

**FINAL**

**Natural Resources Evaluation Report**

Central Florida Expressway

State Road 414 Expressway Extension  
Project Development and Environment Study  
From US 441 to SR 434  
Orange County and Seminole County, Florida  
CFX Project Number: 414-227

Date: May 2022



# **FINAL**

## **Natural Resources Evaluation**

**State Road 414 Expressway Extension**  
**Project Development and Environment Study**  
From US 441 to SR 434  
Orange County and Seminole County, Florida

CFX Project Number: 414-227

**Prepared for:**  
Central Florida Expressway Authority  
4974 ORL Tower Road  
Orlando, FL 32807

**Submitted by:**  
ESA  
5404 Cypress Center Drive, Suite 125  
Tampa, FL 33609



**CENTRAL  
FLORIDA  
EXPRESSWAY  
AUTHORITY**

May 2022



## EXECUTIVE SUMMARY

The Central Florida Expressway Authority has initiated a Project Development and Environment study to evaluate alternatives for a proposed grade-separated expressway extension of the tolled SR 414 (John Land Apopka Expressway) in Orange and Seminole Counties, Florida. The study limits extend along the existing SR 414 (Maitland Boulevard) corridor from US 441 (Orange Blossom Trail) to State Road 434 (Forest City Road). The approximate 2.8-mile-long study corridor generally runs along the Orange and Seminole county lines and is located within the city of Maitland (Orange County) and the city of Altamonte Springs (Seminole County). Natural resources results from the PD&E evaluation are documented below.

### Protected Species and Habitats

Federally listed species which may be affected, but are not likely to be adversely affected by the project include:

- Eastern indigo snake (*Drymarchon corais couperi*); and
- Wood stork (*Mycteria americana*).

The project is anticipated to have no effect on the following federally listed species:

- Sand skink (*Neoseps reynoldsi*);
- Florida scrub-jay (*Aphelocoma coerulescens*);
- Red-cockaded woodpecker (*Dryobates borealis*); and
- Everglade snail kite (*Rostrhamus sociabilis plumbeus*).

There is no adverse effect anticipated on the following state-protected species:

- Gopher tortoise (*Gopherus polyphemus*);
- Florida sandhill crane (*Antigone pratensis canadensis*);
- Southeastern American kestrel (*Falco sparverius paulus*); and
- Wading birds including the little blue heron (*Egretta caerulea*) and roseate spoonbill (*Platalea ajaja*).

There is no effect anticipated on the following state-protected species:

- Short-tailed snake (*Lampropeltis extenuate*);
- Florida pine snake (*Pituophis melanoleucus mugitus*); and
- Florida burrowing owl (*Athene cunicularia floridana*).



The project will have no effect on the bald eagle (*Haliaeetus leucocephalus*) or various state-protected bat species. There is no adverse effect anticipated to the Florida black bear (*Ursus americanus floridanus*). These two species or groups of animals which may occur in the project vicinity are not listed as threatened, endangered, or species of special concern, but receive other legal protection.

### **Wetlands and Surface Waters**

For the Preferred Alternative, approximately 1 acre of wetlands and <0.5 acre of permanent fill surface water impacts are expected to systems considered jurisdictional by the Florida Department of Environmental Protection State 404 Program and St. Johns River Water Management District. The CFX will address wetland and/or surface water impacts and provide appropriate wetland mitigation in future phases of this project.

### **Essential Fish Habitat**

In accordance with the Magnuson-Stevens Fishery Conservation and Management Act of 1996 (50 Code of Federal Regulations Section 600.920), as amended through January 12, 2007 and as administered by the National Oceanic and Atmospheric Administration's National Marine Fisheries Service, federal agencies must consult with NMFS regarding any of their actions authorized, funded, or undertaken, or proposed to be authorized, funded, or undertaken that may adversely affect essential fish habitat. As stated in the PD&E Manual Part 2, Chapter 17, NMFS has designated Florida Department of Transportation to conduct EFH consultations in Florida pursuant to 50 CFR § 600.920(c) in a July 19, 2000 letter to Federal Highway Administration and FDOT.

No EFH is documented within or adjacent to the project limits; therefore, no EFH will be impacted.



