Natural Resources Evaluation

Florida Department of Transportation

District Seven

Branch Forbes Road Project Development and Environment (PD&E) Study

Limits of Project: From South of US 92 to North of I-4

Hillsborough County, Florida

Work Program Item Segment Number: 447159-1

ETDM Number: 14470

Date: October 2024

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

Branch Forbes Road

Project Development & Environment (PD&E) Study
From South of US 92 to North of I-4

Natural Resources Evaluation

Work Program Item Segment No. 447159-1
ETDM Project No. 14470
Hillsborough County, Florida

Prepared for:

Florida Department of Transportation
District Seven

In Coordination with:

Hillsborough County Florida

Prepared by:

Consor Engineers, LLC
2818 Cypress Ridge Boulevard, Suite 200
Wesley Chapel, FL 33544

October 2024

Draft

Executive Summary

The Florida Department of Transportation (FDOT) District 7, in coordination with Hillsborough County, is conducting a Project Development and Environment (PD&E) study along Branch Forbes Road from south of US 92 to north of Interstate 4 (I-4), in Hillsborough County. The study focuses on widening the existing two-lane undivided facility to a four-lane divided facility roadway and includes pedestrian and bicycle accommodations. The proposed improvements will include construction of stormwater management facility (SMF) and floodplain compensation (FPC) sites. The study evaluates traffic operations, safety, access management and freight movements. Operational improvements are also being evaluated for the I-4 interchange ramps.

This *Natural Resources Evaluation* (NRE) analyzes potential impacts to federal and state listed and protected species and their habitats, wetlands, and essential fish habitat (EFH). Identification of measures to avoid, minimize and mitigate any potential impacts is also discussed. This NRE documents the results of geographic information system (GIS) data, field reviews, coordination to date with regulatory agencies, including comments received through the Efficient Transportation Decision Making (ETDM) process, and aerial interpretation for potential impacts to the resources listed above. Coordination is being conducted with federal and state agencies throughout the study process. This NRE was conducted in accordance with the FDOT PD&E Manual and State and Federal natural resources regulations.

Protected Species and Habitat

The study area was assessed for the presence of suitable habitat for federal and/or state listed and protected species in accordance with *50 Code of Federal Regulations (CFR) Part 402 of the Endangered Species Act (ESA) of 1973*, as amended, *Chapter 5B-40: Preservation of Native Flora of Florida, Florida Administrative Code (F.A.C.), Chapter 68A-27: Rules Relating to Endangered or Threatened Species, F.A.C.* and 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. Thirty (30) species (8 Federally listed, 17 State listed, 4 Federally protected, 1 State protected) were evaluated based on species ranges including Hillsborough County.

USFWS Critical Habitat

The study area was evaluated for critical habitat in accordance with 50 CFR 17 and the FDOT *PD&E Manual*. Review of the U.S. Fish and Wildlife Service's (USFWS) available GIS data resulted in the identification of no critical habitat within the study area. Any future modifications to the project design are subject to revaluation of critical habitat in the area.

Potential Species Effect Determination Summary

Species	Common Name	State Status (FWC)	Federal Status (USFWS)	Effect Determination
REPTILES				
Drymarchon corais couperi	Eastern indigo snake	FT	T	MANLAA
Gopherus polyphemus	Gopher tortoise	ST	--	No adverse effect anticipated
Lampropeltis extenuata	Short-tailed snake	ST	PT	No effect anticipated
Pituophis melanoleucus	Florida pine snake	ST	--	No effect anticipated
BIRDS				
Ammodramus savannarum floridanus	Florida grasshopper sparrow	FE	E	No effect
Antigone canadensis pratensis	Florida sandhill crane	ST	--	No adverse effect anticipated
Aphelocoma coerulescens	Florida scrub jay	FT	T	No effect
Athene cunicularia floridana	Florida burrowing owl	ST	--	No effect anticipated
Egretta caerulea	Little blue heron	ST	--	No effect anticipated
Egretta refescens	Reddish egret	ST	--	No effect anticipated
Egretta tricolor	Tricolored heron	ST	--	No effect anticipated
Falco sparverius paulus	Southeastern American Kestrel	ST	--	No effect anticipated
Grus americana	Whooping crane	--	EXPN	--
Haliaeetus leucocephalus	Bald eagle[1]	--	--	--
Laterallus jamaicensis jamaicensis	Eastern black rail	FT	T	No effect
Mycteria americana	Wood stork	FT	T	MANLAA
Platea ajaja	Roseate spoonbill	ST	--	No effect anticipated
Polyborus plancus audubonii	Audubon's Crested Caracara	FT	T	No effect
Rostrahamus sociabilis plumbeus	Everglade snail kite	FE	E	No effect
INSECTS				
Danaus plexippus	Monarch butterfly	--	C	--
MAMMALS				
Ursus americanus floridanus	Florida black bear[2]	--	--	--

MANLAA=May Affect, Not Likely to Adversely Affect
C= Candidate Species, EXPN= Experimental population, Non-essential, E= Endangered, FE= Federal Endangered T=Threatened, FT=Federal Threatened, PT= Proposed Threatened, ST=State-designated Threatened --=Not Listed,
[1] Protected under the Bald and Golden Eagles Protection Act (16 U.S.C. § 668-668c)
[2] Protected under the Florida Black Bear Conservation Rule (68A-4.009, F.A.C.)

Potential Floral Species Effect Determinations

Species	Common Name	State Status (FDACS)	Federal Listed (USFWS)	Habitat	Effect Determination
Chionanthus pygmaeus	Pygmy fringe-tree	SE	E	Scrub, sandhills, and xeric hammocks; primarily in the Lake Wales Ridge	No effect
Lechea cernua	Nodding pinweed	ST	--	Open, unshaded white sands of scrub and scrubby flatwoods.	No effect anticipated
Listera australis	Southern twayblade	ST	--	Low moist woodlands such as baygalls, mesic and wet flatwoods, ravines, banks of streams, and hydric hammocks	No effect anticipated
Matalea floridana	Florida spiny-pod	SE	--	Sandhill, upland pine, and dry hammocks	No effect anticipated
Pogonia ophioglossoides	Rose pogonia	ST	--	Wet prairie marshes, seepage slopes, wet roadside ditches	No effect anticipated
Polypodium ptilodon	Plume polybody	SE	--	Rockland hammocks, strand swamps, and wet woods; often on tree bases and fallen logs	No effect anticipated
Platanthera nivea	Snowy orchid	ST	--	Wet flatwoods and prairies	No effect anticipated
Spiranthes longilabris	Giant spiral ladies tresses	ST	--	Wet prairies and flatwoods	No effect anticipated
Zephyranthes simpsonii	Redmargin zephyrlily	ST	--	Wet flatwoods and meadows, ditches and wet pastures; often in burned over areas	No effect anticipated

FDACS=Florida Department of Agriculture and Consumer Services (FDACS)
E=Endangered, SE=State-designated Endangered
ST=State-designated Threatened

Wetlands and Other Surface Waters

Pursuant to *Executive Order 11990* entitled *Protection of Wetlands*, the U.S. Department of Transportation (USDOT) has 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. Wetland mitigation options include purchase of wetland mitigation credits through an approved mitigation bank, or creation, restoration, or enhancement of wetlands within the project watersheds. 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 U.S.C. § 1344*.

Wetlands and other surface waters were classified based on the National Wetland Inventory (NWI), Florida Land Use, Cover & Forms Classification System (FLUCCS), and the USFWS guidelines. There are forested and non-forested wetlands within the project study area which were field verified by project scientists in June 2024. Based on the Preferred Alternative, approximately 15.65 acres of wetlands and other surface waters occur within the study area. Direct impacts would result in approximately 0.88 acre of wetland and 0.02 acre of surface water.

Potential Wetland and Other Surface Waters Impacts

	Type of Wetland or Other Surface Waters	FLUCCS	NWI	Project Impact Acreage	Functional Loss
Project Totals	*Hydric Pine Savanna*	626	PFO1C	0.49	0.01
	Stream and Lake Swamps (Bottomland)	615	PFO2F	0.39	0.12
			Total Wetlands	0.88	0.17
	Streams and Waterways	510	R2UBHx	0.02	<0.01
			Total Other Surface Waters	0.02	<0.01
			Project Total	0.90	0.13

Functional loss values are derived from the Uniform Mitigation Assessment Method (UMAM)

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 preferred alternative evaluation resulted in an estimated UMAM functional loss of 0.17 units.

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 United States Code (U.S.C.) §1344. Wetland mitigation options include purchase of wetland mitigation credits through an approved mitigation bank, or creation, restoration, or enhancement of wetlands within the project watersheds. 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, Wiggins Prairie Mitigation Bank, Fox Branch Ranch, Two Rivers Mitigation Bank, and the North Tampa Mitigation Bank. 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 (EO) 11990: *Protection of Wetlands and USDOT 5660.1A: Preservation of the Nation's Wetlands*, 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. In order to do this, design variations for border width, median width, and/or side slopes are being sought.
- 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

This study was evaluated for Essential Fish Habitat (EFH) in accordance with the requirements of the *Magnuson-Stevens Fishery Conservation and Management Act* of 1996 (MSA) and the FDOT *PD&E Manual*. There is no EFH located within the study area; therefore, there will be no involvement with EFH for this project.

Table of Contents

Figures

Tables

Appendices

Acronyms

BMPs	Best Management Practices
BGEPA	Bald and Golden Eagle Protection Act
CFA	Core Foraging Area
CFR	Code of Federal Regulations
EFH	Essential Fish Habitat
EO	Executive Order
EPA	Environmental Protection Agency
ERP	Environmental Resource Permit
ESA	Endangered Species Act
ETDM	Efficient Transportation Decision Making
ETAT	Environmental Technical Advisory Team
FAC	Federal Advisory Committee
FCA	Floodplain Compensation areas
FDACS	Florida Department of Agriculture & Consumer Services
FDEP	Florida Department of Environmental Protection
FDOT	Florida Department of Transportation
FGDL	Florida Geographic Data Library
FGIO	Florida Geographic Information Office
FLUCCS	Florida Land use and Cover Classification System
FNAI	Florida Natural Areas Inventory
FNPS	Florida Native Plant Society
FPC	Floodplain Compensation Site
FT	Foot (feet)
FWC	Florida Fish and Wildlife Conservation Commission
GIS	Geographic Information System
I-4	Interstate 4
IPaC	Information for Planning and Consultation
LA ROW	Limited Access Right-of-Way
MB	Mitigation Bank
MBTA	Migratory Bird Treaty Act
MSA	Magnuson-Stevens Fishery Conservation and Management Act of 1996
NEPA	National Environmental Policy Act

NMFS	National Marine Fisheries Service
NPDES	National Pollution Discharge Elimination System
NRCS	Natural Resources Conservation System
NRE	Natural Resources Evaluation
NWI	National Wetlands Inventory
OEM	Office of Environmental Management
PD&E	Project Development and Environment
PSSR	Programming Screen Summary Report
RIBITS	Regulatory In-Lieu Fee and Bank Information Tracking System
ROW	Right-of-Way
SFH	Suitable Foraging Habitat
SHCA	Strategic Habitat Conservation Areas
SMF	Stormwater Management Facility
SWFWMD	Southwest Florida Water Management District
SWPPP	Stormwater Pollution Prevention Plan
TPO	Transportation Planning Organization
US 92	U.S. Highway 92
USACE	United States Army Corps of Engineers
USDOT	United States Department of Transportation
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service

Section 1 Introduction

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 Branch Forbes Road and operational improvements at the I-4 interchange, including SMF and FPC sites. This PD&E 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, intersection enhancement alternatives, and interchange operational improvements. 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 (ROW) acquisition, and construction].

1.1 Project Description

The project consists of reconstructing Branch Forbes Road to widen the roadway to accommodate future capacity needs from south of US Highway 92 (US 92) to north of Interstate 4 (I-4), in Hillsborough County, a distance of approximately 0.8 miles. A project location map is provided as **Figure 1-1**. Improvements will include widening the roadway to a four-lane divided facility and also include adding curb and gutter and a 10-foot (ft) wide shared use path on both sides to accommodate bicycles and pedestrians. The project also includes operational improvements at the I-4 interchange and construction of stormwater management facilities (SMF) and floodplain compensation (FPC) sites. Within the project limits, Branch Forbes Road, named Forbes Road south of US 92, is a two-lane undivided facility. Branch Forbes Road/Forbes Road is a Hillsborough County roadway and functionally classified as collector road with an existing posted speed limit of 35 miles per hour (mph) along most of the project limits.

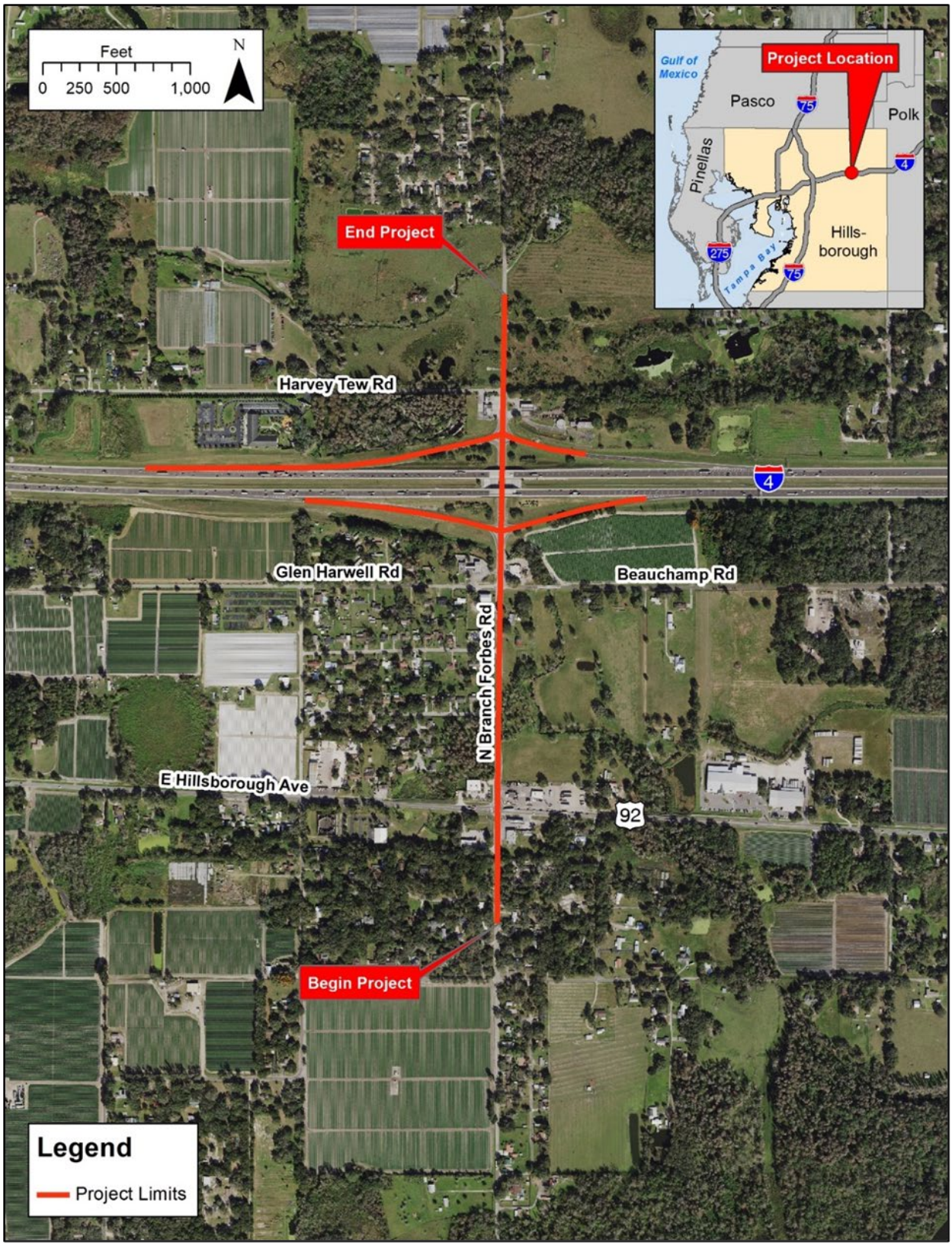
This project was screened through the FDOT's Efficient Transportation Decision Making (ETDM) process as ETDM Project No. 14470. The ETDM Programming Screen Summary Report was published on September 23, 2021, containing comments from the Environmental Technical Advisory Team (ETAT) on the project's effects on various natural, physical, and social resources. A Type 2 Categorical Exclusion is the class of action for this PD&E study.

1.2 Existing Facility and Proposed Improvements

1.2.1 Existing Facility

Branch Forbes Road is owned and maintained by Hillsborough County, except for just south of the I-4 interchange ramps to just north of the ramps where the limited access is maintained by FDOT. Within the project area Branch Forbes Road is currently a two-lane undivided facility functionally classified as a County Collector and has a posted speed limit of 35 mph within the project and 45 mph south and north of the project limits.

Figure 1-1 | Project Location Map



The existing lanes vary in width from 10 to 11 ft along the corridor, and there are unpaved shoulders on both sides of the road that are approximately 2 to 5 ft wide. Existing Branch Forbes Road within the project limits has no bicycle lanes, sidewalks or other facilities for pedestrians and bicyclists, except for two small segments of sidewalk on the west side of Branch Forbes Road, one north of the US 92 intersection and the other south of I-4. North and south of the I-4 interchange area, the existing ROW varies from 46.5 to 76 ft wide. The existing limited access ROW (LA ROW) ranges from 100 to 190 ft wide.

1.2.2 Proposed Improvements

The proposed typical section includes a four-lane divided curb and gutter facility with a 22-ft wide raised median. There will be two 11-ft travel lanes in each direction with a 10-ft wide shared use path on both sides of the road. The proposed ROW will vary along the corridor, with a minimum of 106 feet. The proposed typical section is provided as **Figure 1-2** and through the I-4 interchange are as **Figure 1-3**. Operational improvements are proposed along the I-4 interchange ramps, at the I-4 interchange ramp terminal intersections and at the US 92 intersection. The improvements include signalizing the ramp intersections, adding turn lanes, providing access management and other safety and operational enhancements. No improvements to the I-4 mainline are included as part of this study.

Figure 1-2 | Branch Forbes Road – Proposed Typical Section

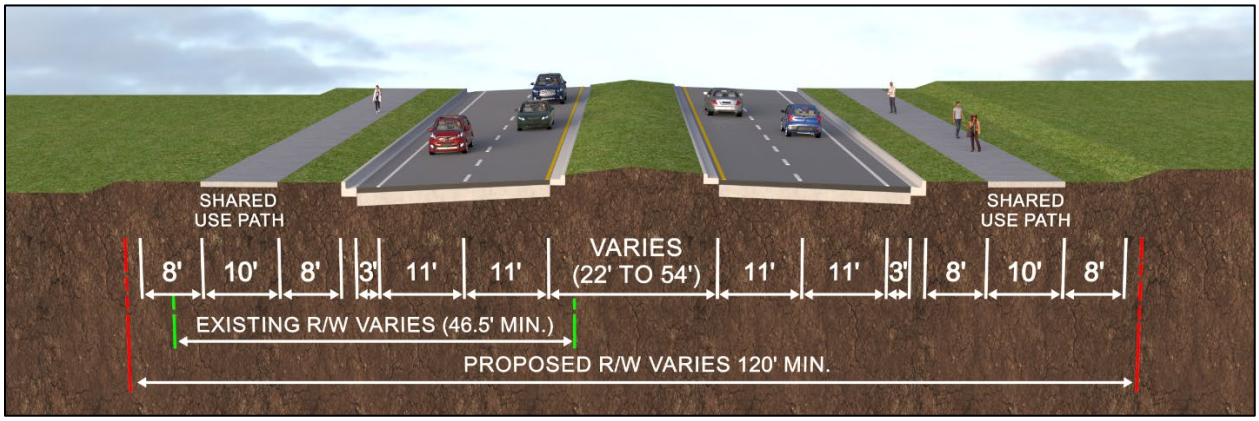
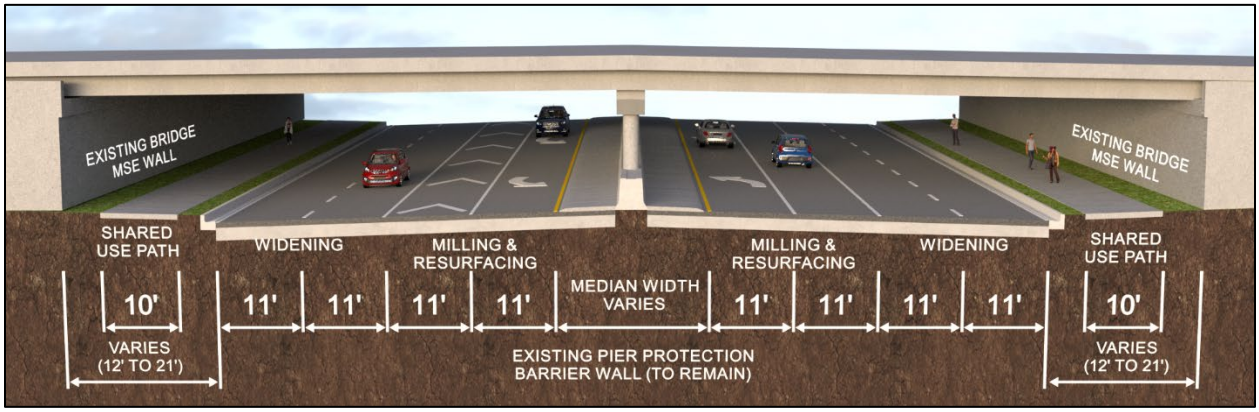


Figure 1-3 | Branch Forbes Road – Proposed Typical Section Under I-4



1.3 Report Purpose

This *Natural Resources Evaluation* (NRE) documents existing federal and state listed and protected faunal and floral species resources and habitat types found within the study area, and the potential for occurrences of these species and their suitable habitat, in accordance with *50 Code of Federal Regulation (CFR) Part 402* of the Endangered *Species Act (ESA) of 1973*, as amended, *Chapters 5B-40 and 68A-27, Florida Administrative Code* (*F.A.C.)*, and the FDOT *PD&E Manual*. Potential impacts to Essential Fish Habitat (EFH) were evaluated in accordance with the requirements of the *Magnuson-Stevens Fishery Conservation and Management Act of 1996* (MSA) and FDOT PD&E Manual. Potential impacts to protected habitats that may support these species are also addressed in this report.

This report also documents the proposed project's involvement with wetlands and other surface waters. Pursuant to Presidential *Executive Order 11990* entitled *Protection of Wetlands*, (May 1977) the U.S. Department of Transportation (USDOT) has 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 the FDOT *PD&E Manual* a No-Build and Preferred Alternative were assessed to determine potential impacts to wetlands and other surface waters associated with each alternative.

1.4 Study Area

The limit of disturbance for the proposed improvements, including the SMFs and FPC sites, is referred to as the project action area throughout the report. To evaluate land use, a buffer of 500-feet was used from the centerline of Branch Forbes Road. The project action area with the buffer is referred to as the project study area, as defined by 50 CFR § 402.02.

Section 2 Existing Environmental Conditions

The project extends from approximately where Branch Forbes Road crosses Ward Road to north of Harvey Tew Road and from the eastbound ramp of I-4 to the westbound ramp of I-4. The project study area is relatively rural with a majority of the land uses consisting of low density residential, commercial properties along Branch Forbes Road, and uplands. The following sections discuss the land uses/cover types and soil present within the project study area.

2.1 Existing Land Use

The land uses and vegetative covers within and adjacent to the study area were classified using FDOT's *Florida Land Use, Cover and Forms Classification System* (FLUCCS). FLUCCS data, aerial photographs, and additional wetland data from the National Wetlands Inventory (NWI) were utilized to determine current land uses and habitat types within the study area. The land uses and habitat types within the study area were subsequently ground-truthed for verification during a field visit in April 2024. The land uses are reported according to identified FLUCCS. A 500-foot buffer from the centerline of Branch Forbes Road/Forbes Road (shown in Appendix B) established the Project Study Area.

The project study area, located in Hillsborough County, is mostly developed consisting of low, medium, and high-density residential areas, transportation services, agricultural lands, and commercial services. The predominant land uses within the study area are as follows: 23.59% residential (FLUCCS 110, 120, & 130), 19.10% transportation services (FLUCCS 810), 24.51% agricultural lands (FLUCCS 210, 214, & 224), and 19.80% commercial and services (FLUCCS 140) (Table 2-1).

Table 2-1 Existing Land Use/Land Cover

FLUCCS Code	Description	Acreage (Approx. 500' from Centerline)	Percent Cover
110	Residential Low Density	38.41	16.45%
120	Residential Medium Density	14.64	6.27%
130	Residential High Density	2.03	0.87%
140	Commercial and Services	46.21	19.80%
190	Open Land	6.5	2.78%
210	Cropland and Pastureland	35.58	15.24%
214	Row Crops	13.29	5.69%
224	Abandoned Grove	8.36	3.58%
320	Shrub and Brushland	3.40	1.46%
410	Upland Coniferous Forest	2.75	1.18%
434	Upland Hardwood-Coniferous Mix	2.04	0.87%
510	Streams and Waterways	3.80	1.61%
530	Reservoirs	0.46	0.20%
615	Stream and Lake Swamps (Bottomland	7.25	3.11%
626	Hydric Pine Savanna	1.63	0.70%
631	Wetland Shrub	1.12	0.48%
641	Freshwater Marshes	0.09	0.04%
643	Wet Prairies	0.70	0.30%
644	Emergent Aquatic Vegetation	0.63	0.27%
810	Transportation	44.59	19.10%
	TOTAL	233.47	100%

2.2 Existing Upland Habitats

Land use within the study area is primarily low, medium, and high-density housing developments, as well as transportation areas, commercial services, and agricultural lands. There are very limited areas of natural upland habitat within the project study area. The vast majority of historic pinelands and mixed forests have been converted to agricultural fields, in varying levels of active use, as well as to residential or commercial properties. The upland communities are classified according to FLUCCS. A field review, performed in April 2024, confirmed vegetation community types and any potential for occurrence of protected plant and wildlife species. The land cover communities identified are described below.

Improved pasture (FLUCCS 211)

The pastures are being used part-time for cattle at a very low stocking rate (< 1 per acre). These areas show mowing at least twice a year. The areas have historic drainage ditches across the fields feeding into small (<36-inch) and shallow waters (less than 12-inches), with event flushes showing elevations of 30-inches being common. There are small areas that have been excavated to serve as watering holes. These fields could be used for forage and loafing by Florida sandhill cranes (*Grus canadensis pratensis*).

Unimproved pasture (FLUCCS 212)

The pastures are dominated with Bahia grass (*Paspalum notatum*), with pioneer species interspersed, and small shrubs along field edges. Incidental species include Black nightshade (*Solanum americanum*), broomsedge (*Andropogon* spp.), Bushmint (*Hyptis verticillate*), Ceasar weed (*Urena lobate*), chickweed (*Stellaria media*), purslane (*Portulaca oleracea*), and creeping indigo (*Indigofera spicata*). These areas are mowed within an annual routine. There is no indication of fields being used for cattle or horses. The thick thatch and standing herbaceous pioneer vegetation makes these fields of limited value to Florida sandhill cranes, which prefer open, patchy fields, with exposure of soils for identifying forage of beetles, grubs, other insects, small retiles, as well as seasonal seeds and fruits.

Row crops (FLUCCS 214)

These areas show active annual use for strawberries. The rows and furrows are well maintained. The areas are fallow, without cover crop, outside of the January to March strawberry season. No cover crop is planted. Some of the fields have year-round plastic mulch over the planting rows. These areas provide minimum ecological value being denuded of even herbaceous vegetation, thus offering little forage and only open loafing space. The open space leaves exposure to predators, including a population of feral cats.

