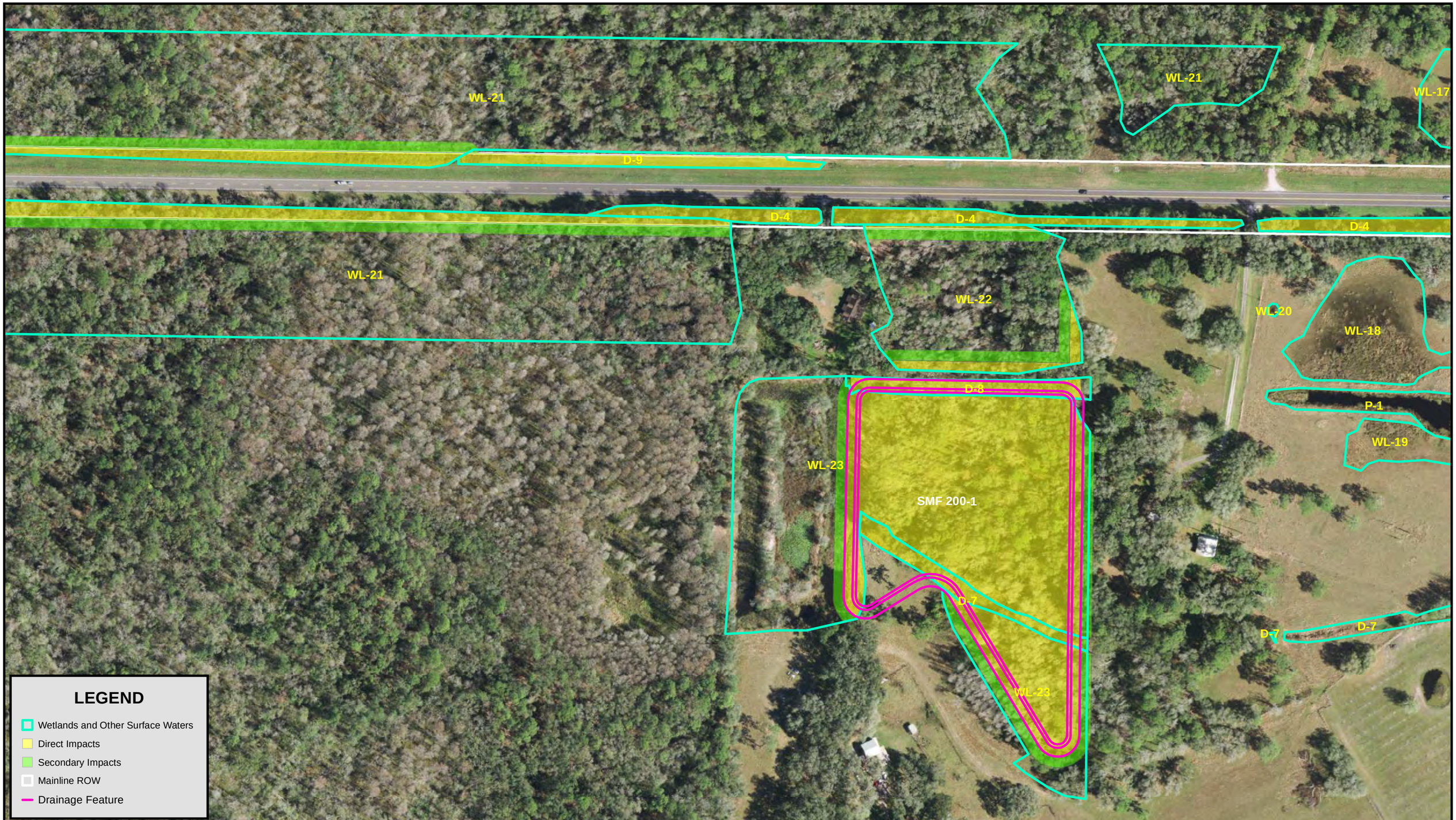
1 inch = 200 feet

Wetland Impact Maps

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, RK&K 2021

N



FDOT

0 200 400

Feet

1 inch = 200 feet

Wetland Impact Maps

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, RK&K 2021

N

LEGEND

- Wetlands and Other Surface Waters
- Direct Impacts
- Secondary Impacts
- Mainline ROW