# TABLE OF CONTENTS

<b>1.0</b>	<b>PROJECT SUMMARY .....</b>	<b>1-1</b>
1.1	PROJECT BACKGROUND AND DESCRIPTION .....	1-1
1.2	PURPOSE & NEED.....	1-2
1.3	REPORT PURPOSE.....	1-4
<b>2.0</b>	<b>ALTERNATIVES ANALYSIS.....</b>	<b>2-1</b>
2.1	ALTERNATIVES CONSIDERED.....	2-1
2.1.1	Viable Alternatives .....	2-1
2.1.2	Preferred Alternative.....	2-2
2.1.3	No-Build Alternative .....	2-2
<b>3.0</b>	<b>EXISTING ENVIRONMENTAL CONDITIONS.....</b>	<b>3-1</b>
3.1	SOILS.....	3-1
3.2	LAND USE AND COVER TYPES.....	3-2
3.2.1	Drainage and Hydrology .....	3-3
3.2.2	Floodplains and Regulatory Floodways.....	3-4
3.3	SIGNIFICANT WATERS AND PROTECTION AREAS.....	3-4
<b>4.0</b>	<b>PROTECTED SPECIES AND HABITAT .....</b>	<b>4-1</b>
4.1	AGENCY COORDINATION.....	4-1
4.2	METHODOLOGY .....	4-1
4.3	RESULTS.....	4-3
4.3.1	Wildlife .....	4-6
4.3.2	Protected Plant Species .....	4-12
4.4	EVALUATION OF ALTERNATIVES .....	4-14
4.4.1	Direct Impacts .....	4-14
4.4.2	Indirect, Secondary, and Cumulative Impacts .....	4-16
<b>5.0</b>	<b>WETLANDS AND OTHER SURFACE WATER EVALUATION.....</b>	<b>5-1</b>
5.1	AGENCY COORDINATION.....	5-1
5.2	METHODOLOGY .....	5-1
5.3	RESULTS.....	5-2
5.4	EVALUATION OF ALTERNATIVES .....	5-4
5.4.1	Direct Impacts .....	5-4
5.4.2	Indirect, Secondary, and Cumulative Impacts .....	5-5



5.5	WETLAND IMPACT MITIGATION.....	5-6
<b>6.0</b>	<b>PERMITTING .....</b>	<b>6-1</b>
6.1	SECTION 404 DREDGE AND FILL PERMIT.....	6-1
6.2	ERP.....	6-1
6.3	NPDES.....	6-2
<b>7.0</b>	<b>CONCLUSIONS.....</b>	<b>7-1</b>
7.1	PROTECTED SPECIES AND HABITATS .....	7-1
7.2	WETLANDS.....	7-1
7.3	COMMITMENTS .....	7-2
<b>8.0</b>	<b>REFERENCES.....</b>	<b>8-1</b>

## LIST OF FIGURES

Figure 1-1	Regional Location Map .....	1-2
------------	-----------------------------	-----

## LIST OF TABLES

Table 3-1	Existing NRCS Soil Types within Project Study Area.....	3-2
Table 3-2	Existing Land Use/Land Cover within Study Area .....	3-4
Table 4-1	Potentially Occurring and Observed Listed Wildlife Species .....	4-4
Table 4-2	Potentially Occurring Listed Plant Species within the Preferred Alternative .....	4-13
Table 4-3	Proposed Land Use/ Land Cover Impacts by Alternative.....	4-15
Table 5-1	Wetland and Surface Water Impacts Associated with the Preferred Alternative.....	5-3
Table 5-2	UMAM Summary for Impacts Associated with the Preferred Alternative .....	5-3

## APPENDICES

<b>Appendix A</b>	<b>Project Study Area NRCS Soils Map and Descriptions</b>
<b>Appendix B</b>	<b>Project Area Land Use Map and Descriptions</b>
<b>Appendix C</b>	<b>Representative Habitat Photographs</b>



<b>Appendix D</b>	<b>Project Study Area Parks and Conservation Lands</b>
<b>Appendix E</b>	<b>Listed Species: Historic Location Data and Field Observations</b>
<b>Appendix F</b>	<b>Standard Protection Measures for the Eastern Indigo Snake</b>
<b>Appendix G</b>	<b>Wetland Maps</b>