Abandoned Groves (FLUCCS 224)

These areas are abandoned and converted to unimproved pasture citrus groves. The areas have been out of fruit production for more than a decade (based upon review of aerials). The lands have been managed intermittently for hay and pasture. The grounds still show the historic agricultural works of rows and furrows. The soils are covered with a mix of grasses and vascular pioneer herbaceous vegetation. The fields are mowed once to twice annually. The cuttings are not harvested. There are signs of small mammal use of eastern gray squirrels (*Sciurus carolinensis*), raccoons (*Procyon lotor*), Virginia opossums (*Didelphis virginiana*), and cottontail rabbits (*Sylvilagus floridanus*). Red shoulder hawks (*Buteo lineatus*) and red tail hawks (*Buteo jamaicensis*) were observed soaring and in trees near the open fields. Florida sandhill cranes () could use these fields for forage and loafing; however, they are unsuitable to support nesting sites.

Upland Coniferous Forests (FLUCCS 410)

These are areas of second growth pine; they are not plantations. If historically forested, these areas no longer show silviculture rows. The pines are slash pines (*Pinus elliotti*). There is minimal recruitment. The present stands are 20-30 years old on average. This patch of tree cover runs across multiple parcels of low density residential.

Upland Hardwood - Coniferous Mix (FLUCCS 434)

This class is reserved for forested areas in which neither conifers nor hardwoods achieve a 66 percent crown canopy dominance. This patch has mature live oaks (*Quercus virginiana*) and slash pine with an understory of small patches of various grouping including occurrences of saw palmetto (*Serona repens*), beauty berry (*Callicarpa americana*), panicgrasses (*Dichanthelium spp.*), and broomsedges. Live oaks are out-recruiting pines. The area has been a maturing patch of live oaks for 30 years.

2.3 Existing Wetland and Other Surface Water Habitats

Wetlands and jurisdictional other surface waters were identified adjacent to or within the ROW, as well as the preferred SMF and FPC sites and summarized in **Table 2-2**. The majority of the wetlands are herbaceous

systems consisting of freshwater marshes, as well as stream and lake swamps. Wetlands and other surface waters that have the potential to be impacted by the proposed project improvements have been classified by the FLUCCS codes as well as the United States Fish & Wildlife Service's (USFWS) *Wetlands and Deepwater Habitats Classifications*. Representative site photographs can be found in **Appendix C**, and a detailed wetland and other surface water map depicting the anticipated impacts, which includes the preferred SMF and FPC sites, can be found in **Appendix D**.

Table 2-2 Existing Wetlands

Land Use or Cover Type	FLUCCS Code	Total Acres	Percent of Study Area
Streams and Waterways	510	3.77	1.61
Reservoirs	530	0.46	0.20
Stream and Lake Swamps (Bottomland)	615	7.25	3.11
Hydric Pine Savanna	626	1.63	0.70
Wetland Shrub	631	1.12	0.48
Freshwater Marshes	641	0.09	0.04
Wet Prairies	643	0.70	0.30
Emergent Aquatic Vegetation	644	0.63	0.27
	TOTAL	15.66	6.71

Stream and Waterways (FLUCCS 510, 0.80 ac.)

This is a curvilinear feature (SW-2), known as Spartman Branch, whose natural configuration has been broken by I-4 on the northern end. The on ramps mark the end of the natural stream. There are detention areas within the I-4 corridor which also stop the natural flows. The stream connects into prairie wetlands which flow into swamp lands to the west, and flows into Spartman Branch and its associated floodplain wetland forests. The stream shows significant variations in flow, by the cuts, oxbows, and wash lines along its length. The stream has a Bank-full channel width of 7-10 feet. The stream has minimal caving, indicating the stream rises and recedes at uniform rates in response to rainfall, and that there is a relatively consistent baseflow. The stream had no collection of debris along any of the length within the project area. This reflects that surface flows into the stream are not at a scale to move larger materials, e.g., shed branches, in the surrounding fields.

The stream is deeply inset into the landscape, averaging 42-48-inches. There are no shrubs growing within the Project Study Area stream corridor. Herbaceous materials grow along the edges, and the base of embankments. These include water mint (*Mentha aquatica*), Duck potato (*Sagittaria latifolia*), bahiagrass (*Paspalum notatum*), alligator weed (*Alternanthera philoxeroides*), and others. Mosquito fish (*Gambusia holbrooki*) were observed, along with signs of small crawfish and chironomids larvae.

Stream and Lake Swamps (Bottomlands) (FLUCCS 615, 7.25 ac.)

These areas (WL-7 and WL-8) are forested wetlands that are inundated most of the year. Trees in these wetlands include bald cypress (*Taxodium distichum*), sweetgum, and water oak (*Quercus nigra*). There are low-lying emergent and shrub species scattered throughout the area including swamp bay (*Persea palustris*), button bush (*Cephalanthus occidentalis*), and cabbage palm (*Sabal palmetto*). Smartweed (*Persicaria spp.)* and maiden cane (*Panicum hemitomon*) may be found along the edges. Species that may

utilize these wetlands include the little blue heron, wood stork, gopher frog, and Florida sandhill crane. No protected species were observed during field reviews.

Hydric Pine Savanna (FLUCCS 626, 3.11 ac.)

This area is managed, mowed and harvested, as indicated by the lack of deep thatch. This category represents WL-3 and WL-6. The dominant herbaceous cover is Bahiagrass. Areas near the road have Mexican clover (*Richardia brasiliensis*), pepperweed (*Lepidium virginicum*), and trail daisy (*Sphagneticola trilobata*). There are scattered herbaceous species of dock (*Rumex sanguineus)* and nutsedges (*Cyperus spp.*). There are scattered slash pine that have slightly swollen bases indicating seasonal root saturation, as well as scattered bald cypress. There are small (<8 ft clear truck) cabbage palms and small (< 12-inch BDH) live oaks in thickets. There are depressional pockets that hold rainwater. Tracks indicate Florida sandhill cranes walk this area, which is presumed to be foraging and loafing. Songbirds (eastern cardinal: *Cardinalis cardinalis*; common mockingbird: *Mimus polyglottos*; Carolina wren: *Poecile carolinensis*; tufted titmouse: *Baeolophus bicolor*) and harriers (red shouldered hawk and red tailed hawk) were observed during the field review. The red-shouldered hawk settled on pines in this patch, and the red-tailed hawk circled the general area.

Wetland Shrub (FLUCCS 631, 1.12 ac.)

This area (WL-3) is covered by woody vegetation less than 20 feet tall. It is dominated by grasses and shrubs, bahiagrass, ludwigia, and others. There are trees, mainly small live oaks, on the edges. This shrub wetland likely holds water during high rainfall events, providing retention for stormwater runoff from the roadway. Florida grasshopper sparrows may be found foraging in this wetland. No species were observed during field review.

Reservoirs (FLUCCS 530, 0.46 ac.)

There is a small dug, constructed, cattle watering pond. This area (SW-1) was excavated within a depressional area of property being used as unimproved pasture; it still has a few cattle being run. The cattle pond has patches of wetland plants on its edges, but also has mowed pasture on majority of its edge. The pond has significant algae, and historic aerials show algal growth dominated the pond in some years. Clearly the pond has seasonal conditions of very low dissolved oxygen, collapsing any aquatic animal populations.

Wet Prairies (FLUCCS 643, 0.70 ac.)

This is a small mesic area bordering adjoining lands to the east that were orange groves 15 years ago. It (WL-5) is small, less than 0.50 acres, are at the upper end of depressional drains to small ponds, which have been present for 40-plus years. Live oaks and slash pine have grown, with no shrub layer, and the herbaceous layer mowed routinely. The adjoining ponds show coverage with algae during most years. There is no indication of use by wetland species.

Emergent Aquatic Vegetation (FLUCCS 644, 0.63 ac.)

This category of wetland plant species includes both floating vegetation and vegetation which is found either partially or completely above the surface of the water. This area (WL-2) is a constructed retention–infiltration area. The area is constrained by a constructed earthen berm. The area mapped as emergent is the lower fifty percent of the drainage feature. The edges are dominated by black willow (*Salix nigra*) and elderberry (*Sambucus nigra*); at the slope base are Andropogon species. The area has a ledge that is most

often dry and mowed; it is scalped to the ground annually. The moist soil edges showed no tracks. Unidentified birds could be seen flitting amongst the shrubs and small tree branches.

2.4 Soils

The Natural Resource Conservation Service (NRCS) *Soil Survey of Hillsborough County* (1989) and geographic information system (GIS) data indicate that there are multiple soil types within the study area. Soils within a 500-foot buffer from the centerline of Branch Forbes Road were evaluated. Acreages and percentages of soil types within the study buffer can be found in **Table 2-3.** A detailed soils map can be found in **Appendix E**. The dominant soil types in the project area and their soil map unit identification numbers are as follows: Lake fine sand, 0 to 2 percent slopes (25); Basinger, Holopaw, and Samsula soils, depressional (5); Gainesville loamy fine sand, 0 to 5 percent slopes (19). Brief descriptions of dominant soil types are as follows.

Lake fine sand, 0 to 2 percent slopes (25) - This soil is nearly level to gently sloping and excessively drained. A seasonal high-water table is at a depth of more than 80 inches. Permeability is rapid. The available water capacity is very low or low. The natural vegetation consists of bluejack oak (*Quercus incana*), Chapman oak (*Quercus chapmanii*), scrub oak (*Quercus inopina*), live oak and turkey oak (*Quercus cerris*). The understory includes lopsided Indiangrass (*Sorghastrum secundum*), running oak (*Quercus pumila*), and pineland threeawn (*Aristida stricta*).

Basinger Holopaw, and Samsula soils, depressional *(Hydric)* (5) – This soil is nearly level and very poorly drained. These soils exist in swamps and depressions on the flatwoods. Generally, Basinger soil is along the exterior of swamps or in shallow depressions. Holopaw and Samsula soils are in the interior areas of the swamps or in deeper depressions. Undrained areas are frequently ponded for very long periods. The slope is 0 to 2 percent. Characteristically, these soils are frequently ponded for long periods. In most years, these undrained soils can be seasonally ponded. Permeability is rapid in Basinger and Samsula soils. It is rapid in the surface and subsurface layer of Holopaw soil and moderately low or moderate in the subsoil. The available water capacity is low in Basinger soil, low or moderate in Holopaw soil, and high in Samsula soil. The natural vegetation consists of cypress (*Taxodium distichum* var. *distichum*). The understory includes bluestem (*Schizachyrium* spp.), maidencane (*Panicum hemitomon*), panicum (*Panicum* spp.), Jamaica sawgrass (*Cladium jamaicense*), and cutgrass (*Leersia* spp.).

Gainesville loamy fine sand, 0 to 5 percent slopes (19) - This soil is nearly level to gently sloping and well drained. it is on the uplands. A seasonal high-water table is at a depth of more than 72 inches. Permeability is rapid. The available water capacity is low. The natural vegetation consists of bluejack oak, live oak, turkey oak, and slash pine (*Pinus elliottii*). The understory includes lopsided indiangrass, panicum, and pineland threeawn.

Table 2-3 Existing Soils (NRCS)

Map Unit Symbol	Description	Study Area Acreage	Study Area Percent Cover
3	Archbold fine sand	15.13	6%
5	Basinger, Holopaw, and Samsula soils (depressional) – hydric	57.19	25%
18	Fort Meade loamy fine sand	31.63	2%
19	Gainesville loamy fine sand, 0 to 5 percent slopes	35.4	15%
25	Lake fine sand, 0 to 2 percent slopes	70.7	30%
29	Myakka fine sand, 0 to 2 percent slopes	1.6	1%
33	Ona fine sand	2.4	1%
46	St Johns fine sand – hydric	14.5	6%
47	Seffner fine sand	11.2	5%
53	Tavares-Millhopper fine sands, 0 to 5 percent slopes	12.5	5%
61	Zolfo fine sand, 0 to 2 percent slopes	9.0	4%
	TOTAL	233.47	100.00%

2.5 Preservation Areas

No preservation areas exist within the project study area.

Section 3 Protected Species and Habitat

The study area was assessed for the presence of suitable habitat for federal and/or state listed and protected species in accordance with *50 CFR Part 402 of the ESA of 1973*, as amended, *Chapter 5B-40: Preservation of Native Flora* of *Florida*, *F.A.C., Chapter 68A-27: Rules Relating to Endangered or Threatened Species, F.A.C.*, and the Protected Species and Habitat chapter of the FDOT *PD&E Manual*.

3.1 Methodology and Assessment

Literature reviews, agency database searches and coordination, analysis of GIS data, and field reviews were conducted in order to determine protected species and potential suitable habitat that exists within the project corridor. Field reviews consisted of a mix of vehicular and pedestrian surveys. Field surveys identified existing vegetation communities and conditions. Identification efforts consisted of identifying dominant plant species, their size, condition, compositional place within identified ecosystem, and landscape position within the surrounding area.

Prior to field surveys, while in the field, and post surveys, academic assessment is made for potential use by wildlife not observed.

The density at which field surveys are physically conducted depends upon specifics of a site's physical conditions: line of sight, variability of vegetive cover, variability of the landscape matrix, physical structures (stones, hills, sloughs, etc.), biological structures, and wildlife observations. Vegetation communities (ecosystems including wetlands and surface waters) are identified by routine identification standards of *Florida Land Use, Cover and Forms Classification System* (FDOT, 1999), *The Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979), *Ecosystems of Florida* (Myers and Ewel, 1990*), Florida Wetlands Delineation Manual* (FDEP, 1195), other(s) as cited. Protected species status is identified by species lists published by US Fish and Wildlife Service (USFWS), State of Florida, and local authorities. Species under consideration for protection, i.e., review for listing/candidate species, are included. Special protections for waters such as Outstanding Florida Waters, Water Quality Conditions under the Clean Water Act, and similar, are taken from published lists by US Environmental Protection Agency and the State of Florida.

Information sources and databases utilized include the following:

- USFWS GIS Database(s)
- USFWS Information for Planning and Conservation (IPaC)
- Florida Natural Areas Inventory (FNAI) GIS Database(s)
- Florida Fish and Wildlife Conservation Commission (FWC) GIS Database(s)
- Soil Survey of Hillsborough County, Florida
- FWC – Strategic Habitat Conservation Areas (SHCA) (1994)
- USFWS – Critical Habitat for Threatened and Endangered Species
- USFWS – Wood Stork Colony Core Foraging Areas (CFA) 2010-2019 (15-mile radius)
- ETDM Project #14470, Programming Screen Summary Report (PSSR), published 09/23/2021.
- NWI GIS Data

- Southwest Florida Water Management District (SWFWMD) GIS Data
- Florida Geographic Data Library (FGDL)
- Florida Geographic Information Office (FGIO)
- Audubon Florida EagleWatch Nest Application (2023)

Field surveys were completed in April 2024 and June 2024. The physical extents of field surveys were within the existing ROW of Branch Forbes Road, including the preferred SMF and FPC sites. Field conditions were documented.

The IPaC (Information for Planning and Consultation) report identified species that have no potential for occurring within the project area. These include the hawksbill sea turtle (*Eretmochelys imbricata*), leatherback sea turtle (*Dermochelys coriacea*), and loggerhead sea turtle (*Caretta caretta*). Since the project study area has no coastal marine and estuarine habitats, there will be no effect on these federally listed sea turtles; therefore, they are not further discussed in this document. See Appendix F for the IPaC report. The list of potentially occurring protected species was developed, with each species assigned a designation of none, low, moderate, or high likelihood or probability for occurrence within the study area. If a species or species indicator was observed during field reviews, it is specifically identified. Table 3-1 lists the federal and state listed and protected faunal species with the potential to occur within the study area, based on availability of potentially suitable habitat and known ranges. Table 3-2 provides the same information for federal, and state listed and protected floral species. Definitions noted on Table 3-1 and Table 3-2 for likelihood of occurrence are provided below:

None – Species is known to occur in Hillsborough County, no suitable habitat is present in the project study area and/or immediately adjacent areas, historic recorded occurrences were not indicated in the study area, surveys have confirmed a lack of presence, and/or the species is precluded from the area based on its habitat preferences or life history.

Low – Species with a low likelihood of occurrence within the study area are defined as those species that are known to occur in Hillsborough County or the bioregion, but suitable habitat is limited within the study area, or the species is rare or has been extirpated.

Moderate – Species with a moderate likelihood of occurrence are those species known to occur in Hillsborough County or nearby counties, and for which suitable habitat is well represented within the study area, but no observations or positive indications exist to verify their presence.

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

Table 3-1 Potentially Occurring and Observed Listed and Protected Wildlife Species

Species	Common Name	State Status (FWC)	Federal Status (USFWS)	Habitat	Probability of Occurrence
REPTILES					
Drymarchon corais couperi	Eastern indigo snake	FT	T	Hydric hammock, palustrine, sandhill, scrub, upland pine forest, mangrove swamp	Low
Gopherus polyphemus	Gopher tortoise	ST	--	Sandhills, scrub, xeric oak hammock, and dry pine flatwoods; along with pastures, old fields, and road shoulders	Low
Lampropeltis extenuata	Short-tailed snake	ST	--	Well-drained sandy soils, particularly longleaf pine/xeric oak sandhills, but also scrub and xeric hammock habitats	Low
Pituophis melanoleucus	Florida pine snake	ST	--	Relatively open canopies and dry sandy soils.	Low
BIRDS					
Ammodramus savannarum floridanus	Florida grasshopper sparrow	FE	E	Dry open prairies with bunch grasses, low shrubs, and saw palmetto	None
Antigone canadensis pratensis	Florida sandhill crane	ST	--	Basin marsh, depression marsh, dry prairie, marl prairie, pastures	High
Aphelocoma coerulescens	Florida scrub jay	FT	T	Sand pine, xeric oak scrub, scrubby flatwoods, ancient sandy ridges, old sand dunes, sandy deposits	Low
Athene cunicularia floridana	Florida burrowing owl	ST	--	High, sparsely vegetated, sandy ground; dry prairie and sandhill; ruderal areas	Low
Egretta caerulea	Little blue heron	ST	--	Stream, Pond, Swamp	Moderate
Egretta refescens	Reddish egret	ST	--	Coastal mangrove islands and Brazilian pepper on manmade dredge spoil islands; broad, open marine tidal flats and shorelines with little vegetation; salt evaporation pools and lagoons	None
Egretta tricolor	Tricolored heron	ST	--	Mangrove islands or willow thickets in fresh water, woody thickets on islands or over standing water; seasonally flooded wetlands	Low
Falco sparverius paulus	Southeastern American Kestrel	ST	--	Open habitats, woodland edges, prairies, and pastures; sandhills and flatwoods	None
Grus americana	Whooping crane	--	EXPN	Wetlands, marshes, prairies, and agricultural fields	None

Haliaeetus leucocephalus	Bald eagle	--	--	Coastal areas, bays, rivers, lakes, or other bodies of water with concentrations of food sources; crowns of mangroves	None
Laterallus jamaicensis jamaicensis	Eastern black rail	FT	T	Dense vegetative cover; grasslands, coastal, and wetlands	None
Mycteria americana	Wood stork	FT	T	Inundated forested wetlands, cypress strands and domes, mixed hardwood swamps, sloughs, and mangroves; nesting in artificial habitats	Moderate
Platea ajaja	Roseate spoonbill	ST	--	Coastal mangrove islands, man-made dredge spoil islands, willow heads, shallow freshwater, marine tidal flats and ponds, costal marshes, mangrove-dominated inlets and pools, and freshwater sloughs and marshes	Low
Polyborus plancus audubonii	Audubon's Crested Caracara	FT	T	Wet prairies with cabbage palms; wooded areas with saw palmetto, cypress, scrub oaks and pastures	Low
Rostrahamus sociabilis plumbeus	Everglade snail kite	FE	E	Large open freshwater marshes and lakes with shallow water; low density of emergent vegetation	Low
INSECTS					
Danaus plexippus	Monarch butterfly	--	C	Open fields, roadside areas, wet areas, and urban gardens where milkweed and flowering plants exist	Low
MAMMALS					
Ursus americanus floridanus	Florida black bear	--	--	Palustrine, terrestrial, pine flatwoods, sand pine scrub, cypress swamps	Low

FT=Federal Threatened, T=Threatened, PT= Proposed Endangered, ST=State-designated Threatened, C=Candidate for listing under ESA, FE=Federal Endangered, E=Endangered, --=Not Listed, EXPN = Experimental Population, Non-essential

[1] Protected under the Bald and Golden Eagles Protection Act (16 U.S.C. § 668-668c)

[2] Protected under the Florida Black Bear Conservation Rule (68A-4.009, F.A.C.)

Table 3-2 Potentially Occurring and Observed Listed Plant Species

Species	Common Name	State Status (FDACS)	Federal Listed (USFWS)	Habitat	Probability of Occurrence
Chionanthus pygmaeus	Pygmy fringe-tree	SE	E	Scrub, sandhills, and xeric hammocks; primarily in the Lake Wales Ridge	None
Lechea cernua	Nodding pinweed	ST	--	Open, unshaded white sands of scrub and scrubby flatwoods.	Low
Listera australis	Southern twayblade	ST	--	Low moist woodlands such as baygalls, mesic and wet flatwoods, ravines, banks of streams, and hydric hammocks	Low
Matalea floridana	Florida spiny-pod	SE	--	Sandhill, upland pine, and dry hammocks	Low
Pogonia ophioglossoides	Rose pogonia	ST	--	Wet prairie marshes, seepage slopes, wet roadside ditches	Low
Polypodium ptilodon	Plume polybody	SE	--	Rockland hammocks, strand swamps, and wet woods; often on tree bases and fallen logs	Low
Platanthera nivea	Snowy orchid	ST	--	Wet flatwoods and prairies	Low
Spiranthes longilabris	Giant spiral ladies tresses	ST	--	Wet prairies and flatwoods	Low
Zephyranthes simpsonii	Redmargin zephyrlily	ST	--	Wet flatwoods and meadows, ditches and wet pastures; often in burned over areas	Low

FE=Federal Endangered, SE=State Endangered, T=Threatened, ST=State-designated Threatened DL= De-listed, --=Not Listed

3.2 Coordination with Resource Agencies

Agency coordination was conducted as part of the ETDM screening and Advanced Notification review process. The ETDM screening process was used to become aware of any issues noted by the commenting agencies. The Programming Screen Summary Report (PSSR) was published September 23, 2021. Regulatory agencies included in the Programming Screen were USFWS, FWC, Florida Department of Agriculture and Consumer Services (FDACS), SWFWMD, and the Hillsborough County Transportation Planning Organization (TPO). Much of the coordination for potential species occurrence was conducted electronically utilizing databases from USFWS, FWC, SWFWMD and FNAI. A summary of the relevant agency comments during the ETDM screening is provided below.

3.2.1 U.S. Fish and Wildlife Service

The USFWS stated that the action area falls within the CFA of the wood stork (*Mycteria americana*) (Appendix G). Depending upon the design of the project direct impacts should be avoided. To minimize adverse effects to the wood stork and other wetland dependent species, USFWS recommended that impacts to suitable foraging habitat be avoided. If avoidance is not possible, minimization measures should be employed and best management practices (BMPs) to avoid further degradation of the site, including erosion, siltation, and nutrient discharges associated with the project site. The USFWS recommended that the project be designed to avoid these valuable resources to the greatest extent practicable. If impacts to wetlands are unavoidable, USFWS recommended that the FDOT provide mitigation that fully compensates for the loss of wetland resources. USFWS determined the proposed project may result in minimal impacts to protected wildlife and habitat resources. The project is not expected to have further consultation with USFWS.

3.2.2 Florida Fish and Wildlife Conservation Commission

The FWC identified numerous federal and state endangered and threatened species that may exist within the project study area, as well as species that are part of the state's Imperiled Species Management Plan, including: red cockaded woodpecker (*Leuconotopicus borealis*), wood stork, Florida scrub jay (*Aphelocoma coerulescens),* eastern indigo snake (*Drymarchon corais couperi*), little blue heron (*Egretta caerulea*), tricolored heron (*Egretta tricolor*), Florida burrowing owl (*Athene cunicularia floridana*), Southeastern American kestrel (*Falco sparverius Paulus*), Florida pine snake (*Pituophis melanoleucus*), gopher tortoise (*Gopherus polyphemus*) and Florida black bear (*Ursus americanus floridanus*). The Florida gopher frog (*Lithobates capito*) was delisted in 2017 and is no longer a state listed species; therefore, special considerations do not need to be made for this species during roadway construction. The FWC found the project falls within the consultation areas of the crested caracara (*Caracara plancus audubonii*), Florida scrub jay (*Aphelocoma coerulescens*), and Florida grasshopper sparrow (*Ammodramus savannarum*). The project is within the CFA of the wood stork, and within the Occasional Range of the Florida black bear.

The FWC stated the primary wildlife issues associated with this project includes the potential loss of habitat, the potential for increased vehicular mortality events, and potential water quality degradation because of additional stormwater runoff from the new roadway surface draining onto adjacent lands. FWC believes that direct and indirect effects of this project could be minimal provided that wetland and upland habitat impacts are properly avoided and minimized, or appropriately mitigated; and stormwater pond sites are strategically located to avoid productive wetlands, forested well drained xeric upland habitats, and especially public lands.

3.2.3 Florida Department of Agriculture and Consumer Services

The FDACS stated that resources be impacted by project activities include dry prairie, Priority 1 aquifer recharge areas, Priority 4 surface water resources, freshwater marsh and swamp.. The Brooksville bellflower (*Campanula robinsiae*), Florida bonamia (*Bonamia grandiflora*), Florida goldenaster (*Chrysopsis floridana*), and pygmy fringe-tree (*Chionanthus pygmaeus*) may occur adjacent to the project study area. Use best management practices, including silt fencing, to protect wetlands and surface waters from construction impacts. The FDACS recommended the use of Best Management Practices (BMPs)to protect wetlands and other surface waters from construction impacts and contaminants. These BMPs may include containment booms and silt fencing. The FDACS recommended the following: surveys for rare and listed plants should be conducted, and if present, should be protected to the degree possible; or translocated to a suitable alternative site by an organization such as the Florida Native Plant Society (FNPS); mitigation for lost wetlands may be required; decontaminating equipment and machinery to prevent the spread of invasive; non-native plants is recommended; and efforts should be made to minimize or mitigate impacts to rural lands and agricultural operations.

3.2.4 Southwest Florida Water Management District

The SWFWMD stated that coordination with FWC for potential caracara, scrub jay, Florida grasshopper sparrow, black bear sites and other threatened or endangered species may also be required after additional wildlife survey(s) of the proposed site at the time of design. The SWFWMD stated an environmental resource permit (ERP) will be required; however, the final determination of the type of permit will depend upon the final design configuration.

The SWFWMD assigned a DOE of "Minimal" since wetlands will need to be delineated, quantified, and labeled as part of the permit review. They will require a delineation of the landward extent of wetland and surface water features by a qualified environmental scientist, pursuant to Chapter 62-340, F.A.C, as located within the defined project limits. They stated hydrologic connections for roadside ditches will need to be modified in order to accommodate the proposed improvements. They commented that surface water impacts may have a de minimis impact on fish and wildlife habitat. Wetland mitigation may not be required to offset these impacts. Coordination with SWFWMD is recommended to minimize or eliminate wetland and/or surface water impacts during pond construction.