FDOT

0 200 400

Feet

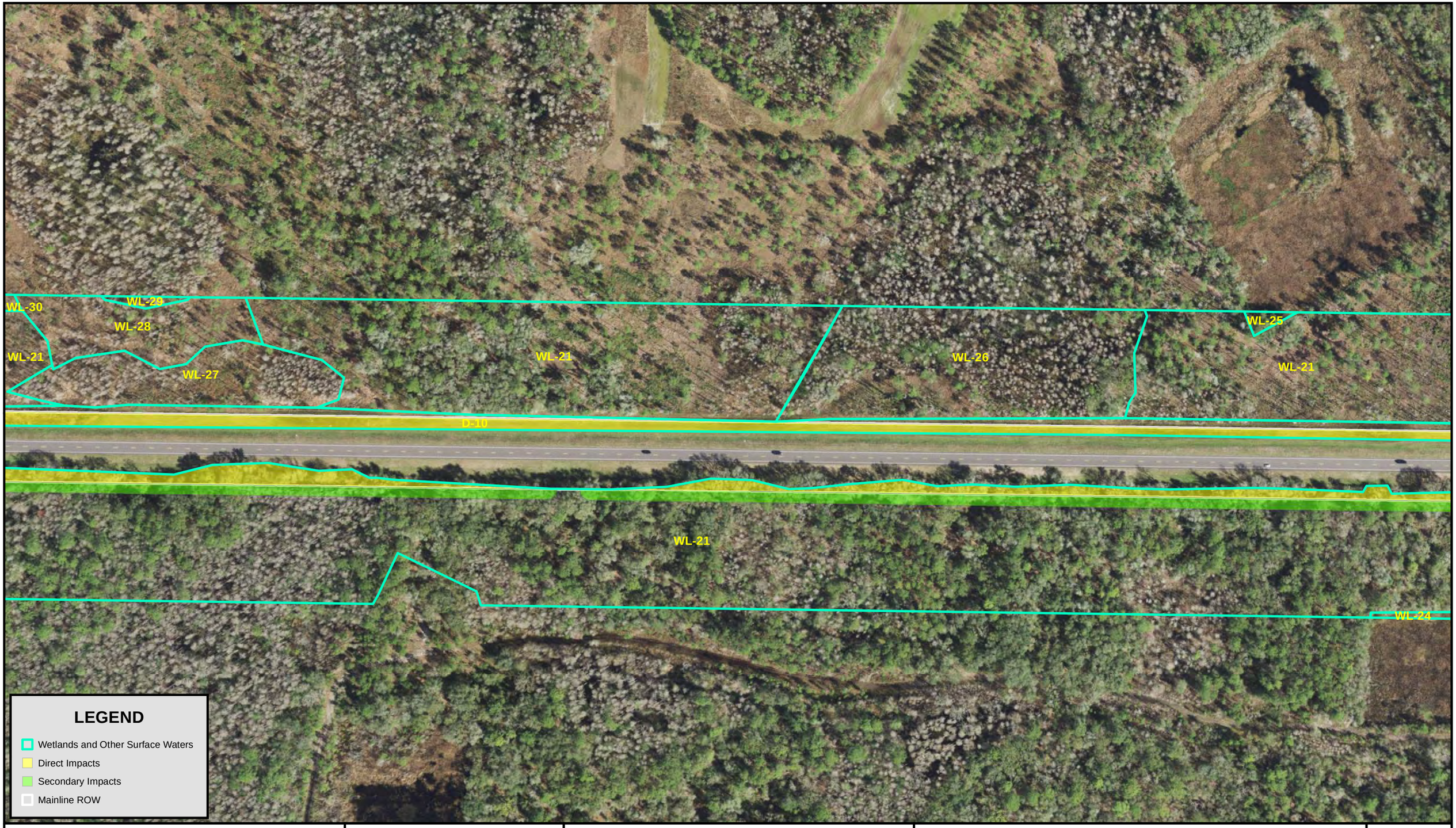
1 inch = 200 feet

Wetland Impact Maps

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, RK&K 2021

N



FDOT

0 200 400
Feet
1 inch = 200 feet

Wetland Impact Maps

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, RK&K 2021

FDOT

0 200 400
Feet
1 inch = 200 feet

Wetland Impact Maps

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, RK&K 2021

FDOT

0 200 400
Feet
1 inch = 200 feet

Wetland Impact Maps

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, RK&K 2021

N

FDOT

0 200 400

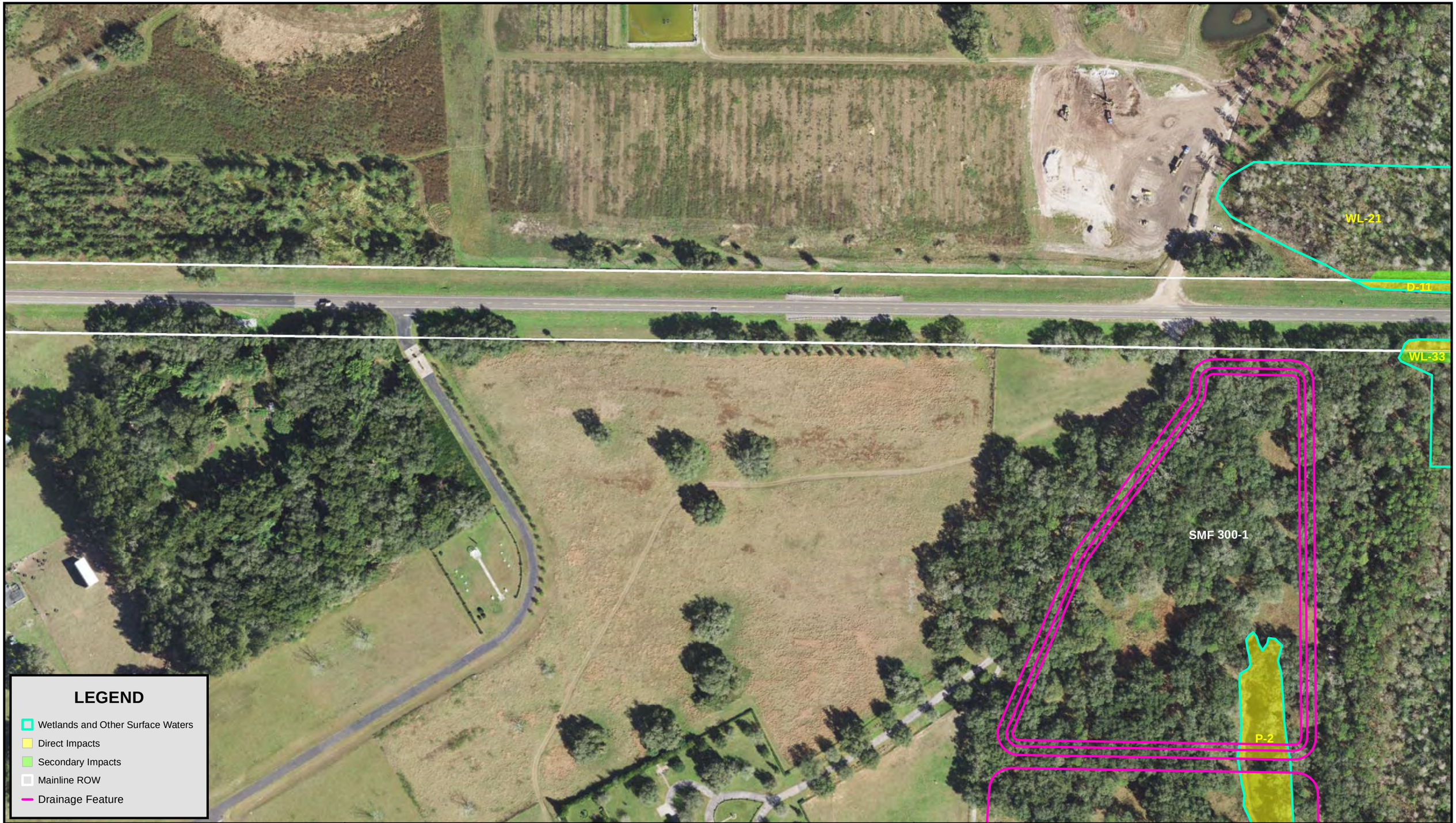
Feet

1 inch = 200 feet

Wetland Impact Maps

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, RK&K 2021



LEGEND

- Wetlands and Other Surface Waters
- Direct Impacts
- Secondary Impacts
- Mainline ROW
- Drainage Feature

FDOT

0 200 400

Feet

1 inch = 200 feet

Wetland Impact Maps

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, RK&K 2021

FDOT

0 200 400

Feet

1 inch = 200 feet

Wetland Impact Maps

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, RK&K 2021

FDOT