## **ACRONYMS AND ABBREVIATIONS**

BGEPA	Bald and Golden Eagle Protection Act
BMAP	basin management action plan
BMP	best management practice
CA	consultation area
CFA	core foraging area
CFR	Code of Federal Regulations
CFX	Central Florida Expressway Authority
CH	critical habitat
CWA	Clean Water Act
EFH	essential fish habitat
EPA	Environmental Protection Agency
ERP	Environmental Resource Permit
ESA	Endangered Species Act
ETAT	Environmental Technical Advisory Team
ETDM	Efficient Transportation Decision Making
FAC	Florida Administrative Code
FDACS	Florida Department of Agricultural and Consumer Services
FDEP	Florida Department of Environmental Protection
FDOT	Florida Department of Transportation
FEGN	Florida Ecological Greenways Network
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FLUCCS	Florida Land Use, Cover, and Forms Classification System
FNAI	Florida Natural Areas Inventory
FS	Florida Statutes
FWC	Florida Fish and Wildlife Conservation Commission
GIS	Geographic Information System
MBTA	Migratory Bird Treaty Act
MP	mile post
MUID	Mapping Unit Identifier
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRE	Natural Resources Evaluation
NWI	National Wetlands Inventory
OFW	Outstanding Florida Water
PD&E	Project Development and Environment
RHPZ	Riparian Habitat Protection Zone
ROW	right-of-way
SFH	suitable foraging habitat
SJRWMD	St. Johns River Water Management District
SR	State Road



SSC	species of special concern
UCF	University of Central Florida
UMAM	Uniform Mitigation Assessment Methodology
USACE	United States Army Corp of Engineers
USFWS	United States Fish and Wildlife Service
US 441	U.S. Highway 441



# 1.0 PROJECT SUMMARY

## 1.1 Project Background and Description

The Central Florida Expressway Authority is conducting the State Road 414 Expressway Extension Project Development and Environment Study to evaluate alternatives for a proposed grade-separated expressway extension of the tolled SR 414 (John Land Apopka Expressway). The existing SR 414 Expressway provides regional connectivity from State Road 429 and U.S. Highway 441 in Apopka and extends south and east to SR 414 (Maitland Boulevard) just east of U.S. Route 441. **Figure 1-1** presents the Regional Location Map. The study limits extend along the existing SR 414 (Maitland Boulevard) corridor from US 441 (Orange Blossom Trail) to State Road 434 (Forest City Road). The approximate 2.8-mile-long study corridor generally runs along the Orange and Seminole county lines and is located within the city of Maitland (Orange County) and the city of Altamonte Springs (Seminole County). Both CFX and the Florida Department of Transportation own portions of SR 414 within the project study limits. CFX owns and operates the SR 414 (John Land Apopka Expressway) from SR 429 to just east of US 441, and FDOT owns and operates SR 414 (Maitland Boulevard) from just east of US 441 to U.S. Highway 17/U.S. Highway 92. The existing SR 414 (Maitland Boulevard) is a four-lane divided urban principal arterial with three major signalized intersections at Rose Avenue/Bear Lake Road, Eden Park Road and Magnolia Homes Road, and an unsignalized intersection at Gateway Drive between the grade-separated intersections of SR 414/US 441 and SR 414/SR 434. A minor grade-separated overpass exists over the Little Wekiva Canal and an access road between the Lake Lotus Park and Ride lot and Lake Lotus Park.