3.2.5 National Marine Fisheries Service

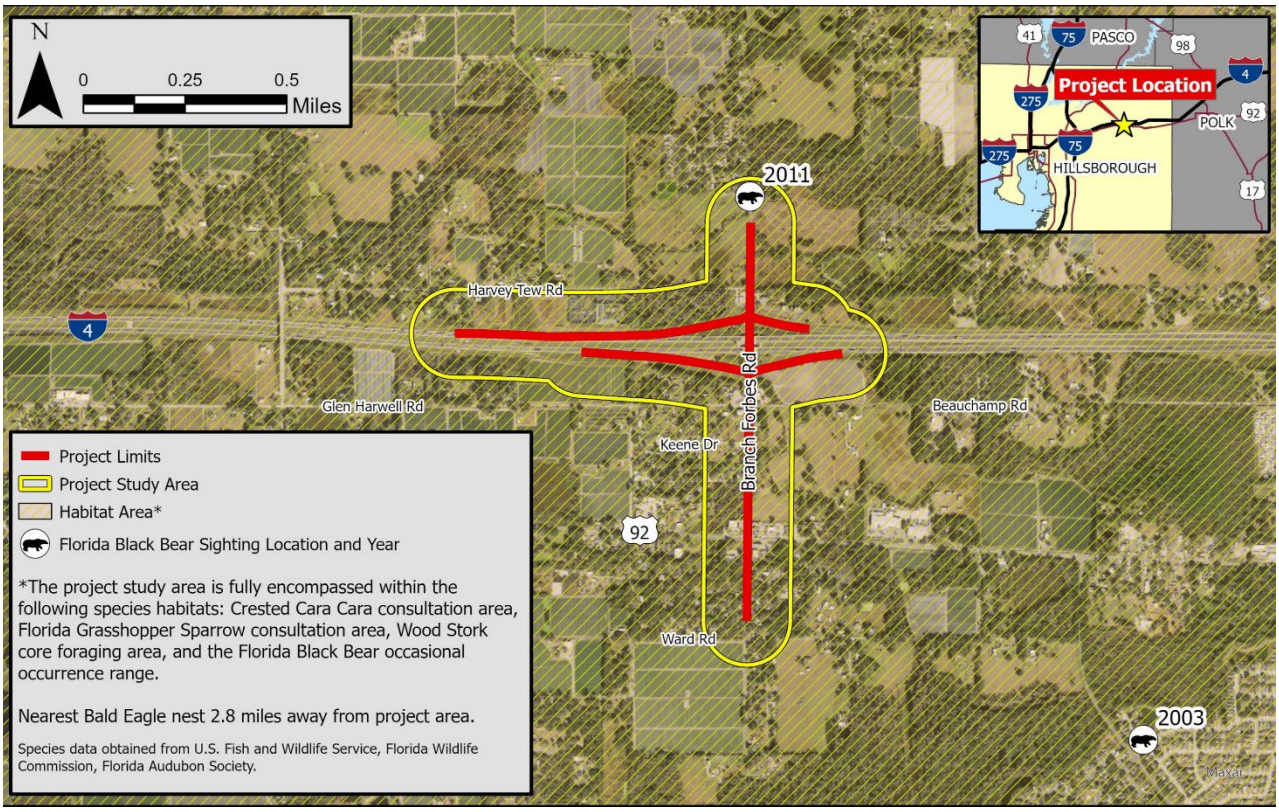
The National Marine Fisheries Service (NMFS) assessed potential concerns regarding living marine resources. NMFS commented that none of the natural resources to be affected in this project are within NMFS' jurisdiction. No EFH is located within the study area; therefore, there will be no involvement with EFH for this project.

3.3 Survey Results

Field reconnaissance of the study area was conducted in April and June 2024. These efforts were conducted by a qualified scientist and included pedestrian surveys of habitats within the study area.

Figure 3-1 provides an overview of the recent observations and historical occurrences of listed and protected species that have a potential to occur within or adjacent to the project study area. Descriptions are provided in the sections below for those species which have been observed within or have a potential to occur in habitats identified within the vicinity of the study area.

Figure 3-1 | Species Occurrences



3.4 Federally Listed Faunal Species

No federally threatened or endangered species were observed within the project corridor during the field reviews/surveys. Data for species occurrences were analyzed from USFWS, NMFS, FNAI and FWC. This section discusses federally-listed species that have the potential to occur within the project corridor. Although the USFWS IPaC identified the hawksbill sea turtle, leatherback sea turtle, and loggerhead sea turtle as having the potential to occur within the project study area, suitable habitat is more than 25 miles from the project study area. Therefore, these species were excluded from further analysis. The effect determinations for each of the species, provided below, are for the Preferred Alternative since there would be no effect on protected species or their habitat by the No Build alternative.

3.4.1 Eastern Indigo Snake

The eastern indigo snake is federally and state listed as threatened. The eastern indigo snake occurs in a wide variety of habitats, including forested uplands and wetlands as well as wet and dry prairies, pine flatwoods, scrubby flatwoods, floodplain edges, sand ridges, dry glades, tropical hammocks, muckland fields, coastal dunes, and xeric sandhill communities, and along ecotones of wetland ecosystems. The eastern indigo snake may utilize gopher tortoise burrows, holes, cavities, and other refugia for protection. No individuals were observed during the April 2024 field survey. However, small patches of poor-quality habitat for this species occur within the study area. These small areas within the project study area are connected into a habitat matrix of low suitability for the eastern indigo snake. Further, the high traffic volume, with vibrations from force and sound, would keep the reclusive snake away from the project

corridor. The probability of occurrence for the eastern indigo snake within the project area is low. No records of occurrence were identified in the project's vicinity. The nearest documentation of this species is northeast of the project in the Lower Green Swamp Preserve, recorded in 1997. There were no gopher tortoise burrows observed. There is low quality suitable habitat occurring within the project area.

To ensure the protection of this species during construction the FDOT will require that the USFWS's *Standard Protection Measures for the Eastern Indigo Snake* (Appendix H) be part of the environmental controls of the final project design. When the study advances to permitting and construction phases, the most current guidelines will be used. The revised August 2013 *USFWS Concurrence Letter to U.S. Army Corps of Engineers Regarding Use of the Eastern Indigo Snake Programmatic Effect Determination Key* (Appendix I) was used for this study. The determination of may affect, not likely to adversely affect was made for the eastern indigo snake (A→B→C→ MANLAA).

3.4.2 Florida Grasshopper Sparrow

The Florida grasshopper sparrows inhabit dry open prairies that contain bunch grasses, low shrubs, and saw palmetto. The native prairie habitat required by this species is not found within the project area. Any open grass land evaluated as part of this project is highly disturbed and commercially maintained as crop or landscaping purposes. With no habitat, the species occurrence was identified as none in the project area. the project will have no effect on the Florida Grasshopper Sparrow.

3.4.3 Florida Scrub Jay

The Florida scrub jay is a small bird species, similar in size and shape to the blue jay. It is currently classified as threatened status nationally due to loss of habitat and fire suppression that has caused scrub habitat to become overgrown. It inhabits fire-demanded, low-growing, oak scrub habitat found on well-drained sandy soils. It may persist at much lower densities in areas with sparse oaks or overgrown scrub areas with reduced survivorship (FNAI 2023).

The project study area was surveyed for signs of potential scrub jay usage in April 2024; this species was not observed during field review. The nearest documented occurrence of this species was in 2007, southwest of the project study area in Gibsonton. There are no documented occurrences of this species within the project study area. Within the project area, there are no oak scrub habitats that would elicit scrub jay usage. There are sparse oaks throughout the study area, but no overgrown scrub areas. It is possible that this species may inhabit the study area at lower densities impermanently. The probability of occurrence is low, and therefore there is predicted to be no effect on this species.

3.4.4 Whooping Crane

The whooping crane in central Florida is a Federally-designated non-essential experimental population, which is defined as a population that has been established within its historical range under Section 10(j) of the ESA to aid in its recovery. The USFWS has determined a non-essential population is not necessary for the continued existence of the species. Whooping cranes utilize a variety of habitats including coast marshes and estuaries, inland marshes, lakes, open ponds, shallow bays, salt marsh, pastures and agricultural fields, and sand or tidal flats. Whooping cranes occurred naturally in the eastern United States until the mid-twentieth century with records of whooping cranes in Florida until the 1930s. However, the only natural whooping crane nesting population currently is located in Wood Buffalo National Park (Canada) that winters in Aransas National Wildlife Refuge (Texas). The 2011 Five-Year Review of the Whooping Crane (USFWS) identified four populations of whooping cranes, two of which are in Florida. There is a non-

migratory population in Central Florida that the FWC introduced between 1993 and 2005. This effort was stopped in 2008 due to survival and reproduction problems. The FWC Fish and Wildlife Research Institute (FWRI) is also involved in a multi-agency project to restore migratory whooping cranes to the eastern United States. Between 2001 and 2017, cranes were taught a migration route using ultra-light aircraft from Wisconsin to Florida. The experimental population never used areas this far south in the peninsula.

This species was identified as part of the IPaC report; however, IPaC provides the broadest potential of occurrence, to set a list of species to be considered. The whooping crane would not occur within this study's location. The probability of occurrence is none; the project will have no effect on the whooping crane.

3.4.5 Eastern Black Rail

The eastern black rail is federally and state listed as threatened. The eastern black rail may be found in salt and brackish marshes as well as densely vegetated upper tidal marshes along the Gulf coast from Florida to Texas. This species has been occasionally observed in inland marshes of the Florida peninsula, though prevalence is largely uninvestigated.

Suitable habitat is not present within the project area. Moreover, no individuals were observed during the April 2024 field survey. There are no historical observations of the eastern black rail within the project area, and the probability of occurrence is none. An effect determination of no effect was made for the eastern black rail.

3.4.6 Wood Stork

The wood stork is federally listed as threatened. Wood storks utilize freshwater and estuarine habitats for nesting, foraging, and roosting. Wood storks typically are colonial nesters and construct their nests in medium to tall trees located within wetlands or on islands.

The project is located within the 15-mile CFA of three wood stork; however, the study is not within 2,500 feet of a colony site (Appendix G). There have not been any documented occurrences of wood storks within the project study area. As defined by the USFWS, Suitable Foraging Habitat (SFH) for wood storks includes wetlands and other surface waters which have areas of water that are relatively calm, uncluttered by dense thickets of aquatic vegetation, and have permanent or seasonal water depth between 2 and 15 inches, with fish sized > 3-inches. Based upon these criteria, SFH is minimal (< 0.50 ac.) and very poor quality within the study area. The constricted shapes of streams present in the project study area makes them unsuitable foraging area. Additionally, stormwater ponds do not show fish of suitable forage sizes (4-8 inches) and are too small for birds to loaf near. The project is anticipated to impact 0.88 acre of wetlands and 0.02 acre of other surface waters; total functional losses are 0.17 acres. Mitigation options will be investigated further during the final design phase of the study. Using the *Effect Determination Key for the Wood Stork in Central and South Peninsular Florida* (Appendix J) it has been determined the project may affect, not likely to adversely affect the wood stork [A→B→C (Project impacts to SFH are less than or equal to 0.5 acre) → MANLAA].

3.4.7 Audubon's Crested Caracara

The Audubon's crested caracara is federally listed as threatened. It inhabits large prairies and pastures in south-central Florida. Crested caracaras prefer nesting in cabbage palms but have also been reported to nest in other tree species. The project study area is within the USFWS' caracara consultation area. 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 and none have been documented in the vicinity of

the project study area (FNAI 2023). 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 low and is designated as no effect.

3.4.8 Everglade Snail Kite

The Everglade snail kite is a subspecies of snail kite that is designated by the USFWS as endangered. The Everglade snail kite is a medium-sized hawk with a wingspan of about 45 inches. A distinguishing feature is their long, curved bill used for picking apple snails (*Ampullariidae spp.)* from their shells. The breeding season varies widely from year to year as it is in response to seasonal water levels. Generally nesting occurs between January to May. Nest sites are over water in shrubs and low trees, usually 3-15 feet above water.

Suitable habitat for this species is not present within the study area and no individuals were observed during the April 2024 field survey. Pursuant to the *Snail Kite Management Guidelines,* if a snail kite nest is identified within 1,640-feet of the active work area, work must stop while a report of the nest is provided to the construction project administrator and the nest site coordinated with the FDOT's Office of Environmental Management. Due to limited presence of suitable habitat, no observations identified in historical records or project field surveys, potential occurrence only when young birds distribute equaling no probability as relates to species support, and the study area not being within an area that has confirmed snail kite activity, the probability of occurrence is low. The project will have no effect on the Everglade snail kite.

3.4.9 Monarch Butterfly

The monarch butterfly was identified as a candidate species for protection under the ESA by the USFWS on May 3, 2022. It is not yet proposed for listing and does not have designated critical habitat. Within North America, the monarch butterfly is a highly migratory species. This species requires a diversity of blooming nectar resources but of particular importance is milkweed (*Asclepias* spp.) upon which eggs are laid and serves as forage for caterpillars. Milkweed was not observed within the project area. Monarchs could forage on wildflowers within the project area, but due to maintenance activities and dominance of commercial development, this potential will be limited. Thus, the occurrence of monarchs is expected to be limited, and incidental to the species moving through the area. The probability of occurrence is low.

As this species is currently a candidate species and not currently proposed for listing, consultation for this species is not required at this time. Further impact assessment for the species and a formal federal effect determination for the monarch butterfly may be required in the future should it be listed. If the monarch butterfly is listed by USFWS as Threatened or Endangered and the project may affect the species, FDOT commits to re-initiating consultation with USFWS to determine appropriate avoidance and minimization measures for protection of the newly listed species.

3.5 Federal Listed Floral Species

The study area was evaluated for the potential occurrence of federally listed plant species based upon previous documentation of occurrence within Hillsborough County identified by IPaC, and the ETDM report. IPac listed the Pygmy Fringe-Tree as having the potential to occur within the project area. No federally listed plant species were observed in the study area during field reviews. Design phase plant surveys will be conducted prior to construction.

3.5.1 Pygmy Fringe-tree

The pygmy fringe-tree is federally listed as endangered. This species is endemic to the sandy soils of dry hammocks and pine forests in central Florida, primarily on the Lake Wales Ridge. In natural conditions, fire ecology maintains the open patches required by this species. This small tree is usually less than 10 feet tall with the stems often buried in sand. The twigs are gray, and the somewhat leathery, yellow-green leaves are two to four inches long. The white flowers, which bloom in spring, are less than one half inch long, each with four narrow petals, in showy clusters. Though the recommended survey times occur when the tree blooms in spring, survey efforts can be accomplished year-round due to other characteristics, unique in combination for this species. There are no documented occurrences of the pygmy fringe-tree in the project area and no individuals were observed during the April 2024 field review. The ecosystems used by the plant, scrub, sandhill, or xeric hammock, are not within the project area. The probability of occurrence is none. Therefore, a determination of no effect was made for the pygmy fringe-tree.

3.6 USFWS Critical Habitat

The study area was evaluated for Critical Habitat in accordance with 50 CFR 17 and the FDOT *PD&E Manual*. Review of the USFWS's available GIS data resulted in the identification of no critical habitat within the study area; therefore, the project will result in no destruction or adverse modification of critical habitat. Any modifications to the project design are subject to a revaluation of critical habitat in the area.

3.7 State Listed Faunal Species

State listed wildlife species which have been identified by the FWC as occurring or having a potential for occurrence in the vicinity of the project area include the gopher tortoise, short-tailed snake, Florida pine snake, Florida sandhill crane, Florida burrowing owl, and protected wading birds including the little blue heron, tricolored heron, and reddish egret.

3.7.1 Gopher Tortoise

The gopher tortoise is a state-designated threatened species by the FWC. Preferred habitats include xeric areas with sandy soils and open canopies. No burrows were identified within the project study area. Potential habitat areas were walked with 100% visual coverage, with no individuals or burrows observed. Suitable habitat is within and adjacent to the preferred SMF and FPC sites. This species has not been documented within the project study area.

Impacts to suitable habitat are limited to grassy roadsides where Branch Forbes Road will be widened. Comprehensive surveys for tortoises and their burrows will be conducted prior to construction per the most recent FWC *Gopher Tortoise Permitting Guidelines*. Any construction activities that occur within 25 feet of a potentially occupied gopher tortoise burrow will require coordination with FWC and relocation of these tortoises to a FWC approved recipient site. The probability of occurrence for this species is low. Since the gopher tortoise population will be resurveyed prior to construction and current rules require the relocation of the species, an effect determination of no adverse effect anticipated was made for the gopher tortoise.

3.7.2 Short-Tailed Snake

The short-tailed snake is a state-designated threatened species and proposed federally threatened species, endemic to Florida. It primarily inhabits areas with well-drained sandy soils, particularly longleaf pine/xeric

oak sandhills, but also scrub and xeric hammock habitats. It is fossorial and spends most of its time burrowed in sand. No individuals, or signs, were observed during the April 2024 field survey. There are no documented occurrences for the short-tailed snake within the project study area. The very small patches of green space separated by pavement, and maintenance activity within the ROW, indicate a low probability of occurrence for the short-tailed snake. The presence of low-quality habitat within the project area is unlikely to support presence of this species. The roadside area has exposure to avian and mammalian predators, noise and physical vibrations that would deter use, and low prey density, all of which support low probability of the short-tailed snake within the project area. A determination of no effect anticipated was made for the short-tailed snake.

3.7.3 Florida Pine Snake

The Florida pine snake is a state-designated threatened species whose habitat primarily includes scrub and open longleaf pine communities. Florida pine snakes usually construct their own burrows; however, the snakes are known to use gopher tortoise burrows, none of which were present during the April 2024 field review. Suitable habitat for Florida pine snakes is poorly represented within the study area and minimal to no impacts to suitable habitat will occur by the proposed improvements. No individuals, or their sign, were observed during field reviews, and no documented occurrences are within the project study area. A determination of no effect anticipated was made for the Florida pine snake.

3.7.4 Florida Burrowing Owl

The Florida burrowing owl is state-designated threatened by the FWC. This species may be found in native open prairies and cleared areas that offer short groundcover such as agricultural fields, pastures, golf courses, airports, and vacant lots in peninsular Florida. The owls usually dig their own burrows but are known to use armadillo or gopher tortoise burrows.

Wide open herbaceous cover, 6.5 acres of contiguous foraging habitat per pair (USFWS), is not represented within the study area. There are no documented occurrences within the vicinity. References identify the Florida burrowing owl as having been historically extirpated from Hillsborough County, with rare observations of dispersing individuals. There is a chance owls could seek habitat in agricultural fields; though, no Florida burrowing owls were observed during field reviews and this species has not been documented within the project area. The probability of occurrence is low. The effect determination of no effect anticipated was made for the Florida burrowing owl.

3.7.5 Southeastern American Kestrel

The southeastern American kestrel is a state-designated threatened species. It is a non-migratory subspecies of kestrel found in open pine savannahs, sandhills, prairies, and pastures in Florida. Kestrels nest in cavities within large dead trees. Foraging habitat for the southeastern American kestrel is large open herbaceous dominated landscapes. Southeastern American kestrels use roadsides and open areas to forage occasionally, though the impacts from this project are largely confined to areas that are already disturbed. There are small patches of mowed grass adjacent to the project area; however, these mowed areas do not offer suitable size or contiguous connections to provide suitable habitat and no impacts to these mowed areas are anticipated. No kestrels were observed within the study area during the field survey. Nesting habitat for the southeastern American kestrel is not present within the project action area. Due to lack of habitat, the probability of occurrence is none. Therefore, the southeastern American kestrel is given the designation of no effect anticipated.

3.7.6 State Listed Wading Birds

This category includes state listed wetland dependent avian species that have a potential to occur or were observed within the study area. These include protected wading birds, namely the Florida sandhill crane, little blue heron, reddish egret, tricolored heron, and roseate spoonbill. These five species are state designated threatened by the FWC.

During the field review in April 2024, none of these five species were observed. There were no young or nesting activities observed as well. There are suitable foraging areas, but no suitable nesting habitat within the existing and proposed ROW.

The habitat within the existing and proposed ROW is of low quality and not preferred for foraging. These species will forage on maintained lawns, in tree wells and within stormwater drainage ditches (all present in the existing and proposed ROW). Suitable foraging habitat within the project study area is sparse and poor quality due to development and urbanization.

The Florida sandhill crane is listed as threatened. Two subspecies of sandhill crane occur in Florida. The Florida sandhill crane (*Antigone canadensis pratensis*) is a non-migratory year-round breeding resident. They are joined every winter by migratory greater sandhill cranes (*Antigone canadensis 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. No natural wetlands that could provide suitable nesting habitat were observed during the field visit. The species uses a variety of wetland and uplands for foraging habitat, which may include open areas such as lawns and crop fields. During the April 2024 field review, sandhill crane tracks were observed. The potential for occurrence of this species is therefore considered to be high. Avoidance and minimization measures to wetlands will be made during the design phase in accordance with the *FWC Florida Sandhill Crane and Threatened Wading Birds Species Conservation Measures and Permitting Guidelines*. Unavoidable wetland impacts will be mitigated pursuant to state and federal regulations. 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. Therefore, there is no adverse effect anticipated for the Florida sandhill crane.

The little blue heron typically prefers swamps, estuaries, ponds, lakes, and rivers. This is a small wading species with a grayish-blue body and a dark red head during breeding, and a purplish head and neck during non-breeding periods. There is limited freshwater swamp habitat available where these species may loaf. The habitat quality is likely degraded, as it borders active agricultural fields, and likely will not provide sufficient functions for these species to establish in the area. The freshwater swamp is outside of the proposed concept, so this area should not be impacted by construction activities. They prefer to forage in freshwater lakes, marshes, swamps and streams. Freshwater streams exist throughout the corridor, though there are no lakes or marshes. The freshwater stream should also not be impacted by construction, box culverts will be used to pass over the stream to preserve natural flow. These species also tend to prefer coastal environments with standing water; there is no such habitat within the corridor. Based on these factors, the probability of occurrence for this species is moderate.

The reddish egret is almost exclusively coastal. They tend to nest near suitable foraging habitat on coastal mangrove islands, in Brazilian pepper, or manmade dredge spoil islands. Foraging habits are typically shallow water of variable salinity. Ideal feeding areas are broad, open, marine tidal flats and shorelines with

little vegetation. There is no suitable habitat within the project area for the reddish egret. Therefore, the probability of occurrence for this species is none.

Tricolored herons typically exist in marshes, estuaries, mangrove swamps, lagoons, and river deltas. This species is a midsized wading bird with a dark slate-blue colored head and upper body, a purple chest, and white underparts. It also has a long, slender neck and bill, and is the only dark heron with light underparts. This species predominantly prefers coastal environments, much more than the little blue heron. They tend to feed in a variety of permanently and seasonally flooded wetlands, mangrove swamps, tidal creeks, ditches, and edges of ponds and lakes. Seasonal variation in water levels are particularly critical to nesting success. There are wetlands within the corridor that fit the habitat requirements for this species; however, the corridor is relatively far (>15 miles) from coastal habitat. Based on these factors, the probability of occurrence for the tricolored heron is low.

The roseate spoonbill nests in mixed-species colonies on coastal mangrove islands or in Brazilian pepper on man-made dredge spoil islands near suitable foraging habitat. They also occasionally nest in willow heads at freshwater sites. Spoonbills forage in shallow water of variable salinity, including marine tidal flats and ponds, coastal marshes, mangrove-dominated inlets and pools, and freshwater sloughs and marshes. They tend to prefer coastal areas. There are no documented occurrences within the project study area; no species were observed during field review. There is a freshwater marsh and wet prairie within the corridor that could provide suitable habitat for this species. It is expected that the quality of these habitats is degraded to some degree due to agricultural activities (pesticide and herbicide usage), though this would not prevent the species from utilizing the area. Although there is suitable habitat for the roseate spoonbill, these wetlands are not proposed to be impacted by the proposed concept for this project. Therefore, the probability of occurrence for this species is low.

The project is anticipated to impact 0.88 acre of wetlands and 0.02 acre of surface waters. Avoidance and minimization measures to wetlands will be made during the design phase in accordance with the FWC *Florida Sandhill Crane and Threatened Wading Birds Species Conservation Measures and Permitting Guidelines,* avoidance and minimization techniques are discussed in Section 3.10. Unavoidable wetland impacts will be mitigated pursuant to state and federal regulations. Impacts to other surface waters will be compensated for within the preferred FPC sites. There is not suitable nesting habitat within the ROW; this is due to small patch sizes, proximity of traffic, limited vegetation cover, and populations of feral cats. If field surveys prior to construction identify nesting activities, then FDOT will coordinate with FWC to determine appropriate avoidance and minimization measures during construction. Though there is a moderate probability of occurrence of these species, a determination of no effect anticipated was made for the little blue heron, reddish egret, tricolored heron, and the roseate spoonbill.,

3.8 STATE LISTED FLORAL SPECIES

The Regulated Plant Index from Chapter 5B-40.0055, F.A.C., was used to assist in the identification of regulated plants within the State of Florida. Potential species within the study area include the nodding pinweed (*Lechea cernua*), southern twayblade (*Listera australis*), Florida spiny-pod (*Matalea floridanana*), rose pogonia (*Pogonia ophioglossoides*), plume polybody (*Polypodium ptilodon*), snowy orchid (*Platanthera nivea*), giant spiral ladies tresses (*Spiranthes longilabris*), and redmargin zephyrlily (*zephyranthes simpsonii*). Descriptions of the potential species and their habitats, as well as the anticipated effect determinations follow. A full list of state listed floral species listed for Hillsborough County, including those with no habitat in the project study area, are included Appendix K.

3.8.1 Nodding Pinweed

The nodding pinweed is listed as threatened by the State of Florida. The plant is a native endemic to Florida, with verified occurrences in Hillsborough County. This is a perennial herb that grows to about one-foot tall. The blooms are red and green and last from about March to May, producing a capsule fruit. Habitats include dry, open sand-scrub and flatwood margins. The survey season is best from summer to fall, flowering from July to October, fruits persist from October to March. The distinctive basal rosettes of unbranched, leafy vegetation remain in the winter months. The nodding pinweed was not observed within the study area during field surveys and no historical observations are documented within the project area. The site will be re-surveyed during the design phase and coordination will be performed as needed with FWC. Because the species was not observed, potential for species occurrence is low, there is no effect anticipated for the nodding pinweed.

3.8.2 Southern Twayblade

The southern twayblade is listed as threatened by the State of Florida. The plant is a native to Florida, with verified occurrences in Hillsborough County. This is a perennial orchid that grows to about 20 cm tall. The blooms are red-maroon-green along the upper part of the stem in a raceme. It blooms primarily in January, but may bloom between December and March. Fruits are capsules with large seeds. The above-ground shoot may not appear every year; when it does, it only lasts about three weeks, near the end of June or the beginning of July. This plant prefers low moist woodlands such as baygalls, mesic and wet flatwoods, ravines, banks of streams, and hydric hammocks. It may exist along the bank of the stream that passes through the project corridor. However, the southern twayblade was not observed within the study area during field surveys and no documented historical observations are within the project area. The site will be re-surveyed during the design phase and coordination will be performed as needed with FWC. Because the species was not observed, potential for species occurrence is low, there is no effect anticipated for the southern twayblade.

3.8.3 Florida Spiny-pod

The Florida spiny-pod is a perennial, twining vine with large opposite leaves listed as endangered by the State of Florida. The plant is a native endemic to Florida, with verified occurrences in Hillsborough County. The plant exudes a milky sap when injured. Flowers are produced in auxiliary clusters along the vine. The flower petals are maroon with black corona and fruits are spiny follicles that open to release seeds. The habitat requirements of the Florida spiny-pod include upland pine sandhills and dry hammocks. While suitable habitat for this species is located within the project study area, the Florida spiny-pod was not observed. However, the field visits occurred outside of the recommended survey season of late spring to summer. The site will be re-surveyed during the design phase and coordination will be conducted as needed with FWC. Because the species was not observed, potential for species occurrence is low and there is no effect anticipated for the Florida spiny-pod.

3.8.4 Rose Pogonia

The rose pogonia is a terrestrial orchid listed as threatened by the State of Florida. The plant is a native to Florida, with verified occurrences in Hillsborough County. It grows up to 35 cm tall, with a single pink flower producing in late June through mid-to-late July. The three sepals and two of the petals are similar in shape and pink. The lip is downward pointing with a yellow beard and fringed margin, often darker pink in color. This plant prefers wet prairies, marshes and seepage slopes; though, it also exists in wet roadside ditches. The rose pogonia was not observed during field surveys and no documented historical observations are

within the project area. The site will be re-surveyed during the design phase and coordination will be performed as needed with FWC. Because the species was not observed, potential for species occurrence is low, there is no effect anticipated for the rose pogonia.

3.8.5 Plume Polybody

The Florida spiny-pod is listed as endangered by the State of Florida. It is a fern with erect or arching fronds; blade 10 - 35 inches long, tapering at top and bottom, cut nearly to the midrib into 20 - 25 pairs of narrow, lance-shaped leaflets, each with a dark midvein. Lowest leaflets gradually reduced to small segments; sori on undersides of leaflets, oval. Leaf stalks are typically brown. Similar species to note are the resurrection fern and the ebony spleenwort. The habitat most associated with this species includes strand swamps, wet woods, and rock-land hammocks. These ferns are typically found on tree bases and fallen logs within these swamp complexes. Suitable habitat for this species is located within the project study area; however no occurrences of the fern were observed. The site will be re-surveyed during the design phase and coordination will be performed as needed with FWC. Because the species was not observed, potential for species occurrence is low and there is no effect anticipated for the swamp plume polypody.