0 200 400

Feet

1 inch = 200 feet

Wetland Impact Maps

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, RK&K 2021

FDOT

0 200 400

Feet

1 inch = 200 feet

Wetland Impact Maps

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, RK&K 2021

FDOT

0 200 400
Feet
1 inch = 200 feet

Wetland Impact Maps

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, RK&K 2021

FDOT

0 200 400

Feet

1 inch = 200 feet

Wetland Impact Maps

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, RK&K 2021

SMF 800-1

NO WETLANDS/OTHER SURFACE WATERS THIS SHEET

LEGEND

- Wetlands and Other Surface Waters
- Mainline ROW
- Drainage Feature

FDOT

0 200 400

Feet

1 inch = 200 feet

Wetland Impact Maps

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, RK&K 2021

NO WETLANDS/OTHER
SURFACE WATERS
THIS SHEET

SMF 900-1

LEGEND

- Wetlands and Other Surface Waters
- Mainline ROW
- Drainage Feature

FDOT

0 200 400

Feet

1 inch = 200 feet

Wetland Impact Maps

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, RK&K 2021

N

NO WETLANDS/OTHER
SURFACE WATERS
THIS SHEET

SMF 900-1

LEGEND

- Wetlands and Other Surface Waters
- Mainline ROW
- Drainage Feature

FDOT

0 200 400

Feet

1 inch = 200 feet

Wetland Impact Maps

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, RK&K 2021

N

FDOT

0 200 400

Feet

1 inch = 200 feet

Wetland Impact Maps

US 98/SR 35/SR 700
from Polk County Line/CR 54 to US 301/SR 39/SR 41
FPID: 443368-2
Pasco County, Florida

Sources: ESRI 2021, RK&K 2021

N

APPENDIX J

Project UMAM Forms

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

Site/Project Name	Application Number	Assessment Area Name or Number
US 98 from CR 54 to US 301 PD&E Study		WL-4, WL-21, WL-22, WL-23, and WL-33

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
6150: Stream and Lake Swamps (bottomland)	PFO3	Impact	158.25 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)
Withlacoochee, HUC8 No.: 0.3100208	Class III	Special OFW – WL 21 only

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

These sites are forested systems that are hydrologically contiguous with the upper Hillsborough River. Adjacent uplands contain rural housing, livestock operations, and US 98.