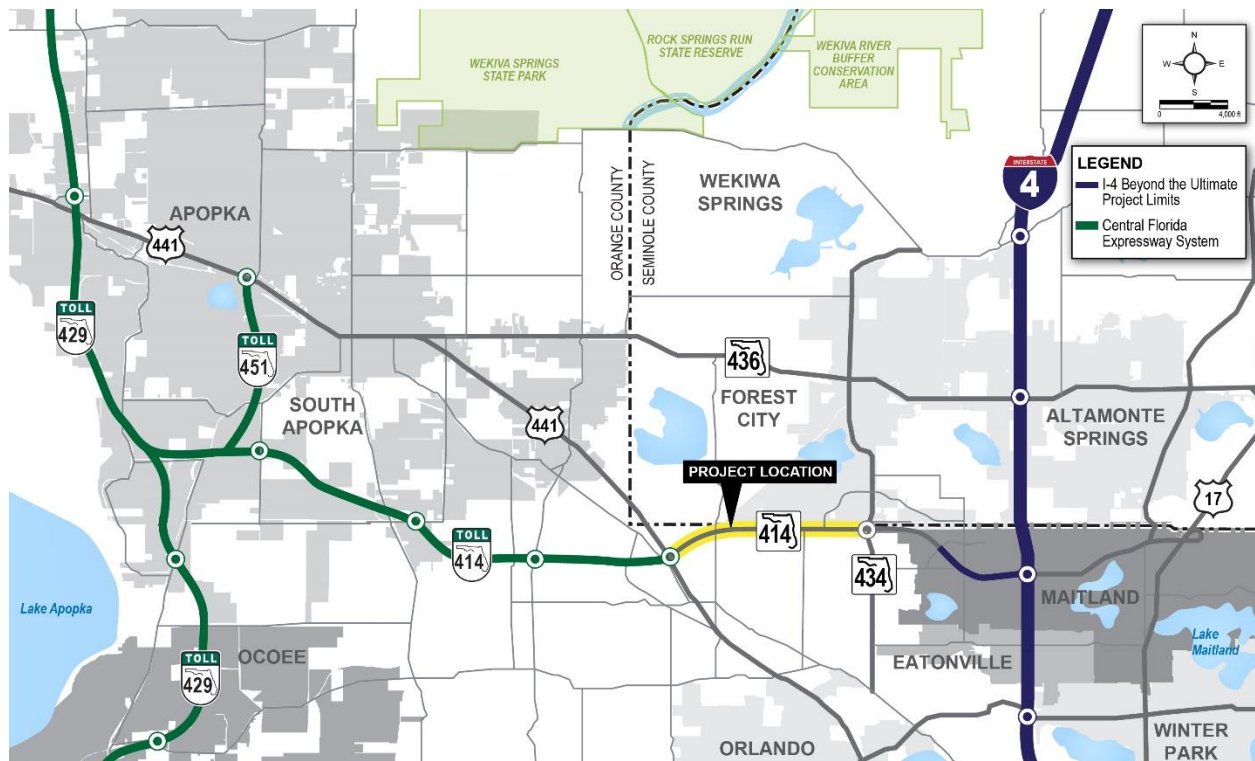
The PD&E Study is evaluating alternatives for a proposed grade-separated SR 414 Expressway Extension to provide system linkage between the western terminus of the SR 414 (John Land Apopka Expressway) and Interstate 4. The SR 414 Expressway Extension includes alternatives for a facility with up to two lanes in each direction from US 441 to SR 434. Project alternatives involve various configurations of grade-separated express lanes on SR 414 (Maitland Boulevard) to provide needed capacity between US 441 and SR 434 while maintaining the existing local access lanes. Alternatives considered include reversible, bi-directional and convertible express lanes along the project corridor to avoid right-of-way needs.

Prior to the PD&E Study, CFX completed the SR 414 Reversible Express Lanes Schematic Report that included an assessment of tolled, directional express lanes within the median of SR 414 (CFX 2019). The Report recommended a two-lane reversible grade separated viaduct in the median of SR 414. The Report also found that a single lane bi-directional express lane would require a 75 percent wider bridge and was not considered viable.

The proposed improvements also include reconfiguring the existing at-grade SR 414 (Maitland Boulevard) to accommodate the SR 414 toll facility while maintaining two SR 414 local access lanes in each direction. The study will involve analysis of intersection improvements, bridge modifications at Lake Bosse and Little Wekiva Canal, stormwater management facilities, pedestrian and bicycle needs and access management modifications. The No-Build Alternative is a viable option throughout the study.



**Figure 1-1**  
**Regional Location Map**



## 1.2 Purpose & Need

The purpose of the SR 414 Expressway Extension PD&E Study is to provide needed capacity on SR 414 and improve system connectivity between SR 429 and I-4 to meet future traffic needs. The 2.3-mile-long project corridor of SR 414 is an arterial link between two limited-access facilities, creating a limited-access gap along SR 414 between SR 429 and I-4. The proposed grade-separated SR 414 Expressway Extension will separate the high-speed through traffic from the local traffic, allowing for greater mobility and reduced congestion for both facilities. The proposed improvements are to 1) accommodate anticipated transportation demand, 2) improve safety, 3) improve system connectivity/linkage and 4) support multimodal opportunities.

### 1.2.1 Anticipated Transportation Demand

According to the CFX's Fiscal Year 2019 *General Traffic and Earnings Consultant's Annual Report* (CDM Smith 2020a), Orange County's population for 2018 is estimated at 1.38 million and Seminole County's is estimated at 468,000. The historical annual growth rates of 2.9 percent (Orange County) and 2.5 percent (Seminole County) since 1980 are anticipated to continue with population increasing to 1.9 million in Orange County and 633,000 in Seminole County by 2040. Additionally, historical annual growth of employment in these two counties is 3.6 percent and 4.1 percent since 1980 and growth in employment



is expected to continue with both county employment bases growing by 43 percent to 1.61 million jobs in Orange County and 406,000 jobs in Seminole County.