3.8.6 Snowy Orchid

The snowy orchid is a terrestrial orchid listed as threatened by the State of Florida. The plant is a native to Florida, with verified occurrences in Hillsborough County. It has a dense spike of white flowers with lip margins that are neither fringed nor lobed. It prefers open, grassy habitat, but may also exist in wet flatwoods. This species does not flower yearly, so populations may be persisting even if not seen. The snowy orchid was not observed during field surveys and no documented historical observations are within the project area. The site will be re-surveyed during the design phase and coordination will be performed as needed with FWC. Because the species was not observed, potential for species occurrence is low, there is no effect anticipated for the snowy orchid.

3.8.7 Giant Spiral Ladies Tresses

The giant spiral ladies tresses is a perennial herb listed as threatened by the State of Florida. The plant is a native to Florida, with verified occurrences in Hillsborough County. It has a single erect stem to about 10 inches tall. Five or more flowers borne on terminal spikes, only slightly rotating around the stem if at all. Flowers are white with a tinge of yellow, sepals conspicuously spreading out horizontally. It flowers from late October-December, often with withered leaves. This plant prefers wet prairies and flatwoods with fire management. The giant spiral ladies tresses was not observed during field surveys and no documented historical observations are within the project area. The site will be re-surveyed during the design phase and coordination will be performed as needed with FWC. Because the species was not observed, potential for species occurrence is low, there is no effect anticipated for the giant spiral ladies tresses.

3.8.8 Redmargin Zephyrlily

The redmargin zephyrlily, also known as Simpson's zephyr-lily, is a geophytic perennial herb native to the southeastern United States. It typically grows up to 10 inches (25 cm) tall and features dull green leaves. The flowers are white with a purple highlight and an erect, funnel-shaped perianth ranging from 4 to 10 cm (1.6 to 3.9 in). The perianth is mostly white proximally, often with pink or purple distally. This species blooms from February to May and thrives in peaty-sandy soil, coastal plains, and occasionally piedmont habitats at elevations of 0 to 100 meters above sea level. It typically occurs in wet flatwoods and meadows and is occasionally found in ditches. Impacts to suitable habitat are limited to the wet ditches throughout

the study area. No observations of this species were noted during the field reviews and no known occurrences exist within the area. The site will be re-surveyed during the design phase and coordination will be conducted as needed with FWC. Because the species was not observed, potential for species occurrence is low and there is no effect anticipated for the redmargin zephyrlily.

3.9 Other Protected Species

This section discusses species that are no longer listed by USFWS or FWC but are otherwise afforded protection. Species that have the potential to exist within the project area include the bald eagle and the Florida black bear.

3.9.1 Bald Eagle

Although the bald eagle is no longer afforded protection by the ESA, protection for the species is afforded through the *Migratory Bird Treaty Act* (MBTA) (16 *U.S.C. § 703-712*) and *Bald and Golden Eagle Protection Act* (BGEPA). The USFWS will still regulate within 660 feet of a bald eagle's nest. Bald eagles are also no longer listed by the FWC, but monitoring may be required pursuant to the *FWC Eagle Management Guidelines* if construction occurs within 660 feet.

The most recent Audubon Florida EagleWatch Program data shows no bald eagle nests located within 660-ft of the project study area. No bald eagle individuals were observed during field surveys and no additional nests were identified. Audubon Florida data reviews to update locations of active bald eagle nest sites will be conducted during the permitting phase of the project, and monitoring will take place pursuant to the USFWS *Bald Eagle Monitoring Guidelines* if new nests are identified within 660 feet of proposed construction activities. The USFWS *Bald Eagle Monitoring Guidelines* shall be followed if any nests are observed within the project corridor prior to construction. Based on this information, there are no impacts anticipated.

3.9.2 Florida Black Bear

The Florida black bear is considered an "imperiled" species by the FWC but was removed from the State Endangered and Threatened Species List on August 23, 2012. However, the FWC's *Florida Black Bear Conservation Rule* (*Rule 68A-1.004, F.A.C.*) provides protections making it illegal to possess, injure, shoot, wound, trap, collect, or sell Florida black bears or their parts except as authorized by Commission rule or permit.

The Endangered Species Tracker shows the project is within the FWC designated occasional range for the Florida black bear. Two black bear nuisance calls have also been reported within one mile of the project (**Figure 3-1**); however, the most recent black bear observation was in 2011. The probability of occurrence for the Florida black bear is low. There are no impacts anticipated for the Florida black bear.

3.10 Avoidance and Minimization

Avoidance and minimization of species habitat impacts will be further evaluated during the design phase. Environmental controls installations and implementation of BMPs will help ensure impacts are minimized to protected species and their habitats. Although these areas are not likely to provide optimal suitable habitat for the species listed above, the potential to impact habitat for protected species still exists. Further opportunities to avoid and minimize impacts to listed species and habitat will continue to be evaluated during the Design Phase of the project. Additional protected species surveys will be completed prior to

construction, as appropriate. Most upland habitat is located outside of the proposed ROW and will not be impacted. The improvements to Branch Forbes Road will maintain the existing alignment, which will minimize impacts to wetlands within and adjacent to the project corridor by reducing the overall footprint of the project, though impacts cannot be avoided entirely. Staging and storage areas will be limited to the FDOT ROW. Staging and storing of construction equipment will occur in areas outside of the wetlands, surface waters, and wet roadside ditches. Proper BMPs will be implemented during construction to avoid impacts to wetlands that are not to be directly impacted by the roadway improvements. Minimization of impacts to species has also occurred through the adherence of special precautions and provisions as previously discussed.

Section 4 Wetland and Other Surface Waters

The locations, limits, types, nature, and functions of all surface waters, including wetlands within the project limits were assessed for the NRE as part of compliance with *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 and Assessment

A variety of resources including NWI maps, mapping by SWFWMD, open-source GIS data, United States Department of Agriculture (USDA) soil surveys, United States Geological Survey (USGS) topographical maps, and aerial photographs (2020) were utilized to identify wetlands that occur within the study area. Project scientists identified wetlands and other surface waters within the study area during field review in June 2024. These field reviews collected data to perform an assessment of the quality of the existing wetlands and other surface waters. Wetland boundaries were identified using the U.S. Army Corps of Engineers (USACE) *Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0)* and the Florida Department of Environmental Protection's (FDEP) *Delineation of the Landward Extent of Wetlands and Surface Waters* (1995) (Chapter 62-340, F.A.C) map of the wetlands and other surface waters within the project vicinity is provided in **Figure 4-1**, and a more detailed map depicting the anticipated impacts, which includes the preferred SMF and FPC sites, can be found in **Appendix D**.

A review of the ETDM PSSR was conducted to gather comments from participating regulatory agencies. Summaries of each of the agency's comments are provided above in **Section 3.2**. Comments from the agencies include the following:

- Perform delineations and conduct functional analysis of wetlands;
- Avoidance/minimization of wetland impacts;
- Evaluation of stormwater pond sites;
- Maximum effort should be made to treat stormwater runoff from the increase in impervious surface area; and
- Mitigation plans to compensate for adverse impacts to wetlands.

The study area includes all areas within the existing and proposed FDOT ROW, and the SMF and FPC sites. The areas adjacent to the existing and proposed ROW were also evaluated to document nearby wetlands and systems that extend outside the proposed ROW. The assessment consisted of a review of wetland and upland habitats. Wetlands were classified using the FLUCCS codes (FDOT, 1999) and the USFWS's *Wetlands and Deepwater Habitats Classification* (Cowardin et al. 1979) methodology. A breakdown of wetland and other surface waters descriptions and classifications are shown in **Table 4-1**. The wetlands and other surface waters identified are named according to their approximate location within the study area limits. Potential wetland impacts were assessed using the *Uniform Mitigation Assessment Method* (UMAM), *Chapter 62-345*, *F.A.C.* The extents of all wetland sites identified in the field, as collected with GPS, were imported into GIS to perform measurements and acreage calculations. Representative site photographs can be found in **Appendix C.**

Figure 4-1 | Wetland Impacts Wetland Evaluation and Impacts

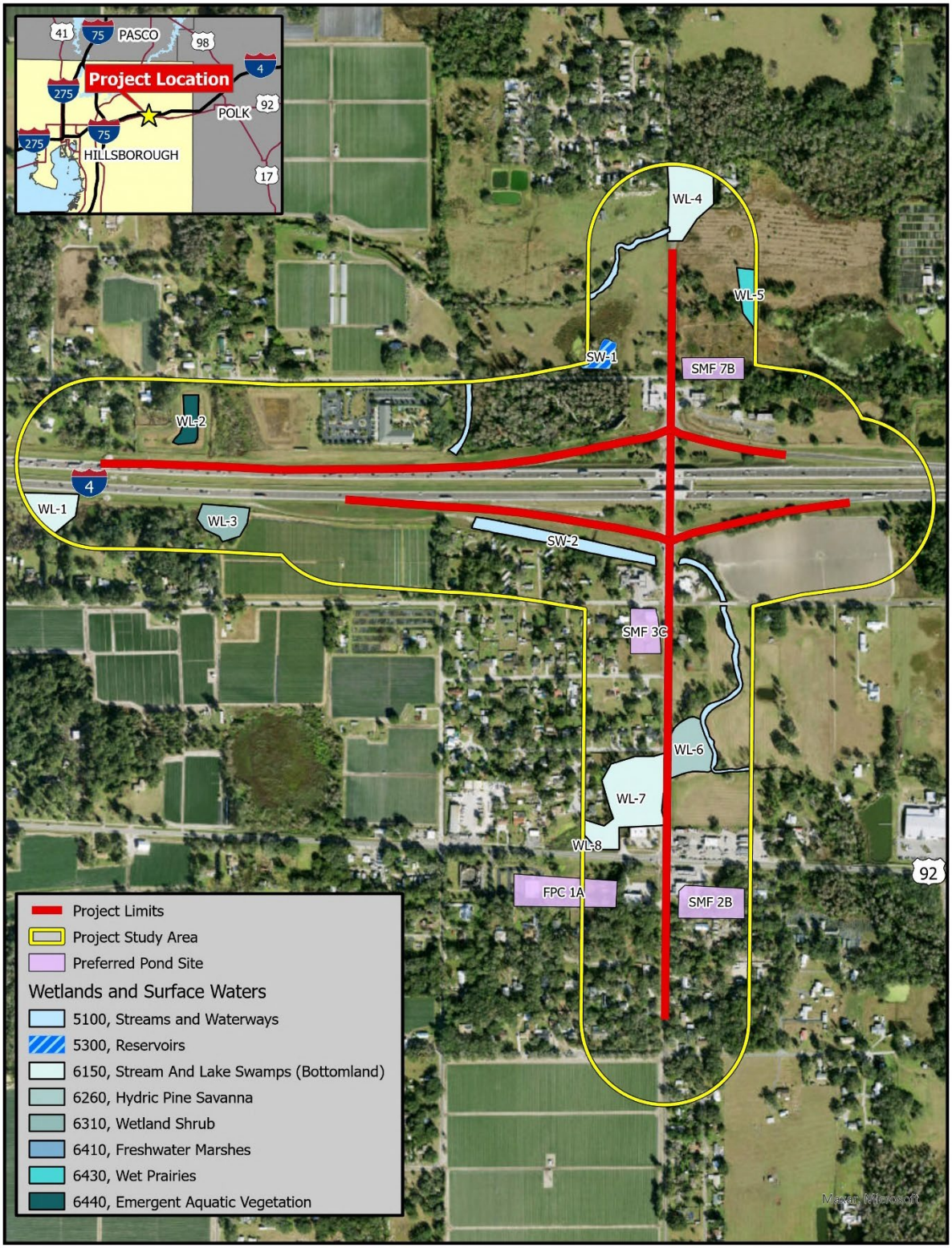


Table 4-1 Wetland and Other Surface Water Descriptions

Wetland/Surface Water ID	NWI/USFWS	FLUCCS	Wetland Description	Acreage Within Study Area
WETLANDS				
WL-1	PSS1A	6150	Stream and Lake Swamps (Bottomland)	1.23
WL-2	PABH	6440	Wet Prairies	0.63
WL-3	PSS3C	6310	Hydric Pine Savanna	1.12
WL-4	PFO2F	6150	Streams and Lake Swamps (Bottomland)	2.16
WL-5	PSSE3C	6430	Wet Prairies	0.70
WL-6	PFO1C	6260	Hydric Pine Savanna	1.63
WL-7	PFO2F	6150	Stream and Lake Swamps (Bottomland)	3.86
WL-8	PSS1/3C	6410	Freshwater Marshes	0.09
OTHER SURFACE WATERS				
OSW-1	PUBHx	5300	Reservoirs	0.46
SW-2	R2UBHx	5100	Streams and Waterways	3.77

Pursuant to Executive Order 11990, *Protection of Wetlands,* federal actions should avoid (to the extent possible) the long- and short-term adverse effects of 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 will occur under the Preferred Alternative given the presence of wetlands in the existing ROW. The proposed project will have no significant short-term or long-term impacts on wetlands in the project area. Additionally, there is no practicable alternative to construction in the wetlands. Measures have been taken to avoid and minimize harm to wetlands. These measures are discussed in Section 4.3. Field reviews were conducted in June 2024 to assess wetlands within the study area. The entirety of the study area, including the preferred SMF and FPC sites, were evaluated for potential impacts to wetlands. Wetlands and other surface waters do not overlap with the preferred SMF and FPC sites.

The widening of Branch Forbes Road will result in 0.88 acre of wetland and 0.02 acre of surface waters impact. Transportation safety standards for additional lanes and widths, side slopes, turn radius, clear zone, sight distance and stormwater treatment requirements necessitate these impacts. A summary of wetland and other surface water impacts is presented Table 4-2. The proposed improvements are anticipated to directly impact 0.49 acre of hydric pine savanna (WL-6), 0.39 acre of stream and lake swamps bottomland (WL-7), and 0.02 acre of streams and waterways (SW-2). Secondary impacts are defined as effects that are caused by and result from an activity, although they may happen later in time or are further removed in distance but are still reasonably foreseeable. Secondary impacts may be avoided by use of appropriate BMPs. Cumulative impacts result from the total effect of the proposed project when added to other past, present, and reasonably foreseeable future projects or actions. Cumulative impacts will be mitigated if mitigation is present within the same basin or watershed at the time of permitting with agencies. A cumulative impact analysis will be conducted if mitigation is not available within the same basin or watershed. Examples of secondary and cumulative impacts that could result from the Branch Forbes Road widening project include altered hydrologic regime, water quality degradation, and edge effects. SWFWMD commented that the project has the potential to impact 25-foot wetland buffer of wetlands adjacent to and within the existing/proposed ROW. The removal or reduction of the wetland buffer increases the possibility for secondary impacts to occur to wetlands during and post construction. The construction and alteration of stormwater facilities adjacent to wetlands could intercept groundwater and surface water

flows that historically maintained wetland hydroperiods. Such wetlands may be dewatered and altered, with impacts to wetland vegetation communities, habitat, and wildlife populations. These impacts will be further evaluated during future project phases based on more-detailed design and construction methods.

Table 4-2 Wetland and Other Surface Waters Impacts

Wetland/Surface Water ID	NWI/USFWS	FLUCCS	Project Impact Acreage		Total Project Impacts
			Roadway	SMF & FPC	
WETLANDS					
WL-6	PFO1C	6260	0.49	0.0	0.49
WL-7	PFO2F	6150	0.39	0.0	0.39
Total Wetland Impacts			**0.88**	**0.0**	**0.88**
OTHER SURFACE WATERS					
SW-2	R2UBHx	5100	0.02	0.0	0.02
Total Other Surface Waters Impacts			**0.02**	**0.0**	**0.02**
Total Project Impacts			0.90	0.0	0.90

4.2 Avoidance and Minimization

Proposed improvements to Branch Forbes Road include widening the current two-lane undivided facility to a four-lane divided facility and also include adding curb and gutter and a 10-foot (ft) wide shared use path on both sides to accommodate bicycles and pedestrians. The proposed improvements require additional ROW within upland or wetlands systems; these activities will have an impact on wetlands and other surface waters.

BMPs will be implemented during construction to avoid additional impacts to wetlands and other surface waters. A Stormwater Pollution Prevention Plan (SWPPP) and an erosion and sediment control plan will be implemented during construction. The erosion control devices will be designed per the FDOT *Standard Specifications for Road and Bridge Construction*. Additional opportunities to avoid and minimize impacts to wetlands will be further evaluated during the Design Phase of the project. The improvements to Branch Forbes Road will maintain the existing alignment, which will minimize impacts to wetlands within and adjacent to the project corridor by reducing the overall footprint of the project, though impacts cannot be avoided entirely. Staging and storage areas will be limited to the FDOT ROW. Staging and storing of construction equipment will occur in areas outside of the wetlands, surface waters, and wet roadside ditches. Proper BMPs will be implemented during construction to avoid impacts to wetlands that are not to be directly impacted by the roadway improvements. Opportunities to minimize impacts to wildlife habitat will continue to be evaluated during the project design phase. Wetland Functional Analysis

The UMAM was used to assess functions and values for the wetlands within the study area, in accordance with *Chapter 62-345*, *F.A.C.* The UMAM scores were developed for individual wetlands identified within the study area. The wetland quality ratings (delta values) are expressed numerically with numbers ranging between 0 and 1, with 1 representing an extremely high-quality wetland and 0 reflecting an extremely low-quality wetland, or an area that is no longer functioning as a wetland.

The functional loss of a wetland system is the estimated loss of function by the proposed project impacts; it is calculated by multiplying the delta value by the impact acreage. Functional loss values are used to determine the amount of mitigation that would be required to offset the loss of wetland and surface water's function caused by the proposed project. The functional loss for the forested wetlands within the

study area is 0.13. Mitigation is not typically required by SWFWMD for surface waters impacts. **Table 4-3** summarizes impact acreage and functional loss for each wetland. For a detailed summary of individual wetland impacts, please refer to the UMAM Sheets provided in **Appendix L.**

Table 4-3 Functional Loss Analysis

FLUCCS	Wetland / Other Surface Waters Description	Impact Acreage	Functional Loss Value
5100	Streams and Waterways	0.02	<0.01
6260	Hydric Pine Savanna	0.49	0.01
6150	Stream and Lake Swamps (Bottomland)	0.39	0.12
	TOTAL	**1.08**	**0.13**

4.3 Wetland Impact Mitigation

Although some wetland impacts may be unavoidable, any impacts will be further refined during future project phases with avoidance and minimization implemented to the extent practicable. Wetland impacts will be mitigated pursuant to *Section 373.4137*, *F.S.*, to satisfy all mitigation requirements of *Part IV* of *Chapter 373*, *F.S.*, and *33 U.S.C. § 1344*. In 2008, the USACE and the US Environmental Protection Agency (EPA) 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. The rule establishes a preference for the use of mitigation bank credits if available.

Total impacts from the project are approximately 0.88 acre of wetland impacts and 0.02 acre of surface water impacts with a total estimated functional loss of 0.13 units. **Table 4-4** displays the available credits applicable to the project as of February 20, 2024, as provided by the USACE Regulatory In-Lieu Fee and Bank Information Tracking System (RIBITS). With multiple banks currently offering enough credits to cover the project, 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.

The proposed project is located within the primary service area of three SWFWMD approved wetland mitigation banks (MB): Hillsborough River MB, Hillsborough River Phase 2 MB, and North Tampa MB. Data was not available for the Hillsborough River Phase 2 MB through the USACE RIBITS. Mitigation options will be investigated further during the final design phase of the study.

Table 4-4 Wetlands Mitigation Availability

Bank Name	Credit Classification	Assessment Method	Available Credits
Fox Branch Ranch	Palustrine Emergent	UMAM	1.55
	Palustrine Forested	UMAM	6.54
Hillsborough River	Palustrine Emergent	UMAM	5.54
	Palustrine Forested	UMAM	5.61
North Tampa	Palustrine Emergent	UMAM	
	Palustrine Forested	UMAM	0.09
Two Rivers	Palustrine Emergent	UMAM	4.43
	Palustrine Forested	UMAM	58.33
Wiggins Prairie	Palustrine Emergent	UMAM	
	Palustrine Forested	UMAM	25.93

Section 5 Essential Fish Habitat

This study was evaluated for EFH in accordance with the requirements of the *Magnuson-Stevens Fishery Conservation and Management Act of 1996* (MSA) and the FDOT *PD&E Manual*. NMFS determined there are no marine resources, no resources under the purview of NMFS, and no essential fish habitat located within the study area.

Section 6 Anticipated Permits

All necessary permits will be acquired prior to construction of the proposed project improvements. Coordination and/or permitting is anticipated to be conducted with the following agencies as shown in Table 6-1.

Table 6-1 Permit Coordination

Coordinating Agency	Permit
US Army Corps of Engineers	404 Permit
Florida Department of Environmental Protection (FDEP)	National Pollutant Discharge Elimination System (NPDES) Permit
Southwest Florida Water Management District (SWFWMD)	Environmental Resource Permit (ERP)

Section 7 Conclusions and Commitments

7.1 Protected Species and Habitat

The project study area was assessed for the presence of federal and state listed, proposed, and protected species as well as their suitable habitat in accordance with *50 CFR Part 402 of the ESA of 1973*, as amended, *Chapter 5B-40: Preservation of Native Flora of Florida*, *F.A.C., Chapter 68A-27: Rules Relating to Endangered or Threatened Species, F.A.C.*, and 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. Three non-listed, managed species, the bald eagle, Florida black bear, and gopher frog, are also discussed based on the potential for occurrence within the study area and their protection under other existing regulations. Table 7-1 and Table 7-2 lists species effect determinations for the project study area.

Table 7-1 Potential Faunal Species Effect Determinations

Species	Common Name	State Status (FWC)	Federal Status (USFWS)	Effect Determination
REPTILES				
Drymarchon corais couperi	Eastern indigo snake	FT	T	MANLAA
Gopherus polyphemus	Gopher tortoise	ST	--	No adverse effect anticipated
Lampropeltis extenuata	Short-tailed snake	ST	PT	No effect anticipated
Pituophis melanoleucus	Florida pine snake	ST	--	No effect anticipated
BIRDS				
Ammodramus savannarum floridanus	Florida grasshopper sparrow	FE	E	No effect
Antigone canadensis pratensis	Florida sandhill crane	ST	--	No adverse effect anticipated
Aphelocoma coerulescens	Florida scrub jay	FT	T	No effect
Athene cunicularia floridana	Florida burrowing owl	ST	--	No effect anticipated
Egretta caerulea	Little blue heron	ST	--	No effect anticipated
Egretta refescens	Reddish egret	ST	--	No effect anticipated
Egretta tricolor	Tricolored heron	ST	--	No effect anticipated
Falco sparverius paulus	Southeastern American Kestrel	ST	--	No effect anticipated
Grus americana	Whooping crane	--	EXPN	--
Haliaeetus leucocephalus	Bald eagle[1]	--	--	--
Laterallus jamaicensis jamaicensis	Eastern black rail	FT	T	No effect
Mycteria americana	Wood stork	FT	T	MANLAA

Species	Common Name	State Status (FWC)	Federal Status (USFWS)	Effect Determination
Platea ajaja	Roseate spoonbill	ST	--	No effect anticipated
Polyborus plancus audubonii	Audubon's Crested Caracara	FT	T	No effect
Rostrahamus sociabilis plumbeus	Everglade snail kite	FE	E	No effect
INSECTS				
Danaus plexippus	Monarch butterfly	--	C	--
MAMMALS				
Ursus americanus floridanus	Florida black bear[2]	--	--	--

MANLAA=May Affect, Not Likely to Adversely Affect
C= Candidate Species, EXPN= Experimental population, Non-essential, E= Endangered, FE= Federal Endangered T=Threatened, FT=Federal Threatened, PT= Proposed Threatened, ST=State-designated Threatened --=Not Listed
[1] Protected under the Bald and Golden Eagles Protection Act (16 U.S.C. § 668-668c)
[2] Protected under the Florida Black Bear Conservation Rule (68A-4.009, F.A.C.)

Table 7-2 Potential Floral Species Effect Determinations

Species	Common Name	State Status (FDACS)	Federal Listed (USFWS)	Habitat	Effect Determination
Chionanthus pygmaeus	Pygmy fringe-tree	SE	E	Scrub, sandhills, and xeric hammocks; primarily in the Lake Wales Ridge	No effect
Lechea cernua	Nodding pinweed	ST	--	Open, unshaded white sands of scrub and scrubby flatwoods.	No effect anticipated
Listera australis	Southern twayblade	ST	--	Low moist woodlands such as baygalls, mesic and wet flatwoods, ravines, banks of streams, and hydric hammocks	No effect anticipated
Matalea floridana	Florida spiny-pod	SE	--	Sandhill, upland pine, and dry hammocks	No effect anticipated
Pogonia ophioglossoides	Rose pogonia	ST	--	Wet prairie marshes, seepage slopes, wet roadside ditches	No effect anticipated
Polypodium ptilodon	Plume polybody	SE	--	Rockland hammocks, strand swamps, and wet woods; often on tree bases and fallen logs	No effect anticipated
Platanthera nivea	Snowy orchid	ST	--	Wet flatwoods and prairies	No effect anticipated
Spiranthes longilabris	Giant spiral ladies tresses	ST	--	Wet prairies and flatwoods	No effect anticipated
Zephyranthes simpsonii	Redmargin zephyrlily	ST	--	Wet flatwoods and meadows, ditches and wet pastures; often in burned over areas	No effect anticipated

E=Endangered, SE=State-designated Endangered, T=Threatened, ST=State-designated Threatened, --=Not Listed

7.2 Wetlands

The proposed Build Alternative would result in approximately 0.88 acre of wetland and 0.02 acre of other surface waters impacts based on the Preferred Alternative. Wetland mitigation options will be pursuant to *373.4137*, *F.S.*, and may include purchase of wetland mitigation credits through an approved mitigation bank, as well as creation, restoration, or enhancement of wetlands within the project watersheds. There are several mitigation banks in the same watershed as the project area with available credits (see **Table 4-4**). In project design and construction there will be opportunities to provide increased wetlands' value as to meet wetland mitigation requirements. The mitigation will satisfy the requirements of *Part IV*, *Chapter* 373, F.S. and 33 U.S.C. § 1344. A summary of impacts is provided below in **Table 7-3**.

In accordance with EO 11990: *Protection of Wetlands* and USDOT 5660.1A: *Preservation of the Nation's Wetlands*, 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. In order to do this, design variations for border width, median width, and/or side slopes are being sought.
- 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.

Table 7-3 Wetland and Other Surface Waters Impacts

	Type of Wetland or Other Surface Waters	FLUCCS	NWI	Project Impact Acreage	Functional Loss
Project Totals	*Hydric Pine Savanna*	626	PFO1C	0.49	0.01
	Stream and Lake Swamps (Bottomland)	615	PFO2F	0.39	0.12
			Total Wetlands	0.88	0.17
	Streams and Waterways	510	R2UBHx	0.02	<0.01
			Total Other Surface Waters	0.02	<0.01
			Project Total	0.90	0.13

Functional loss values are derived from the Uniform Mitigation Assessment Method (UMAM)

7.3 Implementation Measures

- Surveys for gopher tortoise burrows, as well as commensal species, will be conducted during the design phase and permits to relocate tortoises and commensals as appropriate will be obtained from FWC.
- Wildlife surveys for protected species outlined in this NRE will be performed prior to final design and prior to construction initiation, per state and federal guidelines.
- Best Management Practices will be incorporated during construction to minimize wetland impacts, as well as provide sediment and erosion control.
- FDOT will implement erosion and sediment control BMPs including a Stormwater Pollution Prevention Plan, during project construction, to protect water quality.
- Wetland impacts, including potential impacts to wood stork suitable foraging habitat that will result from the construction of this project will be mitigated for pursuant to Section 373.4127, F.S., or as otherwise agreed upon between FDOT and the appropriate regulatory agencies.
- Review of Audubon data to update locations of active bald eagle nest sites will be conducted during the design phase, and permits will be acquired if there will be unavoidable impacts during construction. Coordination with USFWS and FWC will take place, as necessary.

7.4 Commitments

- To avoid impacts to the eastern indigo snake, the most recent version of the USFWS *Standard Protection Measures for the Eastern Indigo Snake* will be utilized during site preparation and construction.