Assessment area description

Forested wetlands adjacent to the Hillsborough River that contain canopy species such as bald cypress, slash pine, red maple, and sweetgum.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
US 98, CR 54, livestock pastures, and Boarshead Ranch Mitigation Bank	Common for the area

Functions	Mitigation for previous permit/other historic use
Offers habitat and foraging for multiple species, enhances water quality, and serves as a fire buffer.	These lands occur on land owned by the Southwest Florida Water Management District and on lands associated with the Boarshead Ranch Mitigation Bank

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
These areas are anticipated to provide habitat and foraging for: small mammals, wading birds, amphibians, reptiles, and fish	Eastern Indigo Snake – FT, possible foraging habitat Wood Stork – FT, possible foraging and roosting habitat Little Blue Heron, Roseate Spoonbill, and Tricolored Heron – ST, possible foraging and roosting habitat

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

Wood stork were observed flying over the site.

Additional relevant factors:

Assessment conducted by:	Assessment date(s):
Brett Berube	08/19/2021

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

Site/Project Name	Application Number	Assessment Area Name or Number
US 98 from CR 54 to US 301 PD&E Study		WL-4, WL-21, WL-22, WL-23, and WL-33
Impact or Mitigation Impact	Assessment conducted by: Brett Berube	Assessment date: 08/19/2021

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

		w/o pres or current	with
.500(6)(a) Location and Landscape Support	These systems are able to provide optimal support for most wildlife species, but this support is limited due the fragmentation by US 98, CR 54, and large upland developments such as the livestock pastures.	7	0
.500(6)(b)Water Environment (n/a for uplands)	Most hydrologic indicators were consistent with the expectations for this system type. However, natural hydrology has been disrupted by US 98, CR 54, upland developments, and associated stormwater management features.	8	0
.500(6)(c) Community structure 1. Vegetation and/or 2. Benthic Community	These systems have a majority of suitable species, but Peruvian primrose willow (an invasive) is present in areas of these systems.	7	0

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.73	0

Delta = [with-current]
-0.73

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

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

For impact assessment areas
FL = delta x acres = Roadway: Primary -0.73 x 8.52 = -6.22 SMF 200-1: Primary -0.73 x 6.85 = -5.00

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

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

Site/Project Name	Application Number	Assessment Area Name or Number
US 98 from CR 54 to US 301 PD&E Study		WL-4, WL-21, WL-22, WL-23, and WL-33
Impact or Mitigation Impact	Assessment conducted by: Brett Berube	Assessment date: 08/19/2021

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

.500(6)(a) Location and Landscape Support	w/o pres or current: 7	with: 6	These systems are able to provide optimal support for most wildlife species, but this support is limited due the fragmentation by US 98, CR 54, and large upland developments such as the livestock pastures.
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 8	with: 7	Most hydrologic indicators were consistent with the expectations for this system type. However, natural hydrology has been disrupted by US 98, CR 54, upland developments, and associated stormwater management features.
.500(6)(c) Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 7	with: 6	These systems have a majority of suitable species, but Peruvian primrose willow (an invasive) is present in areas of these systems.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres: 0.73	with: 0.63

Delta = [with-current]
-0.10

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

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

For impact assessment areas
FL = delta x acres = Roadway: Secondary -0.10 x 10.05 = -1.00 SMF 200-1: Secondary -0.10 x 1.35 = -0.14

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

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

Site/Project Name	Application Number	Assessment Area Name or Number
US 98 from CR 54 to US 301 PD&E Study		WL-1

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
6300: Wetland Forested Mixed	PFO3	Impact	4.02 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e., OFW, AP, other local/state/federal designation of importance)
Withlacoochee, HUC8 No.: 0.3100208	Class III	None

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

This site is a forested system that is hydrologically contiguous with the upper Hillsborough River. Adjacent uplands contain rural housing, livestock operations, CR 54, and US 98.

Assessment area description

Forested wetland adjacent to the US 98 that contains canopy species such as bald cypress, slash pine, red maple, and sweetgum.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
US 98, CR 54, livestock pastures, and Cell Tower	Common for the area

Functions	Mitigation for previous permit/other historic use
Offers habitat and foraging for multiple species, enhances water quality, and serves as a fire buffer.	