With growth rates in population and employment in these two counties continuing to grow and continued development near SR 429, the traffic volumes on SR 414 continue to increase. Traffic from eastern Lake County (west of the study area) heading to the employment centers in the Orlando Metropolitan Area is steadily increasing. The Maitland Center, located on SR 414 just west of I-4, is a large office complex whose employment base contributes to the existing traffic congestion along SR 414 in the morning (eastbound direction) and afternoon (westbound direction) peak hours.

Preliminary traffic analysis indicates that the average daily traffic through study corridor could be as high as 105,000 vehicles per day by 2045. The proposed improvements are needed to accommodate the existing traffic congestion and future transportation demand along SR 414.

### **1.2.2 Safety**

According to crash data extracted from the state's Crash Analysis Reporting system, the study area experienced 340 total crashes between 2014 and 2018. Of these crash incidents, 153 resulted in injury (CDM Smith 2020b). By separating high-speed through traffic from local traffic, along with improving the pedestrian and bicycle facilities, the proposed improvements will improve accommodations for pedestrians, bicyclists and motorized vehicles throughout the study area.

### **1.2.3 Improved System Connectivity/Linkage**

As stated above, there is a limited-access gap along SR 414 within the project study limits. Interregional traffic from surrounding counties and municipalities to the north and northwest travel through the study limits to access urban areas via SR 429 and I-4. The I-4 Ultimate Improvement Project (under construction) includes improvements to SR 414 that provide a limited-access facility between SR 434 and I-4 at the eastern end of the study area as well as increased capacity. SR 414 connects two Strategic Intermodal System facilities: SR 429 and I-4. On the west side of the interchange of SR 414/US 441 is a large industrial area and the Florida Central Railroad. Florida Central Railroad is a Class III railroad serving industries in Lake and Orange counties and connects to CSX Transportation railroad in Orlando. These industrial and commercial land uses generate a significant amount of truck traffic through the study corridor. The proposed improvements will improve the system to system connectivity between SR 429 and I-4, and improve regional connectivity between the surrounding areas. Additionally, the proposed project is anticipated to improve truck traffic mobility between I-4 and the industrial area at the western end of the study area, thereby supporting regional economies and interregional connectivity. Further, east-west connectivity in the region is limited.

### **1.2.4 Multimodal Opportunities**

The surrounding land use within the project limits is primarily residential. West of Gateway Drive, 5-foot-wide sidewalks are located on both sides of SR 414 along with a 4-foot-wide undesignated bicycle lane. These facilities connect to nearby trails and the city of Altamonte Springs Lake Lotus Park within the study area. The proposed improvements will consider wider sidewalks and dedicated buffered bicycle lanes to enhance walking and bicycling through the corridor and improve multimodal connectivity.



The Central Florida Regional Transportation Authority, also known as LYNX, provides bus transit for three counties in the region, Osceola, Orange, and Seminole. There is no LYNX bus service along SR 414. However, bus service is available within the study area along SR 434 and US 441. The LYNX service east of the study area provides a connection to SunRail. Should LYNX consider future service in the area, the improved pedestrian and bicycle facilities will enhance access to bus stops and improve multimodal connections to transit options such as SunRail.

### **1.3 Report Purpose**

This Natural Resources Evaluation documents the potential involvement of protected species, habitat and wetlands in support of the PD&E Study process.



## 2.0 ALTERNATIVES ANALYSIS

### 2.1 Alternatives Considered

Alternatives were evaluated for environmental and operational constraints. An at-grade alternative within the median of SR 414 was eliminated because while it provided uninterrupted travel along SR 414, traffic from the local cross streets would not be able to cross Maitland Boulevard. Another alternative considered included an adjacent corridor to SR 414. However, because Maitland Boulevard is mostly developed, this alternative was not viable. Finally, an alternative that included individual overpasses at each of the existing intersections was also considered. However, due to the limited spacing between each intersection, this alternative was not feasible and therefore eliminated.

Viable alternatives were developed and presented for public input at the Public Alternatives Workshop held on February 10, 2021. These viable alternatives included roadway concepts for the SR 414 Expressway Extension project, including the SR 414 toll lanes and the Maitland Boulevard local access lanes. The viable alternatives were updated after the Public Alternatives Workshop to reflect ongoing alternatives refinements that avoid and minimize environmental impacts.