Section 8 References

Audubon Florida. 2022. Audubon Florida EagleWatch Nest App [web application]. Audubon Center for Birds of Prey, Maitland, Florida. Available: https://cbop.audubon.org/conservation/about-eaglewatch-program/. Last accessed April 2024.

Chafin L. G., 2000. *Field Guide to the Rare Plants Florida*, Florida Natural Areas Inventory.

Florida Department of Agriculture and Consumer Services. January 2020 *Regulated Plant Index,* Chapter 5B-40.0055, Florida Administrative Code

Florida Department of Environmental Protection, *The Florida Wetlands Delineation Manual*, Chapter 62-340, Florida Administrative Code.

FDOT. January 1999. *Florida Land Use, Cover and Forms Classification System*. Surveying and Mapping Thematic Mapping Section. Tallahassee, Florida. 91 pp.

FDOT. January 2023. *Standard Specifications for Road and Bridge Construction*, Maps and Publication Sales, Tallahassee, FL.

FDOT. July 31, 2024. *Project Development and Environment Manual, Part 2, Chapter 9, Wetlands and Other Surface Waters*.

FDOT. July 31, 2024. *Project Development and Environment Manual, Part 2, Chapter 16, Protected Species and Habitat*.

FDOT. *Efficient Transportation Decision Making Environmental Screening Tool*, ETDM Project No.: 14493, Programming Screen Summary Report, dated October 27, 2022.

FWC. December 2018. *Florida's Endangered Species and Threatened Species*. Florida Fish and Wildlife Conservation Commission. Tallahassee, Florida. 13 pp.

FWC. Numerous shapefiles relating to wildlife and habitat. Located at https://geodata.myfwc.com/ Last accessed July 2023.

FWC. April 2019. *Little Blue Heron, Reddish Egret, Roseate Spoonbill, Tricolored Heron Species Conservation Measures and Permitting Guidelines, https://myfwc.com/media/18634/threatened-wading-birds-guidelines.pdf*

FWC. April 2019. *Florida Sandhill Crane Species Conservation Measures and Permitting Guidelines, https://myfwc.com/media/11565/florida-sandhill-crane-guidelines.pdf*

Florida Natural Areas Inventory and Florida Department of Natural Resources, 1990. *Guide to the Natural Communities of Florida*. Tallahassee, FL.

Florida Natural Areas Inventory, 2024. *Field Guide Account for Red-Cockaded Woodpecker*, https://www.fnai.org/PDFs/FieldGuides/Picoides_borealis.pdf [accessed on August 16, 2024].

Florida Natural Areas Inventory, 2024. *Field Guide Account for Gopher Frog*, https://www.fnai.org/PDFs/FieldGuides/Lithobates_capito.pdf [accessed on August 16, 2024].

Michell, James W. et al., 1989. *Soil Survey of Hillsborough County, Florida*. USDA Soil Conservation Service in cooperation with University of Florida IFAS, Agricultural Experiment Stations, and Soil Science Department.

SWFWMD. 2020. GIS Land Use Mapping. Located at http://www.swfwmd.state.fl.us/data/gis.

U.S. Army Corps of Engineers (Jacksonville District). 2010. *Regional Supplement to the Corps of Engineers' Wetlands Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0.* US Army Corps of Engineers. Jacksonville, Florida. 180 pp.

U.S. Department of the Interior (Fish and Wildlife Service). December 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. Washington, D.C.

U.S. Department of the Interior (National Park Service). Last updated December 21, 2017. *Nationwide Rivers Inventory*. Located at https://www.nps.gov/subjects/rivers/nationwide-rivers-inventory.htm

USFWS. Last updated December 19, 2017, *Bald Eagle Management Guidelines and Conservation Measures*. Located at http://www.fws.gov/southeast/es/baldeagle/index.html.

USFWS. *Information, Planning, and Conservation System (IPaC)*, Hillsborough County, Florida, April 2024.

USFWS. 2003. Florida Scrub-jay Consultation Area Shapefile. http://www.fws.gov/verobeach/GIS.html Last accessed 2023.

USFWS. 2003. Snail Kite Consultation Area Shapefile. http://www.fws.gov/verobeach/GIS.html Last accessed 2024.

Ward D. B., 1978. *Rare and Endangered Plants of Florida*, University Press of Florida.

Weaver R. E. & Anderson P. J., 2010. *Notes on Florida's Endangered and Threatened Plants*, FDACS-Bureau of Entomology, Nematology and Plant Pathology – Botany Section. Contribution 38, 5th edition.

Wunderlin, R. P., B. F. Hansen, A. R. Franck, and F. B. Essig. 2021. Atlas of Florida Plants (http://florida.plantatlas.usf.edu/). [S. M. Landry and K. N. Campbell (application development), USF Water Institute.] Institute for Systematic Botany, University of South Florida, Tampa.

APPENDICES

APPENDIX A Concept Plans

STATE OF FLORIDA

DEPARTMENT OF TRANSPORTATION

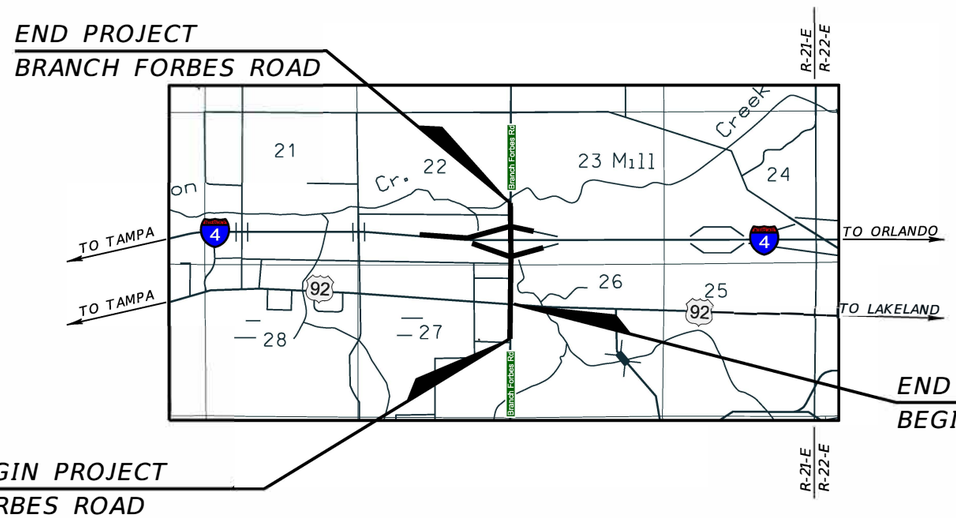
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY CONCEPT PLANS

WPI SEGMENT NO. 447159-1

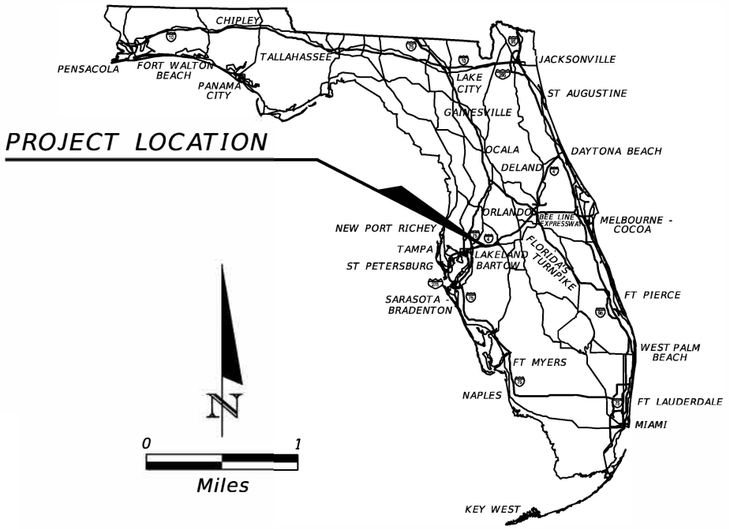
HILLSBOROUGH COUNTY

BRANCH FORBES ROAD

From South of US 92 to North of I-4



PROJECT LOCATION



INDEX OF ROADWAY PLANS

ROADWAY PLANS
ENGINEER OF RECORD:

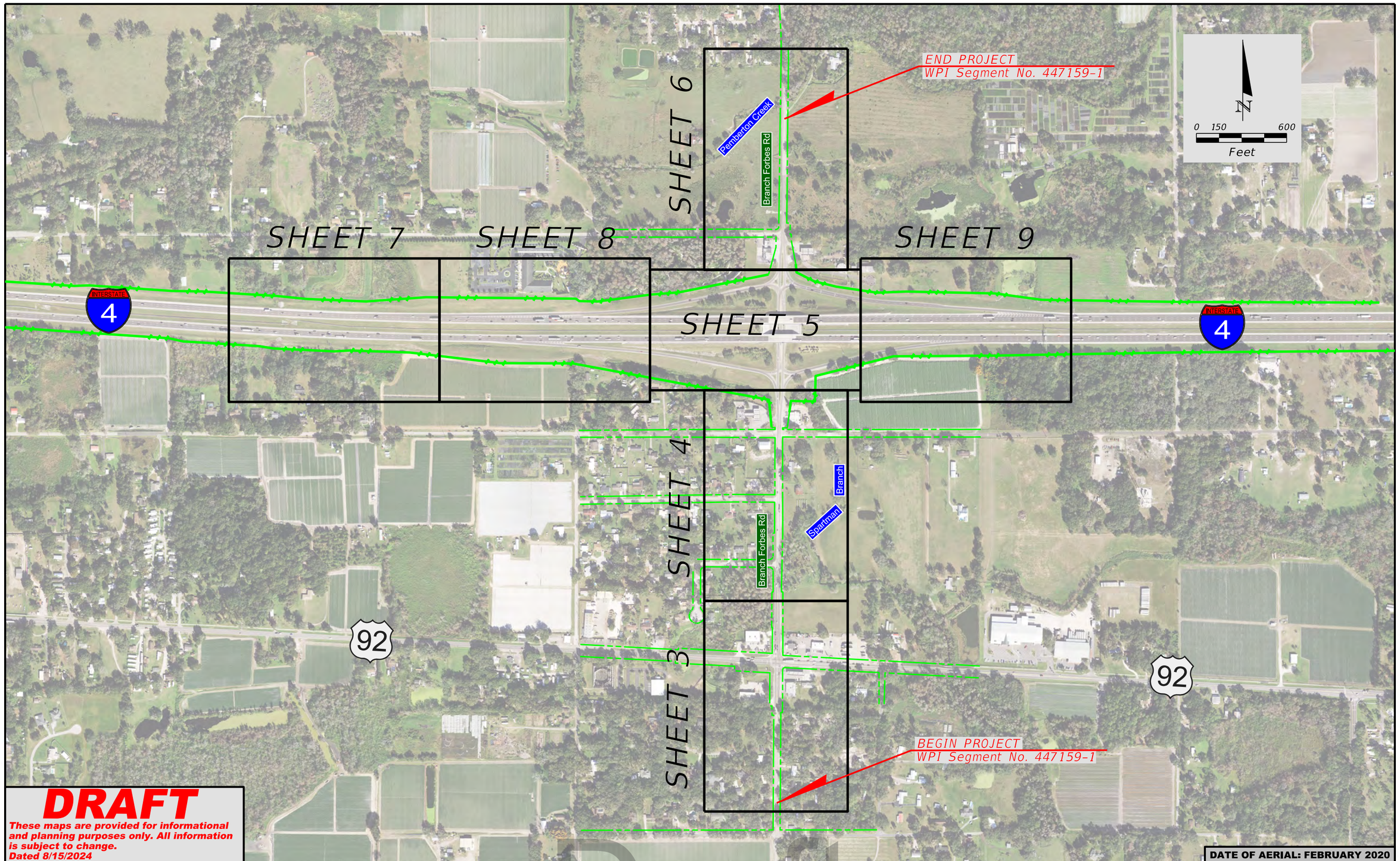
ERIK C. LESCHAK, P.E.
P.E. LICENSE NUMBER 63874
CONSOR ENGINEERS, LLC
2818 CYPRESS RIDGE BLVD., SUITE 200
WESLEY CHAPEL, FLORIDA 33544
CERTIFICATE OF AUTHORIZATION NO. 9302

FDOT PROJECT MANAGER:

CRAIG FOX, P.E.

SHEET NO. 1

8/15/2024 10:32:18 AM slamd
C:\pw_work\american-pw-01\d0115094\KEYSEM01.dgn



DRAFT

These maps are provided for informational and planning purposes only. All information is subject to change.
Dated 8/15/2024

DATE OF AERIAL: FEBRUARY 2020

LEGEND

- PROPERTY LINE
- EXISTING ROW
- EXISTING LA ROW
- PROPOSED ROW
- PLAN SHEET BOUNDARY
- STORMWATER MANAGEMENT FACILITY/FLOODPLAIN COMPENSATION SITE SHEET BOUNDARY

CONSOR ENGINEERS, LLC
2818 Cypress Ridge Blvd, Suite 200
Wesley Chapel, Florida 33544
Phone: (813) 435-2600 Fax: (813) 435-2601
Certificate of Authorization No. 9302

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
	HILLSBOROUGH	447159-1-22-01

Branch Forbes Road PD&E STUDY
From South of US 92 to
North of Interstate 4 (SR 400)
DRAFT Alternative Concept Plans
WPI Segment No.: 447159-1

SHEET NO. 2

5lamd 8/15/2024 10:46:41 AM c:\pw_work\american-pw-01\d0115094\PLAYEM01.dgnMODEL: Default

NOTE:

FPID No. 447160-1 CURRENTLY UNDER DESIGN
IMPROVEMENT OF SR 600/US 92 FROM
WEST OF BRANCH FORBES RD TO EAST
OF BRANCH FORBES RD AS OF OCTOBER 2022

AERIAL REFLECTS EXISTING CONDITIONS.

N

0 20 100
Feet

BEGIN PROJECT
WPI Segment No. 447159-1

℄ SURVEY FORBES RD
STA 120+57.95=
℄ CONST FORBES RD
STA 1120+57.95

℄ SURVEY
FORBES RD

℄ SURVEY FORBES RD
STA 125+86.85=
℄ CONST FORBES RD
STA 1125+86.85

EXISTING TRAFFIC SIGNAL
(TO BE REPLACED WITH
FUTURE TRAFFIC SIGNAL FOR
INTERSECTION IMPROVEMENTS

ADVANCE
AUTO PARTS

US 92 IMPROVEMENTS
WPI Segment No. 447160-1

℄ SURVEY
US 92/SR 600

℄ SURVEY BRANCH FORBES ROAD
STA 130+00.00=
℄ SURVEY SR600/US 92
STA 561+87.76

AUTOZONE
AUTO PARTS

BEGIN 10' SHARED
USE PATH

℄ SURVEY
BRANCH
FORBES RD

Forbes Rd

Branch Forbes Rd

92

℄ CONST
FORBES RD

CITGO GAS
STATION

SMF 2B

92 TIRES
SHOP

℄ CONST
BRANCH
FORBES RD

BEGIN 10' SHARED
USE PATH

10' SHARED
USE PATH

CHEVRON
FOOD MART

℄ SURVEY
US 92/SR 600

US 92 IMPROVEMENTS
WPI Segment No. 447160-1

MATCH LINE. SEE SHEET 4

DATE OF AERIAL: FEBRUARY 2020

DRAFT

These maps are provided for informational and planning purposes only. All information is subject to change.
Dated 8/15/2024

LEGEND

- WETLANDS BOUNDARY
- OTHER SURFACE WATERS BOUNDARY
- FLOODPLAINS AREA
- PREFERRED SMF AND FPC AREA
- B — POTENTIAL BUSINESS RELOCATION
- R — POTENTIAL RESIDENTIAL RELOCATION
- C — POTENTIALLY CONTAMINATED SITE
- PROPERTY LINE
- EXISTING ROW
- EXISTING LA ROW
- PROPOSED ROW
- MILLING AND RESURFACING
- PROPOSED SIDEWALK/ SHARED USE PATH
- IMPROVEMENTS BY FDOT
- PROPOSED MEDIAN (SOD)
- PROPOSED TRAFFIC SEPARATOR

CONSOR ENGINEERS, LLC
2818 Cypress Ridge Blvd. Suite 200
Wesley Chapel, Florida 33544
Phone: (813) 435-2600 Fax: (813) 435-2601
Certificate of Authorization No. 9302

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
	HILLSBOROUGH	447159-1-22-01

Branch Forbes Road PD&E STUDY
From South of US 92 to
North of Interstate 4 (SR 400)
DRAFT Alternative Concept Plans
WPI Segment No.: 447159-1

SHEET NO. 3

5lamd 8/15/2024 10:48:01 AM c:\pw_work\american-pw-01\d0115094\PLANEM01.dgn MODEL:Default

NOTE:

FPID No. 443318-1 CURRENTLY UNDER DESIGN
INTERCHANGE IMPROVEMENT OF I-4/SR 400
FROM WEST OF BRANCH FORBES RD TO
EAST OF BRANCH FORBES RD AS OF OCTOBER 2022

AERIAL REFLECTS EXISTING CONDITIONS.

N

0 20 100

Feet

MATCH LINE. SEE SHEET 3

MATCH LINE. SEE SHEET 5

Cindy Kay Rd

Keene Dr

Glen Howell Rd

Branch Forbes Rd

Beauchamp Rd

Spartman Branch

Spartman Branch

SMF 3C

CIRCLE K

10' SHARED USE PATH

10' SHARED USE PATH

10' SHARED USE PATH

℄ SURVEY BRANCH FORBES RD

℄ CONST BRANCH FORBES RD

U-TURN BULB-OUT

EXTEND 25 LF TRIPLE 7'x8' BRIDGE CULVERT #100111 w/ENDWALL

EXTEND 35 LF TRIPLE 7'x8' BRIDGE CULVERT #100111 w/ENDWALL

FORBES RD PRODUCE

11,459' R

2,865' R

2,865' R

11,459' R

73.11'

55.41'

64.22'

54.96'

53.38'

52.58'

49.74'

49.84'

67.20'

78.14'

DATE OF AERIAL: FEBRUARY 2020

DRAFT

These maps are provided for informational and planning purposes only. All information is subject to change.
Dated 8/15/2024

LEGEND

- WETLANDS BOUNDARY
- OTHER SURFACE WATERS BOUNDARY
- FLOODPLAINS AREA
- PREFERRED SMF AND FPC AREA
- POTENTIAL BUSINESS RELOCATION
- POTENTIAL RESIDENTIAL RELOCATION
- POTENTIALLY CONTAMINATED SITE
- PROPERTY LINE
- EXISTING ROW
- EXISTING LA ROW
- PROPOSED ROW
- MILLING AND RESURFACING
- PROPOSED SIDEWALK/ SHARED USE PATH
- IMPROVEMENTS BY FDOT
- PROPOSED MEDIAN (SOD)
- PROPOSED TRAFFIC SEPARATOR

CONSOR ENGINEERS, LLC
2818 Cypress Ridge Blvd. Suite 200
Wesley Chapel, Florida 33544
Phone: (813) 435-2600 Fax: (813) 435-2601
Certificate of Authorization No. 9302

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
	HILLSBOROUGH	447159-1-22-01

Branch Forbes Road PD&E STUDY
From South of US 92 to North of Interstate 4 (SR 400)
DRAFT Alternative Concept Plans

WPI Segment No.: 447159-1

SHEET NO. 4

5lamd 8/15/2024 10:48:34 AM c:\pw_work\american-pw-01\d0115094\PLANEM02.dgn MODEL:Default

NOTE:

FPID No. 443318-1 CURRENTLY UNDER DESIGN
INTERCHANGE IMPROVEMENT OF I-4/SR 400
FROM WEST OF BRANCH FORBES RD TO
EAST OF BRANCH FORBES RD AS OF OCTOBER 2022

AERIAL REFLECTS EXISTING CONDITIONS.

N
0 20 100
Feet

MATCH LINE. SEE SHEET 6

10' SHARED USE PATH

℄ SURVEY RAMP "A"

WB I-4 ON-RAMP "A"

℄ SURVEY RAMP "D"

WB I-4 OFF-RAMP "D"

PROPOSED FUTURE TRAFFIC SIGNAL

℄ CONST BRACH FORBES RD
STA 1151+77.42=
℄ SURVEY I-4
STA 1792+62.82

℄ SURVEY BRACH FORBES RD
STA 151+75.73=
℄ SURVEY I-4
STA 1792+62.19

Structure No. 100599

℄ CONST BRANCH FORBES RD

℄ SURVEY SR 400/I-4

INTERSTATE 4

MATCH LINE. SEE SHEET 8

MATCH LINE. SEE SHEET 9

562.08'

349.54'

10' SHARED USE PATH

Structure No. 100600

10' SHARED USE PATH

Branch Forbes Rd

℄ SURVEY RAMP "B"

EB I-4 OFF-RAMP "B"

℄ SURVEY BRACH FORBES RD
STA 149+52.63=
℄ CONST BRANCH FORBES RD
STA 1149+54.25

℄ SURVEY BRANCH FORBES RD

280.72'

PROPOSED FUTURE TRAFFIC SIGNAL

EB I-4 ON-RAMP "C"

℄ SURVEY RAMP "C"

Spartman Branch

10' SHARED USE PATH

10' SHARED USE PATH

MATCH LINE. SEE SHEET 4

DATE OF AERIAL: FEBRUARY 2020

DRAFT

These maps are provided for informational and planning purposes only. All information is subject to change.
Dated 8/15/2024

LEGEND

- WETLANDS BOUNDARY
- OTHER SURFACE WATERS BOUNDARY
- FLOODPLAINS AREA
- PREFERRED SMF AND FPC AREA
- POTENTIAL BUSINESS RELOCATION
- POTENTIAL RESIDENTIAL RELOCATION
- POTENTIALLY CONTAMINATED SITE
- PROPERTY LINE
- EXISTING ROW
- EXISTING LA ROW
- PROPOSED ROW
- MILLING AND RESURFACING
- PROPOSED SIDEWALK/ SHARED USE PATH
- IMPROVEMENTS BY FDOT
- PROPOSED MEDIAN (SOD)
- PROPOSED TRAFFIC SEPARATOR

CONSOR ENGINEERS, LLC
2818 Cypress Ridge Blvd, Suite 200
Wesley Chapel, Florida 33544
Phone: (813) 435-2600 Fax: (813) 435-2601
Certificate of Authorization No. 9302

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
	HILLSBOROUGH	447159-1-22-01

Branch Forbes Road PD&E STUDY
From South of US 92 to
North of Interstate 4 (SR 400)
DRAFT Alternative Concept Plans
WPI Segment No.: 447159-1

SHEET NO. 5

5lamd 8/15/2024 10:49:10 AM c:\pw_work\american-pw-01\d0115094\PLANEM03.dgn MODEL:Default

Harvey Tew Rd

Pemberton Creek

Branch Forbes Rd

END PROJECT
WPI Segment No. 447159-1

0 20 100
Feet

CITGO GAS STATION

10' SHARED USE PATH

4202' R

℄ SURVEY BRANCH FORBES RD

MATCH LINE. SEE SHEET 5

100.43'

76.06'

℄ CONST BRANCH FORBES RD

10' SHARED USE PATH

MARATHON GAS STATION

SMF 7B

Structure No. 104403

50.12'

NOTE:

FPID No. 443318-1 CURRENTLY UNDER DESIGN
INTERCHANGE IMPROVEMENT OF I-4/SR 400
FROM WEST OF BRANCH FORBES RD TO
EAST OF BRANCH FORBES RD AS OF OCTOBER 2022

AERIAL REFLECTS EXISTING CONDITIONS.

DATE OF AERIAL: FEBRUARY 2020

DRAFT

These maps are provided for informational and planning purposes only. All information is subject to change.
Dated 8/15/2024

LEGEND

- WETLANDS BOUNDARY
- OTHER SURFACE WATERS BOUNDARY
- FLOODPLAINS AREA
- PREFERRED SMF AND FPC AREA
- B POTENTIAL BUSINESS RELOCATION
- R POTENTIAL RESIDENTIAL RELOCATION
- POTENTIALLY CONTAMINATED SITE
- PROPERTY LINE
- EXISTING ROW
- EXISTING LA ROW
- PROPOSED ROW
- MILLING AND RESURFACING
- PROPOSED SIDEWALK/ SHARED USE PATH
- IMPROVEMENTS BY FDOT
- PROPOSED MEDIAN (SOD)
- PROPOSED TRAFFIC SEPARATOR

CONSOR ENGINEERS, LLC
2818 Cypress Ridge Blvd, Suite 200
Wesley Chapel, Florida 33544
Phone: (813) 435-2600 Fax: (813) 435-2601
Certificate of Authorization No. 9302

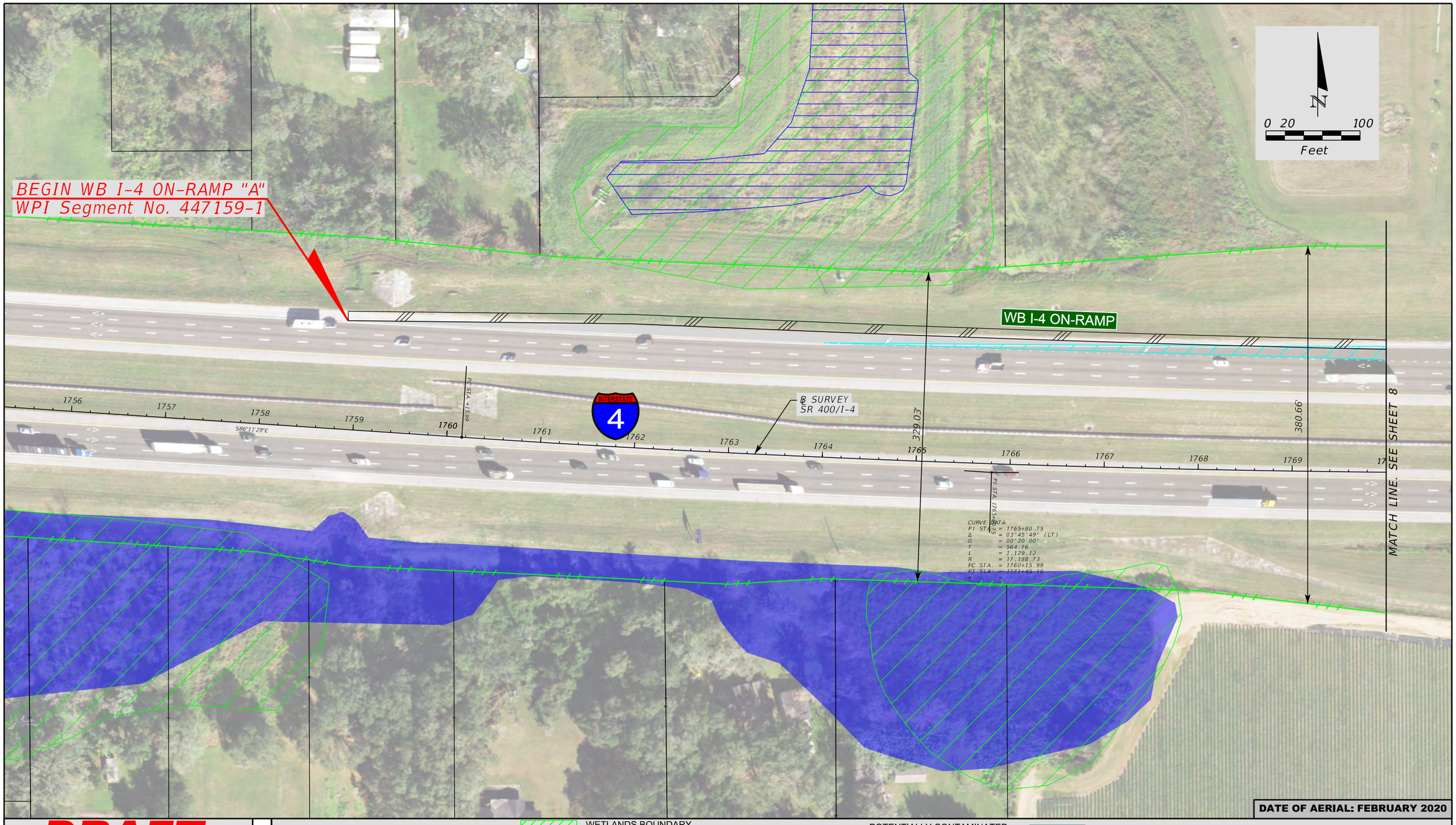
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
	HILLSBOROUGH	447159-1-22-01