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
These areas are anticipated to provide habitat and foraging for: small mammals, wading birds, amphibians, reptiles, and fish	Eastern Indigo Snake – FT, possible foraging habitat Wood Stork – FT, possible foraging and roosting habitat Little Blue Heron, Roseate Spoonbill, and Tricolored Heron – ST, possible foraging and roosting habitat

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

Wood stork were observed flying over the site.

Additional relevant factors:

Assessment conducted by:	Assessment date(s):
Brett Berube	08/19/2021

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

Site/Project Name	Application Number	Assessment Area Name or Number
US 98 from CR 54 to US 301 PD&E Study		WL-1
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	Brett Berube	08/19/2021

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

.500(6)(a) Location and Landscape Support	w/o pres or current: 7	with: 0
This system is able to provide optimal support for most wildlife species, but this support is limited due the fragmentation by US 98, CR 54, and large upland developments such as the livestock pastures.		
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 8	with: 0
Most hydrologic indicators were consistent with the expectations for this system. However, natural hydrology has been disrupted by US 98, CR 54, upland developments, and associated stormwater management features.		
.500(6)(c) Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 7	with: 0
These systems have a majority of suitable species, but recruitment has been limited by adjacent pasture land use around the edges of this system.		

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.73	0

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

For impact assessment areas
FL = delta x acres = Roadway: Primary -0.73 x 0.51 = -0.37

Delta = [with-current]
-0.73

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

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

Form 62-345.300(2) [effective date 02-04-2004]
Incorporated by reference in paragraph 62-345.300(3)(b), F.A.C.

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

Site/Project Name	Application Number	Assessment Area Name or Number
US 98 from CR 54 to US 301 PD&E Study		WL-1
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	Brett Berube	08/19/2021

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

.500(6)(a) Location and Landscape Support	w/o pres or current: 7	with: 6
This system is able to provide optimal support for most wildlife species, but this support is limited due the fragmentation by US 98, CR 54, and large upland developments such as the livestock pastures.		
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 8	with: 7
Most hydrologic indicators were consistent with the expectations for this system. However, natural hydrology has been disrupted by US 98, CR 54, upland developments, and associated stormwater management features.		
.500(6)(c) Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 7	with: 6
These systems have a majority of suitable species, but recruitment has been limited by adjacent pasture land use around the edges of this system.		

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.73	0.63

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

For impact assessment areas
FL = delta x acres = Roadway: Secondary -0.10 x 0.41 = -0.04

Delta = [with-current]
-0.10

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

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

Form 62-345.300(2) [effective date 02-04-2004]
Incorporated by reference in paragraph 62-345.300(3)(b), F.A.C.

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

Site/Project Name	Application Number	Assessment Area Name or Number
US 98 from CR 54 to US 301 PD&E Study		WL-2 and WL-15

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
6410: Freshwater Marshes	PEM1	Impact	1.10 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e., OFW, AP, other local/state/federal designation of importance)
Withlacoochee, HUC8 No.: 0.3100208	Class III	None

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

These sites are non-forested systems that are hydrologically contiguous with the upper Hillsborough River. Adjacent uplands contain rural housing, livestock operations, and US 98.

Assessment area description

Emergent wetlands adjacent within rural pastures that contain species such as blue maidencane, soft rush, bushy bluestem, and pickerelweed.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
US 98, CR 54, and livestock pastures	Common for the area

Functions	Mitigation for previous permit/other historic use
Offers habitat and foraging for multiple species, enhances water quality, and serves as a fire buffer.	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
These areas are anticipated to provide habitat and foraging for: small mammals, wading birds, amphibians, reptiles, and fish	Eastern Indigo Snake – FT, possible foraging habitat Wood Stork – FT, possible foraging and roosting habitat Little Blue Heron, Roseate Spoonbill, and Tricolored Heron – ST, possible foraging and roosting habitat

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

Wood stork were observed flying over the site and a little blue heron was observed foraging nearby.