#### 2.1.1 Viable Alternatives

The evaluation of typical section options is documented in the SR 414 Expressway Extension *Final Typical Section Technical Memorandum (date pending)*. All typical section options require widening within the ROW and, therefore, a variety of elevated expressway alternatives were developed. Initially, two typical section options for the at-grade Maitland Boulevard and four typical section options for the elevated SR 414 Expressway Extension were qualitatively evaluated. The alignment analysis was evaluated based on the maximum viable typical section footprint of 118 feet wide. The alignment is constrained by the ROW and median width needed for pier placement of the proposed elevated structure. To maximize the use of the existing typical section of 118 feet, the proposed alignment for both the at-grade and elevated facilities is along the centerline of the existing ROW. The piers for the elevated SR 414 bridge are proposed within the median of the at-grade Maitland Boulevard facility. Based on the design criteria, the design and posted speed was reduced from 55 miles per hour to 45 mph along the at-grade Maitland Boulevard facility.

Based on the initial analyses, the viable typical section for the at-grade Maitland Boulevard maintains the pavement footprint of the four-lane facility but shifts and restripes the lanes to provide a 7-foot-wide buffered bike and proposed Type F curb and gutter in the median. The viable typical section options for the elevated SR 414 Expressway Extension include Options 4 and 6 as detailed in the following text. The *Final Typical Section Technical Memorandum* provides descriptions of each typical section option.

- Elevated Typical Section Option 4: provides four 12-foot-wide express lanes (two per direction) separated by a median barrier wall.
- Elevated Typical Section Option 6: provides three 12-foot-wide express lanes separated by a movable barrier wall. In morning peak traffic, there are two lanes eastbound and one lane westbound. In afternoon peak traffic, there is one lane eastbound and two lanes westbound. The movable barrier would be shifted approximately 12 feet via a specialty vehicle twice daily. This option is both reversible and convertible and requires advance signing, access equipment, specialty barrier and specialty vehicle with onsite or nearby storage.



The Elevated Typical Section Option 4 construction costs are higher, but are offset by the significant capital and operating costs for Option 6. Additionally, higher capacity is provided by Option 4 and provides safer incident management. Therefore, the recommended option for the elevated SR 414 Expressway Extension is Option 4. The proposed posted and design speed is 50 mph.

### 2.1.2 Preferred Alternative

As a result of the alternatives analyses conducted for the project, a Preferred Alternative was identified for further analysis and public input. The Preferred Alternative involves an elevated SR 414 Expressway Extension toll facility to serve regional traffic and at-grade Maitland Boulevard local access lanes (non-tolled) from US 441 to SR 434. The proposed SR 414 Expressway Extension typical section for the Preferred Alternative includes the elevated SR 414 facility in the median, as four 12-foot-wide express lanes (two lanes per direction) separated by a median barrier wall. The Preferred Alternative also includes maintaining the existing Maitland Boulevard access lanes at-grade with two lanes per direction on either side and below the SR 414 Expressway Extension. The at-grade portion of the facility on Maitland Boulevard will maintain the existing pavement width (60 feet) but shifts and restripes the existing lanes to provide a 7-foot-wide buffered bike lane east of Bear Lake Road. Using these recommendations to minimize ROW and ongoing traffic analysis, the Preferred Alternative will be further evaluated as the study progresses. As part of the Preferred Alternative, operational improvements at intersections are anticipated to accommodate the elevated SR 414 Expressway Extension while maintaining local access at cross streets. In addition, impacts to environmental resources including social, cultural, natural and physical will be considered as the Preferred Alternative is further developed.

### 2.1.3 No-Build Alternative

The No-Build Alternative for the study area assumes previously programmed improvements are built including widening SR 414 to six lanes (at-grade with no elevated expressway) from US 441 to SR 434 as noted in MetroPlan Orlando's 2045 Metropolitan Transportation Plan Cost Feasible Plan, Adopted December 9, 2020. The No-Build Alternative is not funded in the FDOT 5-Year Work Program, adopted July 2020 and is no longer programmed. Consistency with local transportation plans to update this change will be coordinated during the PD&E Study. The previously programmed improvements to SR 414 do not meet the future traffic needs through the year 2045 nor the purpose and need for the project to accommodate future transportation demand or improve system connectivity. An at-grade widening of SR 414 to six lanes would result in precluding a four-lane expressway within the median (two lanes per direction) or require substantial ROW impacts. Similarly, at-grade widening of SR 414 to six lanes and a two-lane expressway within the median (one lane per direction) would result in ROW impacts and impact the ability to maximize the use of the existing median to accommodate infrastructure (such as utilities and drainage needs). Therefore, the No-Build Alternative is not the Preferred Alternative. However, the No-Build Alternative shall remain under consideration throughout the PD&E Study for public input and to provide a comparison to the Preferred Alternative.