Branch Forbes Road PD&E STUDY
From South of US 92 to
North of Interstate 4 (SR 400)
DRAFT Alternative Concept Plans
WPI Segment No.: 447159-1

SHEET NO. 6

51amd 8/15/2024 10:50:04 AM c:\pw_work\american-pw-01\d0115094\PLANEM04.dgn MODEL:Default



DRAFT

These maps are provided for informational and planning purposes only. All information is subject to change.
Dated 8/15/2024

LEGEND

- WETLANDS BOUNDARY
- OTHER SURFACE WATERS BOUNDARY
- FLOODPLAINS AREA
- PREFERRED SMF AND FPC AREA
- B POTENTIAL BUSINESS RELOCATION
- R POTENTIAL RESIDENTIAL RELOCATION
- POTENTIALLY CONTAMINATED SITE
- PROPERTY LINE
- EXISTING ROW
- EXISTING LA ROW
- PROPOSED ROW
- MILLING AND RESURFACING
- PROPOSED SIDEWALK/ SHARED USE PATH
- IMPROVEMENTS BY FDOT
- PROPOSED MEDIAN (SOD)
- PROPOSED TRAFFIC SEPARATOR

CONSOR ENGINEERS, LLC
2818 Cypress Ridge Blvd. Suite 200
Wesley Chapel, Florida 33544
Phone: (813) 435-2600 Fax: (813) 435-2601
Certificate of Authorization No. 9302

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

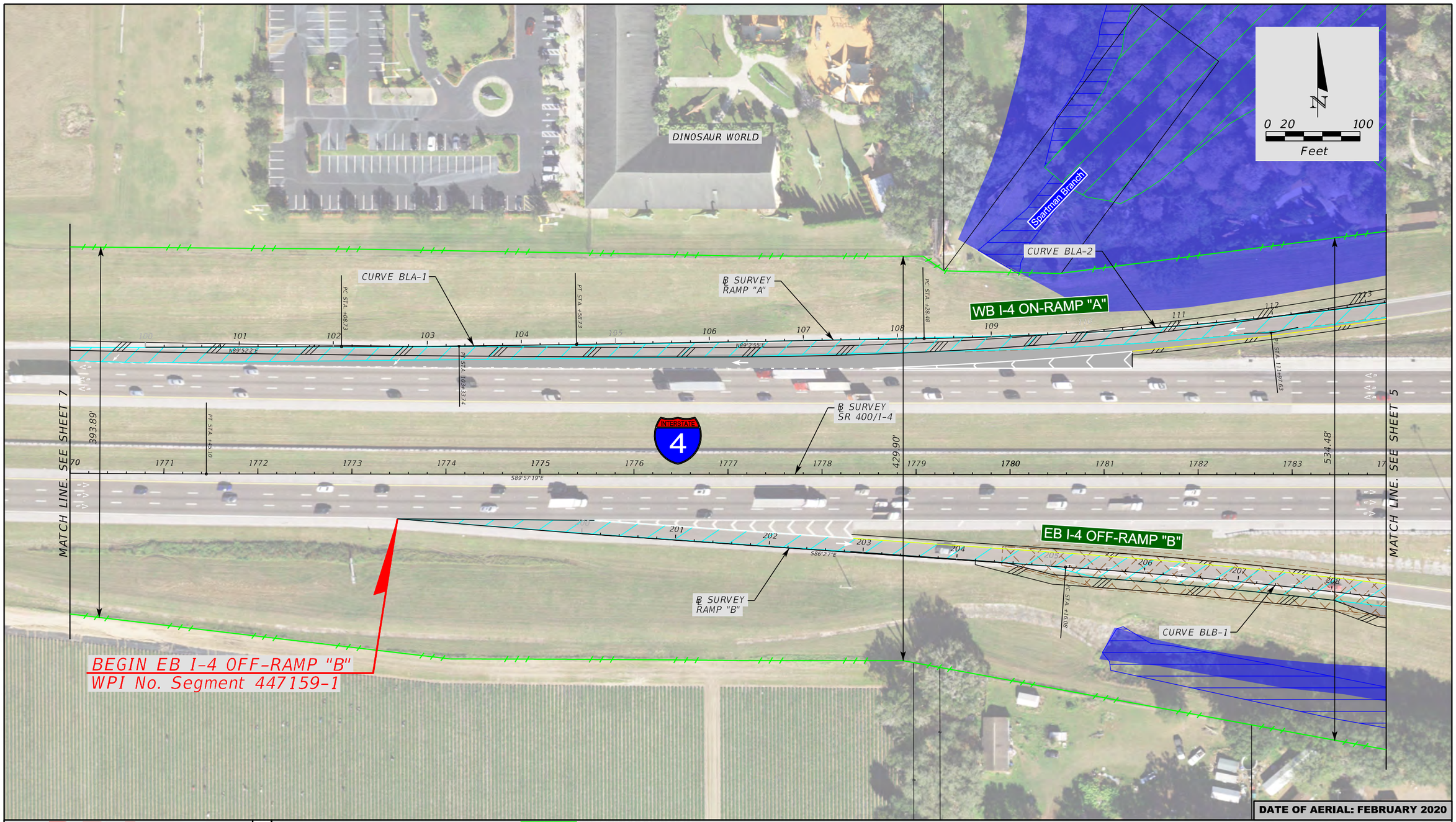
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
	HILLSBOROUGH	447159-1-22-01

Branch Forbes Road PD&E STUDY
From South of US 92 to North of Interstate 4 (SR 400)
DRAFT Alternative Concept Plans

WPI Segment No.: 447159-1

SHEET NO. 7

5lamd 8/15/2024 10:50:43 AM c:\pw_work\american-pw-01\d0115094\PLANEM05.dgn MODEL:Blank Base Map



DRAFT

These maps are provided for informational and planning purposes only. All information is subject to change.
Dated 8/15/2024

LEGEND

- WETLANDS BOUNDARY
- OTHER SURFACE WATERS BOUNDARY
- FLOODPLAINS AREA
- PREFERRED SMF AND FPC AREA
- (B) POTENTIAL BUSINESS RELOCATION
- (R) POTENTIAL RESIDENTIAL RELOCATION
- POTENTIALLY CONTAMINATED SITE
- PROPERTY LINE
- EXISTING ROW
- EXISTING LA ROW
- PROPOSED ROW
- MILLING AND RESURFACING
- PROPOSED SIDEWALK/ SHARED USE PATH
- IMPROVEMENTS BY FDOT
- PROPOSED MEDIAN (SOD)
- PROPOSED TRAFFIC SEPARATOR

CONSOR ENGINEERS, LLC
2818 Cypress Ridge Blvd Suite 200
Wesley Chapel, Florida 33544
Phone: (813) 435-2600 Fax: (813) 435-2601
Certificate of Authorization No. 9302

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
	HILLSBOROUGH	447159-1-22-01

Branch Forbes Road PD&E STUDY
From South of US 92 to
North of Interstate 4 (SR 400)
DRAFT Alternative Concept Plans
WPI Segment No.: 447159-1

SHEET NO. 8

5lamd 8/15/2024 10:51:21 AM c:\pw_work\american-pw-01\d0115094\PLANEM06.dgn MODEL:Blank Base Map

END WB I-4 OFF-RAMP "D"
WPI Segment No. 447159-1

CURVE BLD-1

WB I-4 OFF-RAMP "D"

℄ SURVEY
RAMP "D"

℄ SURVEY
SR 400/I-4

EB I-4 ON-RAMP "C"

CURVE BLC-1

℄ SURVEY
RAMP "C"

END EB I-4 ON-RAMP "C"
WPI Segment No. 447159-1

MATCH LINE, SEE SHEET 5

N
0 20 100
Feet

NOTE:

FPID No. 443318-1 CURRENTLY UNDER DESIGN
INTERCHANGE IMPROVEMENT OF I-4/SR 400
FROM WEST OF BRANCH FORBES RD TO
EAST OF BRANCH FORBES RD AS OF OCTOBER 2022

AERIAL REFLECTS EXISTING CONDITIONS.

DATE OF AERIAL: FEBRUARY 2020

DRAFT

These maps are provided for informational and planning purposes only. All information is subject to change.
Dated 8/15/2024

LEGEND

- WETLANDS BOUNDARY
- OTHER SURFACE WATERS BOUNDARY
- FLOODPLAINS AREA
- PREFERRED SMF AND FPC AREA
- POTENTIAL BUSINESS RELOCATION
- POTENTIAL RESIDENTIAL RELOCATION
- POTENTIALLY CONTAMINATED SITE
- PROPERTY LINE
- EXISTING ROW
- EXISTING LA ROW
- PROPOSED ROW
- MILLING AND RESURFACING
- PROPOSED SIDEWALK/ SHARED USE PATH
- IMPROVEMENTS BY FDOT
- PROPOSED MEDIAN (SOD)
- PROPOSED TRAFFIC SEPARATOR

CONSOR ENGINEERS, LLC
2818 Cypress Ridge Blvd. Suite 200
Wesley Chapel, Florida 33544
Phone: (813) 435-2600 Fax: (813) 435-2601
Certificate of Authorization No. 9302

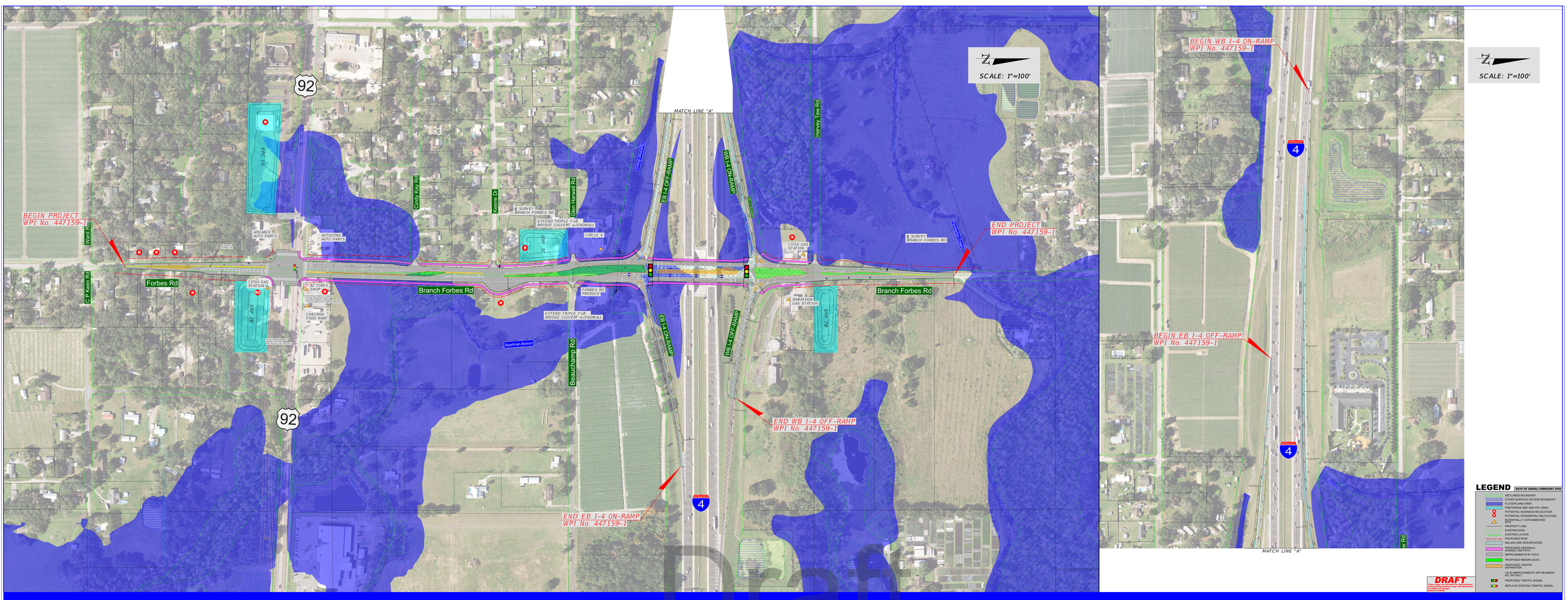
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
	HILLSBOROUGH	447159-1-22-01

Branch Forbes Road PD&E STUDY
From South of US 92 to
North of Interstate 4 (SR 400)
DRAFT Alternative Concept Plans
WPI Segment No.: 447159-1

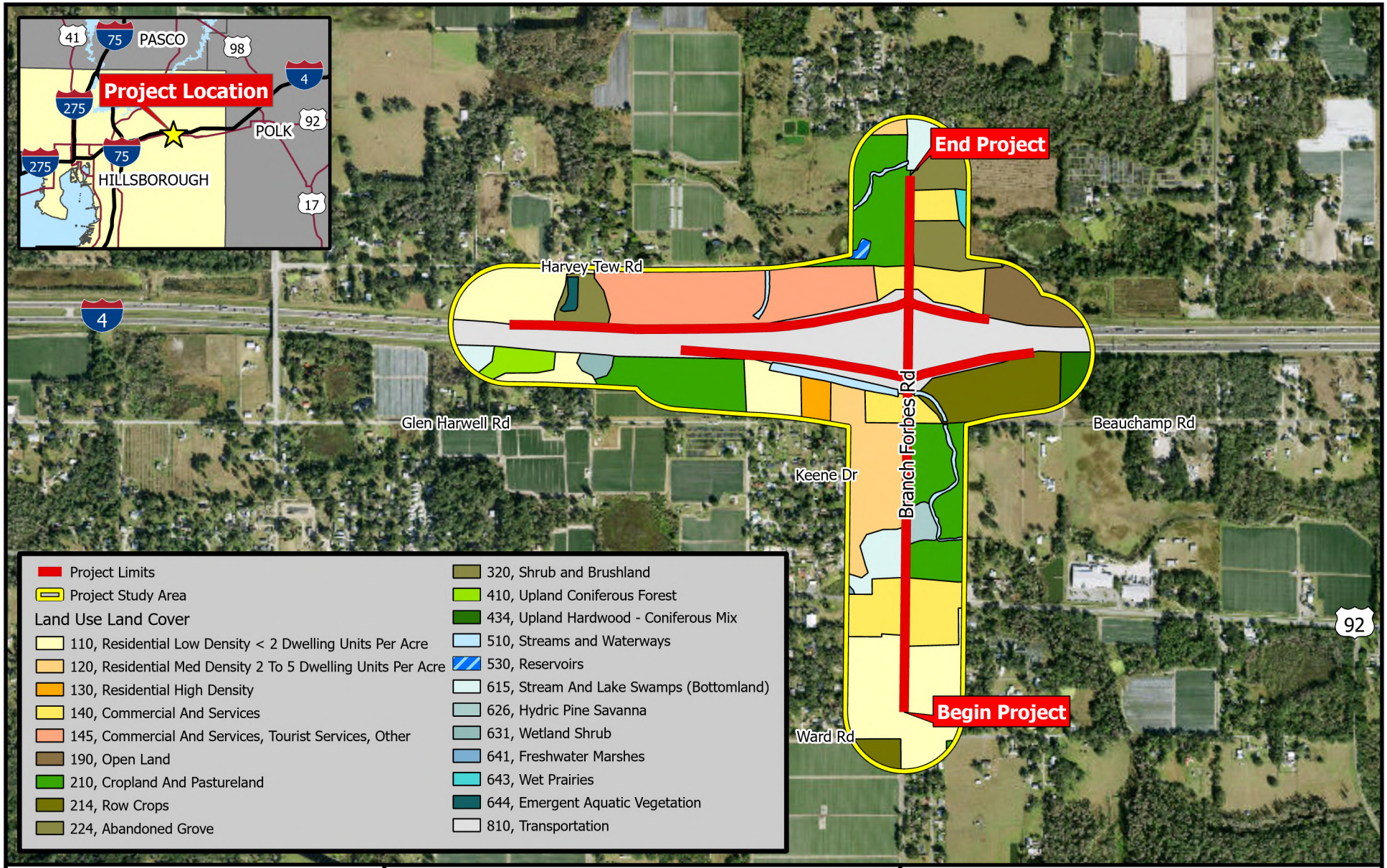
SHEET NO. 9

5lamd 8/15/2024 10:52:02 AM c:\pw_work\american-pw-01\d0115094\PLANEM07.dgn MODEL:Default



BRANCH FORBES ROAD From South of US 92 to North of Interstate 4
WPI Segment No. 447159-1