Additional relevant factors:

Assessment conducted by:	Assessment date(s):
Brett Berube	08/19/2021

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

Site/Project Name	Application Number	Assessment Area Name or Number
US 98 from CR 54 to US 301 PD&E Study		WL-2 and WL-15
Impact or Mitigation Impact	Assessment conducted by: Brett Berube	Assessment date: 08/19/2021

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

		w/o pres or current	with
.500(6)(a) Location and Landscape Support	These systems are able to provide optimal support for most wildlife species, but this support is limited due the fragmentation by the large upland developments such as the livestock pastures and residential areas. Due to the location of these systems, support to downstream systems is likely limited during the dry season.	6	0
.500(6)(b)Water Environment (n/a for uplands)	Most hydrologic indicators were consistent with the expectations for this system type. However, natural hydrology has been disrupted by US 98, CR 54, upland developments, and associated stormwater management features.	8	0
.500(6)(c) Community structure 1. Vegetation and/or 2. Benthic Community	These systems have a majority of suitable species, but these areas are grazed by cattle and mowed during the dry season, both of which limit the natural growth and recruitment of hydrophytic species.	7	0

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.70	0

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

For impact assessment areas
FL = delta x acres = Roadway: Primary -0.70 x 0.06 = -0.04

Delta = [with-current]
-0.70

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

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

Form 62-345.300(2) [effective date 02-04-2004]
Incorporated by reference in paragraph 62-345.300(3)(b), F.A.C.

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

Site/Project Name	Application Number	Assessment Area Name or Number
US 98 from CR 54 to US 301 PD&E Study		WL-2 and WL-15
Impact or Mitigation Impact	Assessment conducted by: Brett Berube	Assessment date: 08/19/2021

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

		w/o pres or current	with
.500(6)(a) Location and Landscape Support	These systems are able to provide optimal support for most wildlife species, but this support is limited due the fragmentation by the large upland developments such as the livestock pastures and residential areas. Due to the location of these systems, support to downstream systems is likely limited during the dry season.	6	5
.500(6)(b)Water Environment (n/a for uplands)	Most hydrologic indicators were consistent with the expectations for this system type. However, natural hydrology has been disrupted by US 98, CR 54, upland developments, and associated stormwater management features.	8	7
.500(6)(c) Community structure 1. Vegetation and/or 2. Benthic Community	These systems have a majority of suitable species, but these areas are grazed by cattle and mowed during the dry season, both of which limit the natural growth and recruitment of hydrophytic species.	7	6

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.70	0.60

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

For impact assessment areas
FL = delta x acres = Roadway: Secondary -0.10 x 0.05 = -0.01

Delta = [with-current]
-0.10

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

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

Form 62-345.300(2) [effective date 02-04-2004]
Incorporated by reference in paragraph 62-345.300(3)(b), F.A.C.

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

Site/Project Name	Application Number	Assessment Area Name or Number
US 98 from CR 54 to US 301 PD&E Study		WL-5

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
6430: Wet Prairies	PEM1	Impact	4.03 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e., OFW, AP, other local/state/federal designation of importance)
Withlacoochee, HUC8 No.: 0.3100208	Class III	None

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

This site is a non-forested systems that is hydrologically contiguous with the upper Hillsborough River. Adjacent uplands contain rural housing, livestock operations, and US 98.

Assessment area description

Emergent wetlands adjacent within rural pastures that contain species such as blue maidencane, bushy bluestem, and torpedograss.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
US 98, CR 54, and livestock pastures	Common for the area

Functions	Mitigation for previous permit/other historic use
Offers habitat and foraging for multiple species, enhances water quality, and serves as a fire buffer.	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
These areas are anticipated to provide habitat and foraging for: small mammals, wading birds, amphibians, reptiles, and fish	Eastern Indigo Snake – FT, possible foraging habitat Wood Stork – FT, possible foraging and roosting habitat Little Blue Heron, Roseate Spoonbill, and Tricolored Heron – ST, possible foraging and roosting habitat

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

Wood stork were observed flying over the site and a little blue heron was observed foraging nearby.