## 3.0 EXISTING ENVIRONMENTAL CONDITIONS

### 3.1 Soils

For the purposes of this NRE, the project study area consists of the footprint of the Preferred Alternative and a 250-foot-wide buffer of those limits. According to the *Natural Resources Conservation Service Soil Survey of Orange and Seminole Counties*, the three most prevalent soils in the project study area are Tavares Fine Sand, 0 to 5 Percent Slopes (Mapping Unit Identifier 46), Candler-Apopka Fine Sands, 5 to 12 Percent Slopes (MUID 6), and Tavares-Millhopper Complex, 0 to 5 Percent Slopes; all three are classified as non-hydric. All soils documented within the project study area and their approximate acreages are in **Table 3-1**. Project study area soil types are described in more detail and depicted in **Appendix A**.



**Table 3-1**  
**Existing NRCS Soil Types within Project Study Area**

<b>MUID</b>	<b>Soil Type</b>	<b>Hydric Status</b>	<b>Acres</b>
1	ARENTS, NEARLY LEVEL	Non-hydric	1
2	ADAMSVILLE-SPARR FINE SANDS	Non-hydric	3
3	BASINGER FINE SAND, FREQUENTLY PONDED, 0 TO 1 PERCENT SLOPES	Hydric	5
4	CANDLER FINE SAND, 0 TO 5 PERCENT SLOPES	Non-hydric	8
6	CANDLER-APOPKA FINE SANDS, 5 TO 12 PERCENT SLOPES	Non-hydric	40
7	ASTATULA-APOPKA FINE SANDS, 5 TO 8 PERCENT	Non-hydric	3
10	BASINGER, SAMSULA, AND HONTOON SOILS, DEPRESSIONAL	Hydric	20
11	BASINGER AND SMYRNA FINE SANDS, DEPRESSIONAL	Hydric	1
16	IMMOKALEE SAND, 0 TO 2 PERCENT SLOPES	Non-hydric	18
20	IMMOKALEE FINE SAND	Non-hydric	8
30	SEFFNER FINE SAND, 0 TO 2 PERCENT SLOPES	Non-hydric	1
31	TAVARES-MILLHOPPER COMPLEX, 0 TO 5 PERCENT SLOPES	Non-hydric	40
37	ST. JOHNS FINE SAND	Non-hydric	1
41	SAMSULA-HONTOON-BASINGER ASSOCIATION, DEPRESSIONAL	Hydric	15
42	SANIBEL MUCK	Hydric	5
43	SEFFNER FINE SAND, 0 TO 2 PERCENT SLOPES	Non-hydric	20
46	TAVARES FINE SAND, 0 TO 5 PERCENT SLOPES	Non-hydric	67
47	TAVARES-MILLHOPPER COMPLEX, 0 TO 5 PERCENT SLOPES	Non-hydric	28
48	TAVARES-URBAN LAND COMPLEX, 0 TO 5 PERCENT SLOPES	Non-hydric	16
50	URBAN LAND	Unranked	9
99	WATER	Unranked	4
<b>Total</b>			<b>313</b>



### 3.2 Land Use and Cover Types

Land uses and cover types along SR 414 and adjacent to the study area consist of a diverse mixture of developed properties, natural and altered uplands, wetlands and surface water. During site visits conducted on May 7 and November 11, 2020, these areas were assessed, with a focus on the natural vegetative communities for potential use by federal- and state-listed wildlife.

The *St. Johns River Water Management District Florida Land Use Cover Forms and Classification System* (2014) along with field verification was used to classify the various land uses and land covers within the study area. A project-specific FLUCCS map was prepared and is provided in **Appendix B. Table 3-2** provides a summary of the land use/land cover types.