APPENDIX B Land Use



FDOT

Branch Forbes Road PD&E Study

South of US 92 to North of I-4

FPID: 447159-1

Draft

N

Appendix A: SWFWMD Land Use

0 0.25 0.5 Miles

APPENDIX C Site Photographs

Forested Wetland-7 SE view

Forested Wetland-7 S view

West view of stream north of I-4

East view of stream south of I-4

West view of stream south of I-4

SMF 2B east view

SMF 3C NW view

SMF 7B East view

FPC 1A Dry Depression

FPC 1A wet depression South view

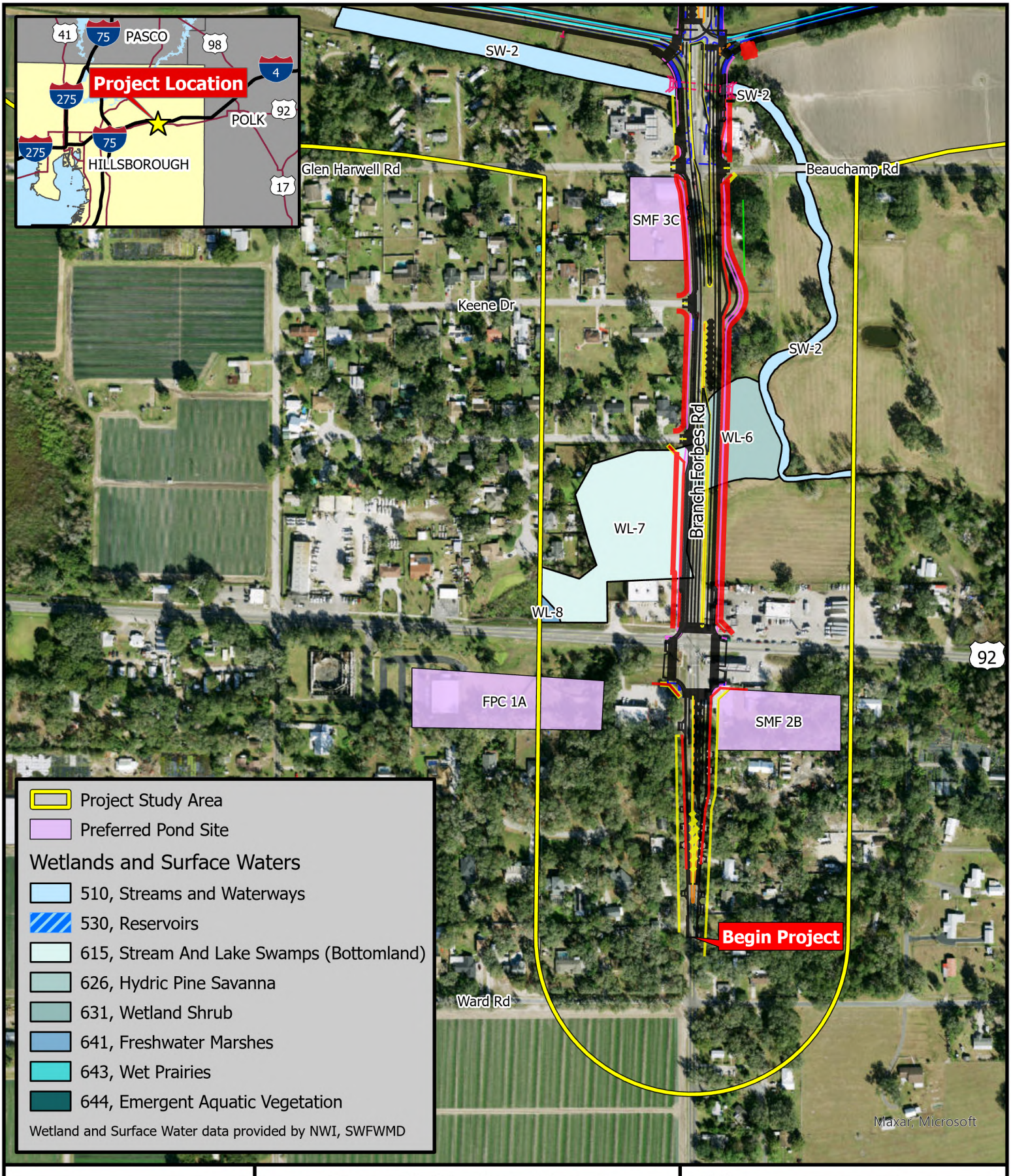
FPC 1A SW view

FPC 1A NE view

WL 6

Abandoned Grove next to WL 6

APPENDIX D Wetlands & Other Surface Waters



FDOT

Branch Forbes Road PD&E Study

South of US 92 to North of I-4

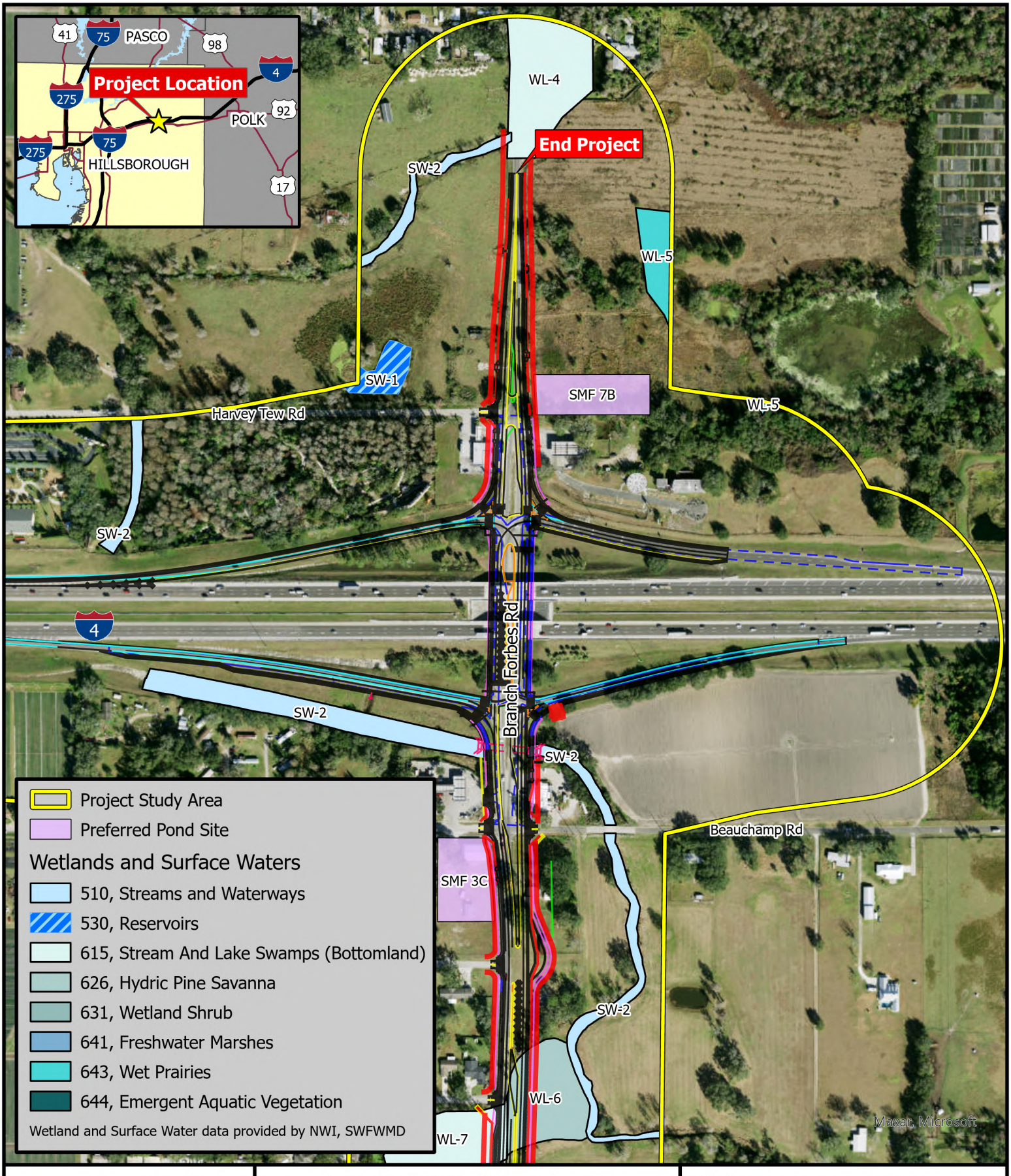
FPID: 447159-1

Draft

N

Appendix C: Wetlands and Surface Waters

0 250 500 750 Feet



Branch Forbes Road PD&E Study

South of US 92 to North of I-4

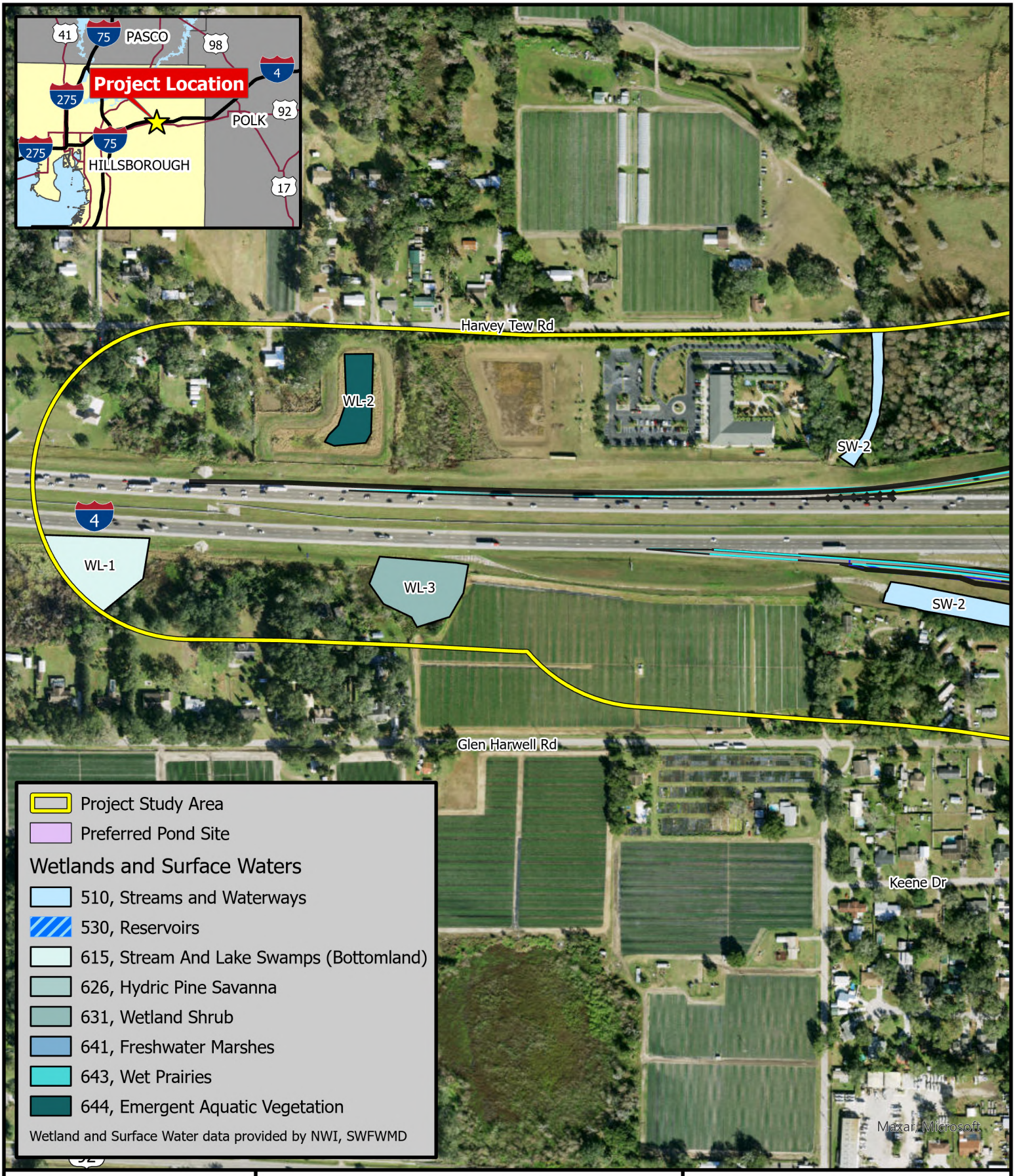
FPID: 447159-1

Draft

N

Appendix C: Wetlands and Surface Waters

0 250 500 750 Feet



FDOT

Branch Forbes Road PD&E Study

South of US 92 to North of I-4

FPID: 447159-1

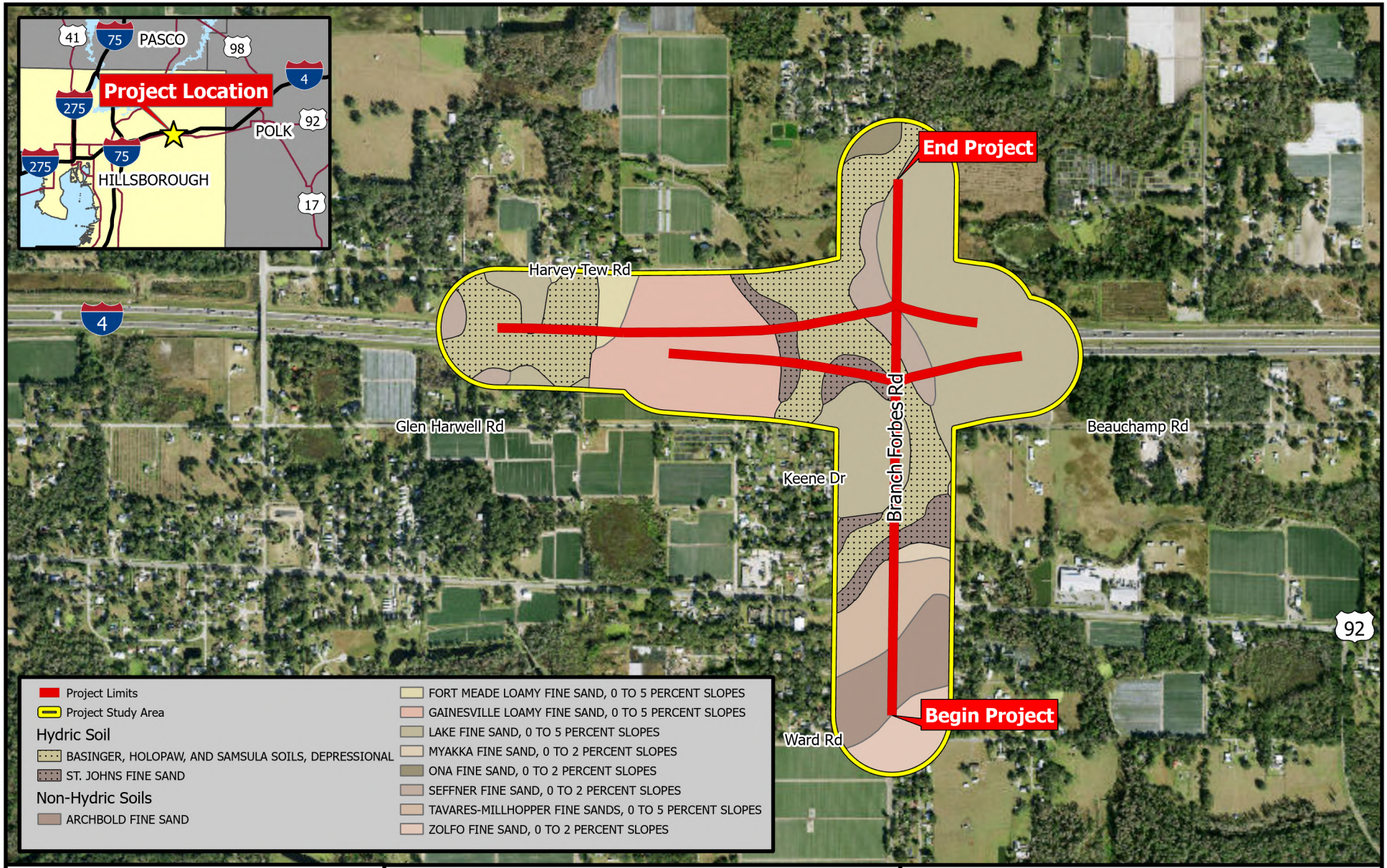
Draft

N

Appendix C: Wetlands and Surface Waters

0 250 500 750 Feet

APPENDIX E NRCS Detailed Soils Map



FDOT

Branch Forbes Road PD&E Study

South of US 92 to North of I-4

FPID: 447159-1

N

0 0.25 0.5 Miles

Appendix D: NRCS Soils

APPENDIX F IPaC Report

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Hillsborough County, Florida

Local office

Florida Ecological Services Field Office

(352) 448-9151
(772) 562-4288
fw4flesregs@fws.gov

777 37th St
Suite D-101
Vero Beach, FL 32960-3559

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

---

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Birds

NAME	STATUS
Eastern Black Rail *Laterallus jamaicensis ssp. jamaicensis* Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/10477	Threatened
Everglade Snail Kite *Rostrhamus sociabilis plumbeus* Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/7713	Endangered
Whooping Crane *Grus americana* No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/758	EXPN
Wood Stork *Mycteria americana* No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8477	Threatened

Reptiles

NAME	STATUS
Eastern Indigo Snake *Drymarchon couperi* Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/646	Threatened
Hawksbill Sea Turtle *Eretmochelys imbricata* Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/3656	Endangered

Leatherback Sea Turtle Dermochelys coriacea Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/1493	Endangered

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Pygmy Fringe-tree Chionanthus pygmaeus No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1084	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act[1] and the Migratory Bird Treaty Act[2].

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below.

Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

There are likely bald eagles present in your project area. For additional information on bald eagles, refer to Bald Eagle Nesting and Sensitivity to Human Activity

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Sep 1 to Jul 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see

below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

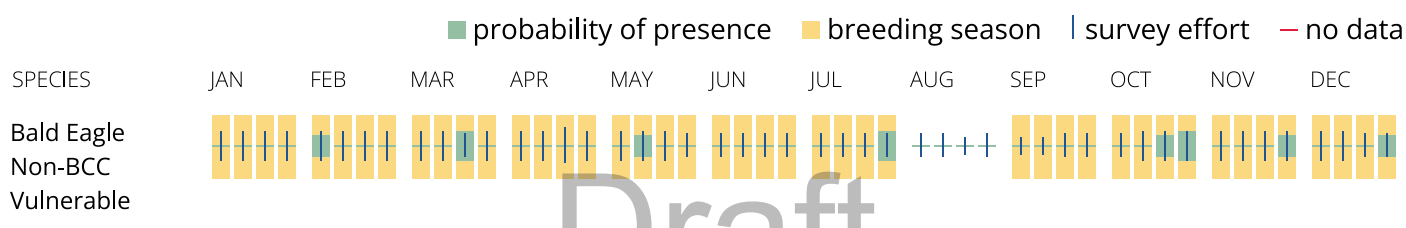
Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply). To see a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
American Kestrel Falco sparverius paulus This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9587	Breeds Apr 1 to Aug 31
Bachman's Sparrow Peucaea aestivalis This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/6177	Breeds May 1 to Sep 30
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Sep 1 to Jul 31

Chimney Swift Chaetura pelagica — Breeds Mar 15 to Aug 25
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Great Blue Heron Ardea herodias occidentalis — Breeds Jan 1 to Dec 31
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Lesser Yellowlegs Tringa flavipes — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9679

Painted Bunting Passerina ciris — Breeds Apr 25 to Aug 15
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Prairie Warbler Setophaga discolor — Breeds May 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Red-headed Woodpecker Melanerpes erythrocephalus — Breeds May 10 to Sep 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Swallow-tailed Kite Elanoides forficatus — Breeds Mar 10 to Jun 30
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/8938

Worthington's Marsh Wren Cistothorus palustris griseus — Breeds Apr 10 to Aug 31
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

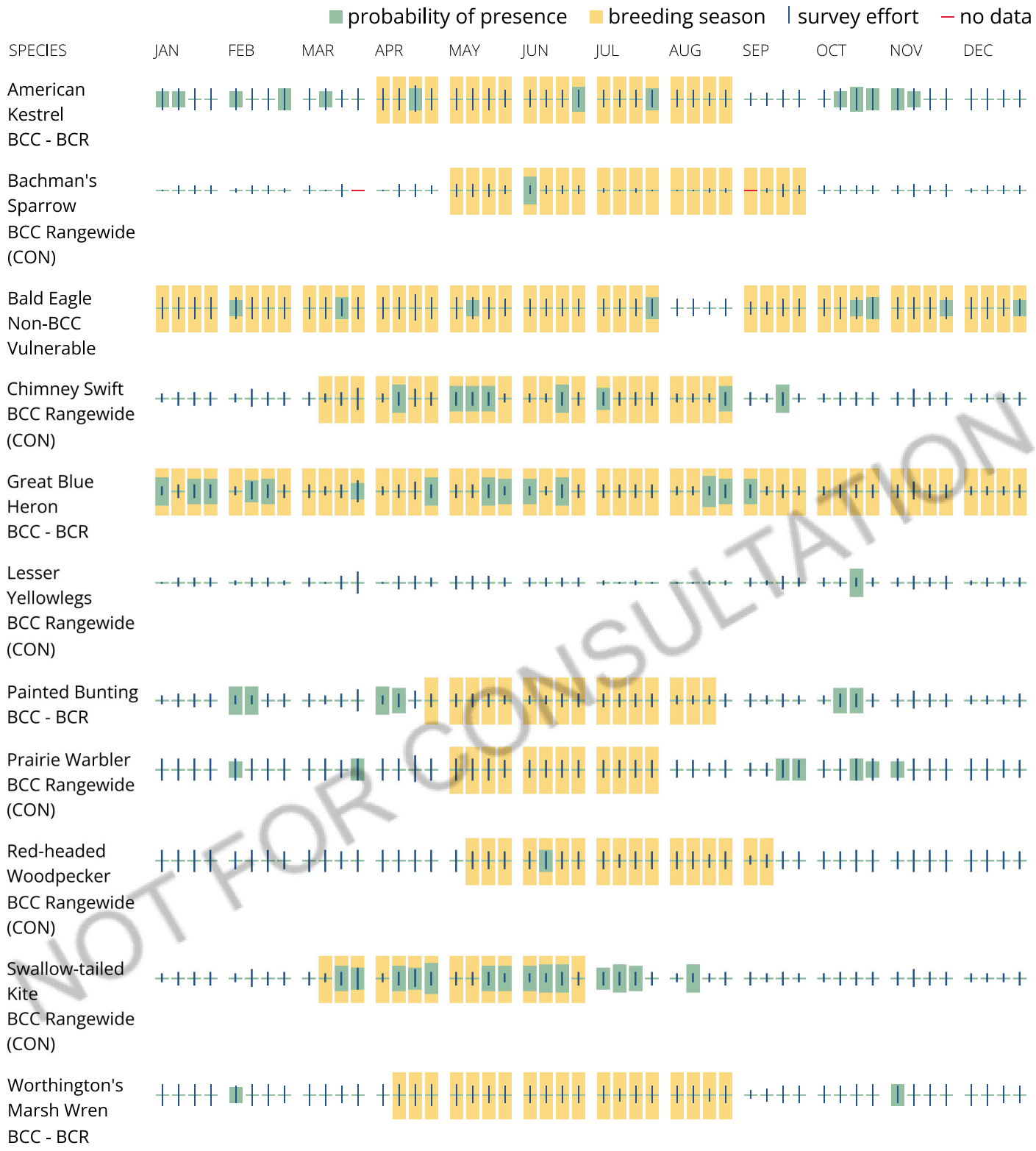
Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure.

To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in

offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Wetland information is not available at this time

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

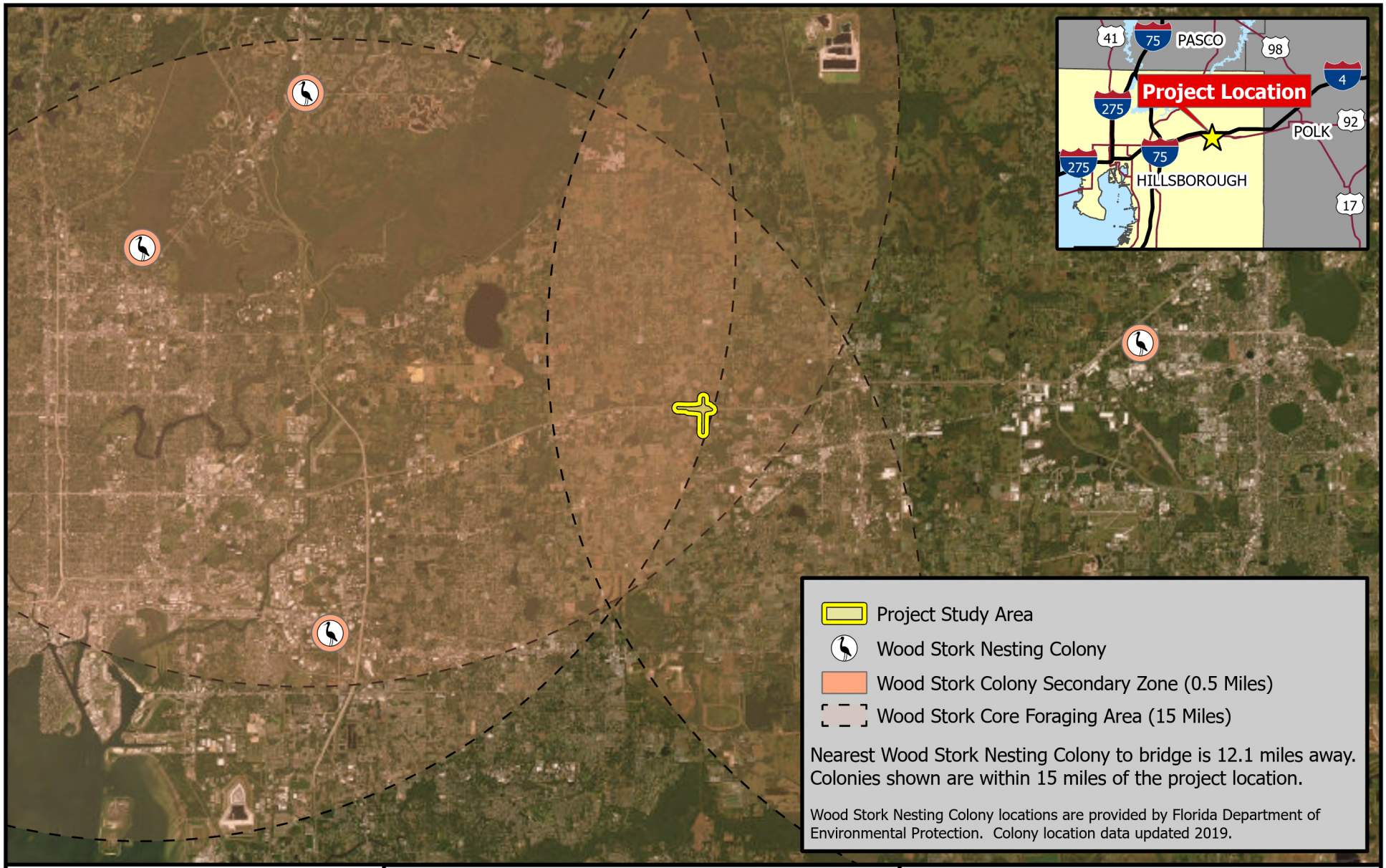
Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

APPENDIX G Wood Stork CFA Colonies



FDOT

Branch Forbes Road PD&E Study

South of US 92 to North of I-4

FPID: 447159-1

Draft

Appendix G: Wood Stork Colonies

N

0 2.5 5 10 Miles

APPENDIX H Standard Protection Measures for the Eastern Indigo Snake

STANDARD PROTECTION MEASURES FOR THE EASTERN INDIGO SNAKE

U.S. Fish and Wildlife Service

May 2024

The Standard Protection Measures for the Eastern Indigo Snake (Plan) below has been developed by the U.S. Fish and Wildlife Service (USFWS) in Florida and Georgia for use by project proponents and their construction personnel help minimize adverse impacts to eastern indigo snakes. However, implementation of this Plan does not replace any state of federal consultation or regulatory requirements. At least 30 days prior to any land disturbance activities, the project proponent shall notify the appropriate USFWS Field Office (see Field Office contact information) via e-mail that the Plan will be implemented as described below.

As long as the signatory of the e-mail certifies compliance with the below Plan (including use of the approved poster and pamphlet (USFWS Eastern Indigo Snake Conservation webpage), no further written confirmation or approval from the USFWS is needed regarding use of this Plan as a component of the project.

If the project proponent 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. The project proponent 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.

STANDARD PROTECTION MEASURES

BEFORE AND DURING CONSTRUCTION ACTIVITIES:

- All Project personnel shall be notified about the potential presence and appearance of the federally protected eastern indigo snake (*Drymarchon couperi*).
- All personnel shall be advised that there are civil and criminal penalties for harassing, harming, pursuing, hunting, shooting, wounding, killing, capturing, or collecting the species, in knowing violation of the Endangered Species Act of 1973.
- The project proponent or designated agent will post educational posters in the construction office and throughout the construction site. The posters must be clearly visible to all construction staff and shall be posted in a conspicuous location in the

Project field office until such time that Project construction has been completed and time charges have stopped.

- Prior to the onset of construction activities, the project proponent or 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 pamphlet 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. Photos of eastern indigo snakes may be accessed on USFWS, Florida Fish and Wildlife Conservation Commission and/or Georgia Department of Natural Resources websites.
- Each day, prior to the commencement of maintenance or construction activities, the Contractor shall perform a thorough inspection for the species of all worksite equipment.
- If an eastern indigo snake (alive, dead or skin shed) 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 Office. The contact information for the USFWS is provided below and on the referenced posters and pamphlets.
- During initial site clearing activities, an onsite observer is recommended 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).
- Periodically during construction activities, the project area should be visited 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.
- For erosion control use biodegradable, 100% natural fiber, net-free rolled erosion control blankets to avoid wildlife entanglement.

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 (See USFWS Field Office Contact Information).

USFWS FIELD OFFICE CONTACT INFORMATION

Georgia Field Office: Phone: (706) 613-9493, email: gaes_assistance@fws.gov
Florida Field Office: Phone: (352) 448-9151, email: fw4flesregs@fws.gov

POSTER & PAMPHLET INFORMATION

Posters with the following information shall be placed at strategic locations on the construction site and along any proposed access roads (final posters for Plan compliance are available on our website in English and Spanish and should be printed on 11 x 17in or larger paper and laminated (USFWS Eastern Indigo Snake Conservation webpage). Pamphlets are also available on our webpage and should be printed on 8.5 x 11in paper and folded, and available and distributed to staff working on the site.

POSTER CONTENT (ENGLISH):

ATTENTION

Federally-Threatened Eastern Indigo Snakes may be present on this site!

Killing, harming, or harassing eastern indigo snakes is strictly prohibited and punishable under State and Federal Law.

IF YOU SEE A LIVE EASTERN INDIGO SNAKE ON THE SITE:

• Stop land disturbing activities and allow the snake time to move away from the site without interference. Do NOT attempt to touch or handle the snake.

• Take photographs of the snake, if possible, for identification and documentation purposes.

• Immediately notify supervisor/agent, and a U.S. Fish and Wildlife Service (USFWS) Ecological Services Field Office, with the location information and condition of the snake.

• If the snake is located near clearing or construction activities that will cause harm to the snake, the activities must pause until a representative of the USFWS returns the call (within one day) with further guidance.

IF YOU SEE A DEAD EASTERN INDIGO SNAKE ON THE SITE:

• Stop land disturbing activities and immediately notify supervisor/applicant, and a USFWS Ecological Services Field 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.

DESCRIPTION: The eastern indigo snake is one of the largest non-venomous snakes in North America, reaching up to 8 ft long. Named for the glossy, blue-black scales above and slate blue below, they often have orange to reddish color (cream color in some cases)

in the throat area. They are not typically aggressive.

SIMILAR SPECIES: The black racer resembles the eastern indigo snake. However, black racers have a white or cream chin, and thinner bodies.

LIFE HISTORY: Eastern indigo snakes live in a variety of terrestrial habitat types. Although they prefer uplands, they also use wetlands and agricultural areas. They will shelter inside gopher tortoise burrows, other animal burrows, stumps, roots, and debris piles. Females may lay from 4 to 12 white eggs as early as April through June, with young hatching in late July through October.

PROTECTED STATUS: The eastern indigo snake is protected by the USFWS, Florida Fish and Wildlife Conservation Commission, and Georgia Department of Natural Resources. Any attempt to kill, harm, harass, pursue, hunt, shoot, wound, trap, capture, collect, or engage eastern indigo snakes is prohibited by the U.S. Endangered Species Act. Penalties include a maximum fine of $25,000 for civil violations and up to $50,000 and/or imprisonment for criminal offenses. Only authorized individuals with a permit (or an Incidental Take Statement associated with a USFWS Biological Opinion) may handle an eastern indigo snake.

Please contact your nearest USFWS Ecological Services Field Office if a live or dead eastern indigo snake is encountered:

Florida Office: (352) 448-9151

Georgia Office: (706) 613-9493

POSTER CONTENT (SPANISH):

ATENCIÓN

¡Especie amenazada, la culebra Índigo del Este, puede ocupar el área!

Matar, herir o hostigar culebras Índigo del Este es estrictamente prohibido bajo la Ley Federal.

SI VES UNA CULEBRA ÍNDIGO DEL ESTE O UNA CULEBRA NEGRA VIVA EN EL ÁREA:

• Pare excavación y permite el movimiento de la culebra fuera del área sin interferir. NO atentes tocar o recoger la culebra.

• Fotografié la culebra si es posible para identificación y documentación.

• Notifique supervisor/agente, y la Oficina de Campo de Servicios Ecológicos del Servicio Federal de Pesca y Vida Silvestre (USFWS) apropiada con información acerca del sitio y condición de la culebra.

• Si la culebra está cerca de un área de construcción que le pueda causar daño, las actividades deben parar hasta un representante del USFWS regrese la llamada (dentro de un día) con más orientación.

SI VES UNA CULEBRA ÍNDIGO DEL ESTE MUERTA EN EL ÁREA:

• Pare excavación. Notifique supervisor/aplicante, y la Oficina de Campo de Servicios Ecológicos apropiada con información acerca del sitio y condición de la culebra.

• Fotografié la culebra si es posible para identificación y documentación.

• Emerge completamente la culebra en agua y congele la especie hasta que personal apropiado de la agencia de vida silvestre la recoja.

DESCRIPCIÓN. La culebra Índigo del Este es una de las serpientes sin veneno más grande en Norte América, alcanzando hasta 8 pies de largo. Su nombre proviene del color azul-negro brilloso de sus escamas, pero pueden tener un color anaranjado-rojizo (color crema en algunos casos) en su mandíbula inferior. No tienden a ser agresivas.

SERPIENTES PARECIDAS. La corredora negra, que es de color negro sólido, es la única otra serpiente que se asemeja a la Índigo del Este. La corredora negra se diferencia por una mandíbula inferior color blanca o crema y un cuerpo más delgado.

HÁBITATS Y ECOLOGÍA. La culebra Índigo del Este vive en una variedad de hábitats, incluyendo tierras secas, humedales, y áreas de agricultura. Ellas buscan refugio en agujeros o huecos de tierra, en especial madrigueras de tortugas de tierra. Las hembras ponen 4 hasta 12 huevos blancos entre abril y junio, y la cría emergen entre julio y octubre.

PROTECCIÓN LEGAL. La culebra Índigo del Este es clasificada como especie amenazada por el USFWS, la Comisión de Conservación de Pesca y Vida Silvestre de Florida y el Departamento de Recursos Naturales de Georgia. Intento de matar, hostigar, herir, lastimar, perseguir, cazar, disparar, capturar, colectar o conducta parecida hacia las culebras Índigo del Este es prohibido por la Ley Federal de Especies en Peligro de Extinción. Penalidades incluyen un máximo de $25,000 por violaciones civiles y $50,000 y/o encarcelamiento por actos criminales. Solos individuales autorizados con un permiso o Determinación de toma incidental (Incidental Take Statement) asociado con una Opinión Biológico del USFWS pueden recoger una Índigo del Este.

Por favor de contactar tu Oficina de Campo de Servicios Ecológicos más cercana si encuentras una culebra Índigo del Este viva o muerta:

Oficina de Florida: (352) 448-9151

Oficina de Georgia: (706) 613-9493

APPENDIX I 2017 Eastern Indigo Snake Addendum

United States Department of the Interior
U. S. FISH AND WILDLIFE SERVICE
7915 BAYMEADOWS WAY, SUITE 200
JACKSONVILLE, FLORIDA 32256-7517

IN REPLY REFER TO:
August 13, 2013

Colonel Alan M. Dodd, District Engineer
Department of the Army
Jacksonville District Corps of Engineers
P.O Box 4970
Jacksonville, Florida 32232-0019
(Attn: Mr. David S. Hobbie)

RE: Update Addendum to USFWS Concurrence Letter to U.S. Army Corps of Engineers Regarding Use of the Attached Eastern Indigo Snake Programmatic Effect Determination Key

Dear Colonel Dodd:

This letter is to amend the January 25, 2010, letter to the U.S. Army Corps of Engineers regarding the use of the attached eastern indigo snake programmatic effect determination key (key). It supersedes the update addendum issued January 5, 2012.

We have evaluated the original programmatic concurrence and find it suitable and appropriate to extend its use to the remainder of Florida covered by the Panama City Ecological Services Office.

On Page 2

The following replaces the last paragraph above the signatures:

"Thank you for your continued cooperation in the effort to conserve fish and wildlife resources. Any questions or comments should be directed to Annie Dziergowski (North Florida ESO) at 904-731-3089, Harold Mitchell (Panama City ESO) at 850-769-0552, or Victoria Foster (South Florida ESO) at 772-469-4269."

On Page 3

The following replaces both paragraphs under "Scope of the key":

"This key should be used only in the review of permit applications for effects determinations for the eastern indigo snake within the State of Florida, and not for other listed species or for aquatic resources such as Essential Fish Habitat (EFH)."

On Page 4

The following replaces the first paragraph under Conservation Measures:

"The Service routinely concurs with the Corps' "not likely to adversely affect" (NLAA) determination for individual project effects to the eastern indigo snake when assurances are given that

our *Standard Protection Measures for the Eastern Indigo Snake* (Service 2013) located at: http://www.fws.gov/northflorida/IndigoSnakes/indigo-snakes.htm will be used during project site preparation and project construction. There is no designated critical habitat for the eastern indigo snake."

On Page 4 and Page 5 (Couplet D)

The following replaces D. under Conservation Measures:

D. The project will impact less than 25 acres of xeric habitat (scrub, sandhill, or scrubby flatwoods) or less than 25 active and inactive gopher tortoise burrows.....*go to* E

The project will impact more than 25 acres of xeric habitat (scrub, sandhill, or scrubby flatwoods) or more than 25 active and inactive gopher tortoise burrows and consultation with the Service is requested[2].....*"may affect"*

On Page 5

The following replaces footnote #3:

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

Thank you for making these amendments concerning the Eastern Indigo Snake Key. If you have any questions, please contact Jodie Smithem of my staff at the address on the letterhead, by email at jodie_smithem@fws.gov, or by calling (904)731-3134.