Additional relevant factors:

Assessment conducted by:	Assessment date(s):
Brett Berube	08/19/2021

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

Site/Project Name	Application Number	Assessment Area Name or Number
US 98 from CR 54 to US 301		WL-5
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	Brett Berube	08/19/2021

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

.500(6)(a) Location and Landscape Support	w/o pres or current: 6	with: 0
This system is able to provide optimal support for most wildlife species, but this support is limited due the fragmentation by the large upland developments such as the livestock pastures and residential areas. Due to the location of this system, support to downstream systems is likely limited during the dry season.		
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 8	with: 0
Most hydrologic indicators were consistent with the expectations for this system type. However, natural hydrology has been disrupted by US 98, CR 54, upland developments, and associated stormwater management features.		
.500(6)(c) Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 7	with: 0
This system has a majority of suitable species, but the area is grazed by cattle and mowed during the dry season, both of which limit the natural growth and recruitment of hydrophytic species.		

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.70	0

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

For impact assessment areas
FL = delta x acres = Roadway: Primary -0.70 x 0.20 = -0.14

Delta = [with-current]
-0.70

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

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

Form 62-345.300(2) [effective date 02-04-2004]
Incorporated by reference in paragraph 62-345.300(3)(b), F.A.C.

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

Site/Project Name US 98 from CR 54 to US 301 PD&E Study	Application Number	Assessment Area Name or Number WL-5
Impact or Mitigation Impact	Assessment conducted by: Brett Berube	Assessment date: 08/19/2021

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

.500(6)(a) Location and Landscape Support	w/o pres or current: 6	with: 5
This system is able to provide optimal support for most wildlife species, but this support is limited due the fragmentation by the large upland developments such as the livestock pastures and residential areas. Due to the location of this system, support to downstream systems is likely limited during the dry season.		
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 8	with: 7
Most hydrologic indicators were consistent with the expectations for this system type. However, natural hydrology has been disrupted by US 98, CR 54, upland developments, and associated stormwater management features.		
.500(6)(c) Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 7	with: 6
This system has a majority of suitable species, but the area is grazed by cattle and mowed during the dry season, both of which limit the natural growth and recruitment of hydrophytic species.		

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.70	0.60

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

For impact assessment areas
FL = delta x acres = Roadway: Secondary -0.10 x 0.43 = -0.04

Delta = [with-current]
-0.10

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

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

APPENDIX K

Sovereign Submerged Lands Coordination

FLORIDA DEPARTMENT OF
Environmental Protection

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, FL 32399

Ron DeSantis
Governor

Jeanette Nuñez
Lt. Governor

Noah Valenstein
Secretary

April 2, 2021

Mr. Brent Ivy, PSM
Florida Dept. of Transportation – District Seven
Surveying and Mapping Office
11201 McKinley Drive
Tampa, FL 33612

Re: US 98 Bridge Over Hillsboro River, Pasco County

Dear Mr. Ivy,

This letter is in response to your recent inquiry based on the information provided, requesting a submerged lands determination of state-owned lands in Section 34, Township 25 South, Range 22 East; Pasco County.

Currently there is insufficient information and documentation to determine whether the submerged lands at this site are state owned. We recommend that the proprietary requirements normally applied to state owned lands not be applied to this site.

There are no Board of Trustees Easements or leases at the subject site.

The conclusions stated herein are based on a review of records currently available within the Department of Environmental Protection as supplemented, in some cases, by information furnished by the requesting party. Additional records will be reviewed if provided.

Should you have any questions regarding this determination, please contact Sarah Branham, Government Operations Consultant II, at mail station 108 at the above address or call at (850) 245-2788.

Sincerely,

Karen McMillan for

Scott Woolam, Bureau Chief
Division of State Lands
Bureau of Survey and Mapping
SW/sb
F:\TITLE\Sarah\2021\TITLE DETERMINATIONS\PASCO\WS 120156\LETTER TO Brent Ivy