Sincerely,

Dawn Jennings
Acting Field Supervisor

cc:
Panama City Ecological Services Field Office, Panama City, FL
South Florida Ecological Services Field Office, Vero Beach, FL

United States Department of the Interior

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

January 25, 2010

David S. Hobbie
Chief, Regulatory Division
U.S. Army Corps of Engineers
Post Office Box 4970
Jacksonville, Florida 32232-0019

Service Federal Activity Code: 41420-2009-FA-0642
Service Consultation Code: 41420-2009-I-0467
41910-2010-I-0045
Subject: North and South Florida Ecological Services Field Offices Programmatic Concurrence for Use of Original Eastern Indigo Snake Key(s) Until Further Notice

Dear Mr. Hobbie:

The U.S. Fish and Wildlife Service's (Service) South and North Florida Ecological Services Field Offices (FO), through consultation with the U.S. Army Corps of Engineers Jacksonville District (Corps), propose revision to both Programmatic concurrence letters/keys for the federally threatened Eastern Indigo Snake (*Drymarchon corais couperi*), (indigo snake), and now provide one key for both FO's. The original programmatic key was issued by the South Florida FO on November 9, 2007. The North Florida FO issued a revised version of the original key on September 18, 2008. Both keys were similar in content, but reflected differences in geographic work areas between the two Field Offices. The enclosed key satisfies each office's responsibilities under the Endangered Species Act of 1973, as amended (Act) (87 Stat. 884; 16 U.S.C.1531 *et seq.*).

Footnote number 3 in the original keys indicated "A member of the excavation team should be authorized for Incidental Take during excavation through either a section 10(a)(1)(A) permit issued by the Service or an incidental take permit issued by the Florida Fish and Wildlife Conservation Commission (FWC)." We have removed this reference to a Service issued Section 10(a)(1)(A) permit, as one is not necessary for this activity. We also referenced the FWC's revised April 2009 Gopher Tortoise Permitting Guidelines with a link to their website for updated excavation guidance, and have provided a website link to our Standard Protection Measures. All other conditions and criteria apply.

We believe the implementation of the attached key achieves our mutual goal for all users to make consistent effect determinations regarding this species. The use of this key for review of projects

located in all referenced counties in our respective geographic work areas leads the Service to concur with the Corps' determination of "may affect, not likely to adversely affect" (MANLAA) for the Eastern indigo snake. The biological rationale for the determinations is contained within the referenced documents and is submitted in accordance with section 7 of the Act.

Should circumstances change or new information become available regarding the eastern indigo snake or implementation of the key, the determinations may be reconsidered as deemed necessary.

Thank you for your continued cooperation in the effort to conserve fish and wildlife resources. Any questions or comments should be directed to either Allen Webb (Vero Beach) at 772-562-3909, extension 246, or Jay Herrington (Jacksonville) at 904-731-3326.

Sincerely,

Paul Souza
Field Supervisor
South Florida Ecological Services Office

David L. Hankla
Field Supervisor
North Florida Ecological Services Office

Enclosure

cc: electronic only
FWC, Tallahassee, Florida (Dr. Elsa Haubold)
Service, Jacksonville, Florida (Jay Herrington)
Service, Vero Beach, Florida (Sandra Sneckenberger)

Eastern Indigo Snake Programmatic Effect Determination Key

Scope of the key

This key should be used only in the review of permit applications for effects determinations within the North and South Florida Ecological Services Field Offices Geographic Areas of Responsibility (GAR), and not for other listed species or for aquatic resources such as Essential Fish Habitat (EFH). Counties within the **North** Florida 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.

Counties in the **South** Florida GAR include Broward, Charlotte, Collier, De Soto, Glades, Hardee, Hendry, Highlands, Lee, Indian River, Martin, Miami-Dade, Monroe, Okeechobee, Osceola, Palm Beach, Polk, Sarasota, St. Lucie.

Habitat

Over most of its range, the eastern indigo snake frequents several habitat types, including pine flatwoods, scrubby flatwoods, high pine, dry prairie, tropical hardwood hammocks, edges of freshwater marshes, agricultural fields, coastal dunes, and human-altered habitats (Service 1999). Eastern indigo snakes appear to need a mosaic of habitats to complete their life cycle. Wherever the eastern indigo snake occurs in xeric habitats, it is closely associated with the gopher tortoise *(Gopherus polyphemus),* the burrows of which provide shelter from winter cold and summer desiccation (Speake et al. 1978; Layne and Steiner 1996). Interspersion of tortoise-inhabited uplands and wetlands improves habitat quality for this species (Landers and Speake 1980; Auffenberg and Franz 1982).

In south Florida, agricultural sites, such as sugar cane fields, created in former wetland areas are occupied by eastern indigo snakes (Enge pers. comm. 2007). Formerly, indigo snakes would have only occupied higher elevation sites within the wetlands. The introduction of agriculture and its associated canal systems has resulted in an increase in rodents and other species of snakes that are prey for eastern indigo snakes. The result is that indigos occur at higher densities in these areas than they did historically.

Even though thermal stress may not be a limiting factor throughout the year in south Florida, indigo snakes still seek and use underground refugia. On the sandy central ridge of central Florida, eastern indigos use gopher tortoise burrows more (62 percent) than other underground refugia (Layne and Steiner 1996). Other underground refugia used include armadillo (*Dasypus novemcinctus*) burrows near citrus groves, cotton rat (*Sigmodon hispidus*) burrows, and land crab (*Cardisoma guanhumi*) burrows in coastal areas (Service 2006). Natural ground holes, hollows at the base of trees or shrubs, ground litter, trash piles, and crevices of rock-lined ditch walls are also used (Layne and Steiner 1996). These refugia are used most frequently where tortoise burrows are not available, principally in low-lying areas off the central and coastal ridges. In extreme south Florida (the Everglades and Florida Keys), indigo snakes are found in tropical

hardwood hammocks, pine rocklands, freshwater marshes, abandoned agricultural land, coastal prairie, mangrove swamps, and human-altered habitats (Steiner et al. 1983). It is suspected that they prefer hammocks and pine forests, because most observations occur in these habitats disproportionately to their presence in the landscape (Steiner et al. 1983). Hammocks may be important breeding areas as juveniles are typically found there. The eastern indigo snake is a snake-eater so the presence of other snake species may be a good indicator of habitat quality.

Conservation Measures

The Service routinely concurs with the Corps' "not likely to adversely affect" (NLAA) determination for individual project effects to the eastern indigo snake when assurances are given that our *Standard Protection Measures for the Eastern Indigo Snake* (Service 2004) located at: http://www.fws.gov/northflorida/IndigoSnakes/indigo-snakes will be used during project site preparation and project construction. There is no designated critical habitat for the eastern indigo snake.

In an effort to reduce correspondence in effect determinations and responses, the Service is providing an Eastern Indigo Snake Effect Determination Key, similar in utility to the West Indian Manatee Effect Determination Key and the Wood Stork Effect Determination Keys presently being utilized by the Corps. If the use of this key results in a Corps' determination of "no effect" for a particular project, the Service supports this determination. If the use of this Key results in a determination of NLAA, the Service concurs with this determination and no additional correspondence will be necessary[1]. This key is subject to revisitation as the Corps and Service deem necessary.

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

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

B. Permit will be conditioned for use of the Service's *Standard Protection Measures For The Eastern Indigo Snake* during site preparation and project construction.....*go to* C

Permit will not be conditioned as above for the eastern indigo snake, or it is not known whether an applicant intends to use these measures and consultation with the Service is requested[2] .....*"may affect"*

C. There are gopher tortoise burrows, holes, cavities, or other refugia where a snake could be buried or trapped and injured during project activities .....*go to* D

There are no gopher tortoise burrows, holes, cavities, or other refugia where a snake could be buried or trapped and injured during project activities .....*"NLAA"*

D. The project will impact less than 25 acres of xeric habitat supporting less than 25 active and inactive gopher tortoise burrows.....*go to* E

The project will impact more than 25 acres of xeric habitat or more than 25 active and inactive gopher tortoise burrows and consultation with the Service is requested[2]..... *"may affect"*

E. Any permit will be conditioned such that all gopher tortoise burrows, active or inactive, will be evacuated prior to site manipulation in the vicinity of the burrow[3]. If an indigo snake is encountered, the snake must be allowed to vacate the area prior to additional site manipulation in the vicinity. Any permit will also be conditioned such that holes, cavities, and snake refugia other than gopher tortoise burrows will be inspected each morning before planned site manipulation of a particular area, and, if occupied by an indigo snake, no work will commence until the snake has vacated the vicinity of proposed work..... *"NLAA"*

Permit will not be conditioned as outlined above and consultation with the Service is requested[2] ..... *"may affect"*

---

[1]With an outcome of "no effect" or "NLAA" as outlined in this key, the requirements of section 7 of the Act are fulfilled for the eastern indigo snake and no further action is required.

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

[3] If burrow excavation is utilized, it should be performed by experienced personnel. The method used should minimize the potential for injury of an indigo snake. Applicants should follow the excavation guidance provided within the Florida Fish and Wildlife Conservation Commission's revised April 2009 Gopher Tortoise Permitting Guidelines located at **http://myfwc.com/License/Permits_ProtectedWildlife.htm#gophertortoise**. A member of the excavation team should be authorized for Incidental Take during excavation through an incidental take permit issued by the Florida Fish and Wildlife Conservation Commission.

APPENDIX J Wood Stork Key Determination Sheets

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 K Hillsborough County Listed Plant Species

Group	Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status	Tracked?
Plants and Lichens	*Acrostichum aureum*	Golden Leather Fern	G5	S3		T	Y
Habitat: Brackish and freshwater marshes.							
Plants and Lichens	*Adiantum tenerum*	Brittle Maidenhair Fern	G5	S3		E	Y
Habitat: Restricted to moist, shaded, limestone ledges, sink walls, and grottoes.							
Plants and Lichens	*Agrimonia incisa*	Incised Groove-bur	G3	S2		T	Y
Habitat: Fire-maintained sandhills, upland pine, and upland mixed woodlands. Open pine woods to mixed pine-oak woods bluffs, small clearings, and old roads, sometimes at the edge of upland hardwood forests and other mesic habitats.							
Plants and Lichens	*Andropogon arctatus*	Pinewoods Bluestem	G3	S3		T	Y
Habitat: Dry to wet flatwoods and sand pine scrub.							
Plants and Lichens	*Asplenium auritum*	Auricled Spleenwort	G5	S2		E	Y
Habitat: Epiphytic on tree trunks and logs in swamps and hammocks.							
Plants and Lichens	*Astragalus obcordatus*	Florida Milkvetch	G3G4	S2S3		N	Y
Habitat: Sandy pine woods of the Atlantic and Gulf Coastal Plains.							
Plants and Lichens	*Bonamia grandiflora*	Florida Bonamia	G3	S3	T	E	Y
Habitat: Openings or disturbed areas in white sand scrub on central Flroida ridges, with scrub oaks, snad pine, and lichens.							
Plants and Lichens	*Calopogon multiflorus*	Many-Flowered Grass-pink	G2G3	S2S3		T	Y
Habitat: Dry to moist flatwoods with longleaf pine, wire grass, saw palmetto.							
Plants and Lichens	*Carex chapmanii*	Chapman's Sedge	G3	S3		T	Y
Habitat: Calcarous hydric hammocks and bottomland forests; usually on wooded stream banks and in river floodplains.							
Plants and Lichens	*Centrosema arenicola*	Sand Butterfly Pea	G2Q	S2		E	Y
Habitat: Sandhill, scrubby flatwoods, dry upland woods.							

Plants and Lichens	*Cheiroglossa palmata*	Hand Fern	G4	S3		E	Y
Habitat: Hammocks and cypress swamps; epiphytic, usually on Sabal Palmetto.							
Plants and Lichens	*Chionanthus pygmaeus*	Pygmy Fringe Tree	G2G3	S2S3	E	E	Y
Habitat: Scrub, sandhills, and xeric hamocks; primarily on the Lake Wales Ridge. May form thickers with evergeeen scrub oaks and shrubs.							
Plants and Lichens	*Chrysopsis floridana*	Florida Goldenaster	G3	S3	E, PDL	E	Y
Habitat: Sunny, bare patches of sand in sand pine scrub and ecotones between this community and scrubby flatwoods; disturbed areas of loose sand; rarely oak hammocks.							
Plants and Lichens	*Glandularia tampensis*	Tampa Vervain	G2	S2		E	Y
Habitat: Openings in moist hammocks, live oak-cabbage palm hammocks, pine-palmetto flatwoods and in disturbed, sandy areas.							
Plants and Lichens	*Gymnopogon chapmanianus*	Chapman's Skeletongrass	G3	S3		N	Y
Habitat: Scrubby flatwoods, snadhill, dry, sandy flatwoods, dry prairies, and scrub.							
Plants and Lichens	*Helianthus debilis* ssp. *vestitus*	Hairy Beach Sunflower	G5T2	S2		N	Y
Habitat: Beach dunes and clearings in open pine-saw palmetto or into coastal tropical hammocks.							
Plants and Lichens	*Hypoxis sessilis*	Glossyseed Yellow Stargrass	G3	S2S3		N	Y
Habitat: Occurs wet to mesic pinelands and savannas.							
Plants and Lichens	*Lechea cernua*	Nodding Pinweed	G3	S3		T	Y
Habitat: Open, unshaded white sands of scrub and scrubby flatwoods. This plant is often associated with Flroida rosemary.							
Plants and Lichens	*Lechea divaricata*	Pine Pinweed	G2	S2		E	Y
Habitat: Dry sandy soils in openings, mainly in scrubby flatwoods.							

Plants and Lichens	*Lilium catesbaei*	Pine Lily	G4	S4		T	Y
Habitat: Mesic flatwoods, dry prairies, and wet prairies.							
Plants and Lichens	*Listera australis*	Southern Twayblade	G4	S3S4		T	Y
Habitat: Low moist woodlands, mesic and wet flatwoods, ravines, banks of streams and hydric hammocks.							
Plants and Lichens	*Lobelia cardinalis*	Cardinal Flower	G5	SNR		T	Y
Habitat: Streambanks, hydric hammocks, spring runs and swamps; often in standing water.							
Plants and Lichens	*Lythrum flagellare*	Lowland Loosestrife	G3	S3		E	Y
Habitat: Mucky or sandy-peat muck soils with high hydroperiods in floodplain marshes, wet prairies, and edges of cypress depressions, can also be found along roadsides and maintained ROWs.							
Plants and Lichens	*Matelea floridana*	Florida Spiny-pod	G2	S2		E	Y
Habitat: Sandhill, upland pine, and dry hammocks.							
Plants and Lichens	*Maytenus phyllanthoides*	Florida Mayten	G3G5	S3		T	Y
Habitat: Coastal rockland hammock edges.							
Plants and Lichens	*Meniscium serratum*	Toothed Maiden Fern	G5	S1		E	Y
Habitat: Cypress swamps, sloughs and flooplains; occasionally epiphytic.							
Plants and Lichens	*Nolina brittoniana*	Britton's Beargrass	G3	S3	E	E	Y
Habitat: Scrub, sandhills, scrubby flatwoods, and xeric hammocks.							
Plants and Lichens	*Opuntia stricta*	Erect Prickly Pear	G4?	S3S4		T	Y
Habitat: Pine rocklands, shell middens dunes, and coastal hammocks.							
Plants and Lichens	*Pecluma dispersa*	Widespread Polypody	G5	S2		E	Y
Habitat: Usually on limestone outcrops, occasionally epiphytic in hammocks							

Plants and Lichens	*Pecluma plumula*	Plume Polypody	G5	S2		E	Y
Habitat: Wet hammocks and swamps; epiphytic on live oaks, occasionally on rocks or terrestrial.							
Plants and Lichens	*Pecluma ptilodon* var. *bourgeauana*	Comb Polypody	G5?TNR	S2		E	Y
Habitat: Floodpalin forests, moist hammocks, and swamps; terrestrial or epiphytic on tree bases, occasionally on rocks.							
Plants and Lichens	*Pinguicula caerulea*	Blueflower Butterwort	G4	S3S4		T	Y
Habitat: Pine flatwoods and wet prairies.							
Plants and Lichens	*Pinguicula lutea*	Yellow Flowered Butterwort	G4G5	S3		T	Y
Habitat: Pine flatwoods and wet prairies.							
Plants and Lichens	*Platanthera nivea*	Snowy Orchid	G3G4	S3		T	Y
Habitat: Wet flatwoods and prairie.							
Plants and Lichens	*Pogonia ophioglossoides*	Rose Pogonia	G5	S3S4		T	Y
Habitat: Wet prairies marshes, and seepage slopes; wet roadside ditches.							
Plants and Lichens	*Protocodon robinsiae*	Brooksville Bellflower	G1	S1	E	E	Y
Habitat: Wet, grassy slopes and drying pond edges.							
Plants and Lichens	*Rhynchospora megaplumosa*	Large-plumed Beaksedge	G2	S2		E	Y
Habitat: Scrubby flatwoods and scrubby to mesic flatwoods transition areas.							
Plants and Lichens	*Schizachyrium niveum*	Scrub Bluestem	G1G2	S1S2		E	Y
Habitat: White sand patches in rosemary scrub; also sand pine scrub and oak scrub.							
Plants and Lichens	*Schwalbea americana*	Chaffseed	G2	S1	E	E	Y
Habitat: Moist, grassy ecotones around ponds in longleaf pine sandhills; longleaf pine savannas snadhills, and flatwoods. Plants are semi-parasitic on the roots of gallberry, huckleberry, St. John's-wort, silk grass, and others.							

Plants and Lichens	*Spiranthes longilabris*	Giant Spiral Ladies-tresses	G3	S3		T	Y
Habitat: Wet prairies and flatwoods							
Plants and Lichens	*Stachys agraria*	Shade Betony	G5	S1		N	Y
Habitat: Shaded rocky or gravelly soils in woods, ravines in prairies, on banks, and open grounds.							
Plants and Lichens	*Tephrosia corallicola*	Rockland Hoary-pea	G1	S1		E	Y
Habitat: Pine rocklands and adjacent ruderal areas.							
Plants and Lichens	*Tillandsia balbisiana*	Balbis' Airplant	G4G5	S3		T	Y
Habitat: Hammocks and swamps, and the periphery of marshes and sloughs.							
Plants and Lichens	*Tillandsia fasciculata*	Common wild-pine	G5	S4?		E	Y
Habitat: Swamps, hammocks, flatwoods, and the periphery of basin marshes and sloughs.							
Plants and Lichens	*Tillandsia utriculate*	Spreading Air-plant	G5	S3		E	Y
Habitat: Bright, exposed areas in swamps, hammocks, mesic flatwoods, and occasionally on the periphery of basin marshes and in improved pastures.							
Plants and Lichens	*Triphora amazonica*	Broad-leaved Nodding-caps	GU	S1		E	Y
Habitat: Rich, well-drained, moist humus of upland hardwood hammocks.							
Plants and Lichens	*Vachellia tortuosa*	Poponax	G4G5	S1		E	Y
Habitat: Shell middens.							
Plants and Lichens	*Zephyranthes atamasca* var. *treatiae*	Treat's Zephyr lily	G4G5T4	S4		T	Y
Habitat: Bottomland forests, hydric hammocks, wet prairies and flatwoods.							
Plants and Lichens	*Zephyranthes simpsonii*	Redmargin Zephyr lily	G2G3	S2S3		T	Y
Habitat: Wet flatwoods and meadows. Also, in ditches and wet pastures; often in burned over areas.							

APPENDIX L UMAM Sheets

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

Site/Project Name	Application Number	Assessment Area Name or Number
Branch Forbes Road	N/A	Surface Water 2 (Spartman Branch)

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
5100	R2UBHx	Impact	0.02 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)
Pemberton Creek	3F	N/A

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

Borders the east side of a hydric pine savanna along Branch Forbes Road, north of the intersection with US 92 (E Hillsborough Ave). It flows under Branch Forbes Road and I-4 via underground culverts/outflow devices.

Assessment area description

This riverine habitat is part of Spartman Branch. Some portions of the stream have been physically altered by human activity for flood control. Vegetation lining the banks consists of emergent and low-lying shrub species including maidencane, smartweed, ludwigia, and Carolina willow. Top portions of the banks are lined with live oak, cabbage palm, and bahiagrass. There is flowing water that makes its way to Pemberton Creek.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
This riverine system flows throughout the project study area, including through underground culverts under Branch Forbes Road south of the EB exit of I-4	This type of surface water habitat is not unique to the area.

Functions	Mitigation for previous permit/other historic use
This surface water feature provides stormwater and roadway runoff drainage during high flow events. It exhibits low wildlife habitat availability.	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)
Various species of minnows, alligator, snapping turtle, great egret, green heron, great blue heron, snowy egret, little blue heron, tricolored heron, and river otter	Wood stork (federally-threatened), Florida sandhill crane (state-threatened), little blue heron (state-threatened), tricolored heron (state-threatened); **low intensity foraging**

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

There was no evidence of wildlife utilization at the time of the field survey.

Additional relevant factors:

N/A

Assessment conducted by:	Assessment date(s):
James Zweep	Apr-24

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
Branch Forbes Road	N/A	SW 2 (Spartman Branch)
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Impact	James Zweep	Aug-24

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: 4 with: 4	This surface water habitat is located on the west and east side of Branch Forbes Road south of I-4 from the EB exit. It is a continuous stream that flows underneath Branch Forbes Road via an underground culvert/outflow device. It has been physically altered to increase the flow of excess stormwater/runoff.	
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current: 5 with: 5	There was a significant amount of flowing water present in this riverine system during field reviews; vegetation suggests that water is continuously present throughout the year. This surface water habitat provides outflow support for drainage water coming from Branch Forbes Road, as well as agricultural fields. As a result, the water quality is likely diminished. The banks have been eroded, likely due to flash flooding during storm events, with banks being roughly 5-7 feet deep.	
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current: 3 with: 2	This surface water feature is a riverine system which consists mostly of ludwigia, sedges, and maidencane lining the banks, with bahiagrass at the top of the bank. Only one side of the stream remains naturally planted with trees; the road side has been denuded. Oaks are the dominant species type present about 5 feet from banks; all are old and have likely been present for over 15 years. Recruitment is low; all adolescent trees on the edge are dead. Present land management practices and irregular water levels would not sustain a wetland ecosystem. Invasive exotics such as the Japanese climbing fern can be found along trees on the banks edges.	

Score = sum of above scores/30 (if uplands, divide by 20)		
current or w/o pres: 0.4	with: 0.37	

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

For impact assessment areas
FL = delta x acres = 0.02 x 0.03 = **0.0006**

Delta = [with-current]
0.03

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
Branch Forbes Road	N/A	WL 6

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
6260	PFO1C	Impact	0.49 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)
Pemberton Creek	3F	N/A

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

This wetland connects with Spartman Branch to the east. It is connected to a stream and lake swamp (bottomlands) by an underground culvert/outflow device (underneath Branch Forbes Road) on the west side of the wetland.

Assessment area description

This wetland is a freshwater forested/shrub wetland on the east side of Branch Forbes Road, north of US-92 (E Hillsborough Ave). It consists of a sparse tree canopy that includes bald cypress, live oak, and cabbage palm. Few sweetgum, red maple, and water oaks line the wetland edge bordering the stream. The understory is open consisting of bahiagrass, maidencane, and smartweed (the latter two predominant along the stream). There is no standing water, but water marks on trees that border the stream indicates shallow flood events during periods of high rain. The wetland is significantly degraded, with no slash pines remaining and degraded wet understory plants.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
This wetland is bound by Branch Forbes Road on the west side, and Spartman Branch to the east. It is surrounded by agricultural fields to the north and south.	This type of wetland is not unique to the region.

Functions	Mitigation for previous permit/other historic use
The wetland provides erosion control along Spartman Branch. It has low wildlife habitat availability.	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)
Florida sandhill crane, little blue heron, tricolored heron, great blue heron	Wood stork (federally-threatened), Florida sandhill crane (state-threatened), little blue heron (state-threatened), tricolored heron (state-threatened); ***low intensity loafing***

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

There was no evidence of wildlife utilization at the time of the field survey.

Additional relevant factors:

N/A

Assessment conducted by:	Assessment date(s):
James Zweep	Apr-24

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
Branch Forbes Road	N/A	WL 6
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Impact	James Zweep	Aug-24

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

.500(6)(a) Location and Landscape Support w/o pres or current: 3 with: 3	This wetland is located on the east side of Branch Forbes Road, north of US 92 (E Hillsborough Ave). It is connected to Spartman Branch on the east side of the wetland, and is connected to a stream and lake swamp (bottomlands) wetland to the west via underground culvert underneath Branch Forbes Road. Agricultural fields and urban development makes the area less accessible for terrestrial species. The wetland area is approximately 420-feet long by 170-feet wide.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current: 3 with: 3	There was no standing water present in this wetland during field reviews, but pockets of water were present in the stream bank of Spartman Branch. However, vegetation and water marks on trees indicates that this wetland holds water during periods of high rainfall. Canopy is thinned and no slash pines are remaining. There is no significant evidence of animal usage due to low species diversity and cover.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current: 3 with: 2	This wetland is classified as a hydric pine savanna; current conditions consist of a variety of tree species including bald cypress, live oak, and cabbage palm. Sweetgum, red maple and water oak is found lining the top of the stream bank that borders the east side of the wetland. The canopy is thinned and no slash pines are remaining. Multiple trees are leaning, dying, or covered in spanish moss. The understory is open consisting of bahiagrass, maidencane, and smartweed (the latter two predominant along the stream). This is likely due to the frequent inundations from land management practices that prevents plant species associated with hydric pine savannas, like gallberry and wiregrass, from developing. In addition, the lack of support for benthic communities, such as structural and topographical features, diminishes the value of this wetland. Litter can be found strewn throughout the wetland, likely from intentional litter and washes during storm events.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres	with
0.3	0.27

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

For impact assessment areas
FL = delta x acres = 0.49 x 0.03 = **0.01**

Delta = [with-current]
0.03

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
Branch Forbes Road	N/A	Wetland 7

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
6150	PFO2F	Impact	3.86 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)
Pemberton Creek	3F	N/A

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

Directly borders and connects with a scrub wetland to the southwest. Connected to a hydric pine savanna via underground culvert/outflow device (underneath Branch Forbes Road) on the east side of the wetland.

Assessment area description

This wetland is a freshwater forested/shrub wetland on the west side of Branch Forbes Road, north of US-92 (E Hillsborough Ave). This forest, which was inundated at the time of field reviews, consists of bald cypress, sweetgum, and water oak in the forest canopy. There is low-lying emergent and shrub species scattered throughout the area including swamp bay, button bush, and cabbage palm. Smartweed and maidencane can be found along the edges of the wetland.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
The wetland is bound by Branch Forbes road on the east side, Cindy kay Drive to the north, and other urban developments to the west and south.	This type of wetland is not unique to the area.

Functions	Mitigation for previous permit/other historic use
The wetland provides water collection from roadway and stormwater runoff. It has low wildlife habitat availability	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)
Cottonmouth, Florida banded water snake, great egret, great blue heron, night herons, little blue heron, snowy egret, tricolored heron, white ibis	Wood stork (federally-threatened), Florida sandhill crane (state-threatened), little blue heron (state-threatened), tricolored heron (state-threatened); low intensity loafing

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

There was no evidence of wildlife utilization at the time of the field survey

Additional relevant factors:

N/A

Assessment conducted by:	Assessment date(s):
James Zweep	Aug-24

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
Branch Forbes Road	N/A	WL 7
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Impact	James Zweep	Aug-24

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: 3	with: 3	This wetland is located on the west side of Branch Forbes Road, south of Cindy Kay Drive and north of US 92 (E Hillsborough Ave). It is connected to a scrub wetland to the southwest, and a hydric pine savanna to the east via underground culvert/outflow device (underneath Branch Forbes Road). The developed areas surrounding this wetland restricts its flow to Spartman Branch, making this site's purpose a stormwater/runoff collection site. The high level of development surrounding this wetland makes it less accessible by aquatic and terrestrial species. The area is approximately 480-feet long by 350-ft wide.
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 5	with: 5	Water was present in the wetland and vegetation indicates that this wetland holds water throughout most of the year. This wetland takes in excess drainage for water coming off of Branch Forbes Road, agriculture fields, and other developed areas surrounding the wetland. Therefore, it is likely saturated all year and inundated for most of the year, but the water quality is likely low and diminishes at times given the sources of water.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 5	with: 4	This is a forested wetland with a canopy dominated by bald cypress, with water oak, swamp bay, and sweet gum interspersed. Along the edges of the wetland include maidencane, smartweed, button bush, and cabbage palm. Invasive vines including bittersweet are present on some trees. Vegetation suggests that water levels are sufficient to sustain this wetland.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres: 0.43	with: 0.4

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

For impact assessment areas
FL = delta x acres = 0.12

Delta = [with-current]
0.03

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

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