Developed areas include Residential (FLUCCS 1100, 1200, 1300), Commercial (FLUCCS 1400, 1490), Light Industrial (FLUCCS 1550), Institutional (FLUCCS 1700), Parks and Zoos (FLUCCS 1850), Disturbed Lands (FLUCCS 7400), Roads (FLUCCS 8140) and Electrical Power (FLUCCS 8320). Undeveloped upland areas (vegetated) include Herbaceous Upland Non-forested (FLUCCS 3100), Upland Coniferous Forests (FLUCCS 4100), Pine Mesic Oak (FLUCCS 4140), Upland Hardwood Forests (FLUCCS 4200) and Upland Mixed Coniferous/Hardwood (FLUCCS 4340).

Wetlands and surface waters include Streams and Waterways (FLUCCS 5100), Lakes (FLUCCS 5200), Reservoirs (FLUCCS 5300), Wetland Forested Mix (FLUCCS 6300), Freshwater Marshes (FLUCCS 6410), Emergent Aquatic Vegetation (FLUCCS 6440), Mixed Scrub-Shrub Wetland (FLUCCS 6460) and Surface Water Collection Basins (FLUCCS 8370).

The major land use/land cover classifications within the study area, in order of frequency, include Transportation (FLUCCS 8140), Medium Density Residential 2-5 Units/Acre (FLUCCS 1200), Residential, High Density 6 Units/Acre (FLUCCS 1300), and Commercial & Services (FLUCCS 1400). These categories account for approximately 59% of the land use/land cover within the study area. There are natural wetlands and roadside ditches (which qualify as surface waters) within the study limits. **Appendix C** contains representative habitat photos.



**Table 3-2**  
**Existing Land Use/Land Cover (FLUCCS) within Study Area**

FLUCFCS Code	FLUCFCS Description		Acres
1000: URBAN AND BUILT UP	1100	RESIDENTIAL, LOW DENSITY - LESS THAN 2 DWELLING UNITS/ACRE	6.0
	1200	MEDIUM DENSITY RESIDENTIAL - 2-5 UNITS/ACRE	44.0
	1300	RESIDENTIAL, HIGH DENSITY - = 6 UNITS/ACRE	25.0
	1400	COMMERCIAL AND SERVICES	24.0
	1490	COMMERCIAL & SERVICES UNDER CONSTRUCTION	7.0
	1550	OTHER LIGHT INDUSTRIAL	17.0
	1700	INSTITUTIONAL	1.0
	1850	PARKS AND ZOOS	8.0
	Total		132.0
3000: UPLAND NONFORESTED	3100	HERBACEOUS UPLAND (NON-FORESTED)	10.0
4000: UPLAND FOREST	4100	UPLAND CONIFEROUS FORESTS	1.0
	4140	PINE MESIC OAK	0.5
	4200	UPLAND HARDWOOD	16.0
	4340	UPLAND MIXED CONIFEROUS/HARDWOOD	9.0
	Total		26.5
5000: WATER	5100	STREAMS AND WATERWAYS	0.5
	5200	LAKES	1.0
	5300	RESERVOIRS - PITS, PONDS, DAMMED SYSTEMS	9.0
	Total		10.5
6000: WETLANDS	6300	MIXED FORESTED WETLAND	14.0
	6410	FRESHWATER MARSH	0.5
	6440	EMERGENT AQUATIC VEGETATION	1.0
	6460	MIXED SCRUB-SHRUB WETLAND	4.0
	Total		19.5
7000: BARREN LAND			
	7400	DISTURBED LAND	0.5
8000: TRANSPORTATION, COMMUNICATION & UTILITIES	8140	ROADS (=4 LANE DIVIDED WITH MEDIANS)	95.0
	8320	ELECTRICAL POWER TRANSMISSION LINES	2.0
	8370	SURFACE WATER COLLECTION BASINS	16.0
	Total		113.0
Total			312

### 3.2.1 Drainage and Hydrology

The project is located within the Little Wekiva River Watershed, which is within the jurisdiction of the SJRWMD. The study area contains several surface water bodies and lakes, such as Lake Bosse and the Little Wekiva Canal. The Little Wekiva Canal is an artificial canal system that flows primarily in a northerly



direction into the Little Wekiva River, which is outside of the study area north of the Little Wekiva Canal (north of Lake Lotus). The existing SR 414 roadway is located within both open and closed basins, and stormwater runoff is treated in multiple permitted stormwater treatment ponds. Portions of the stormwater discharge to Lake Bosse and the Little Wekiva Canal, and the remainder discharges to existing wetlands.

The majority of the study area is located within the Little Wekiva Canal Basin, which the Florida Department of Environmental Protection identifies as Water Body Identification Number 3004. The Little Wekiva Canal Basin is impaired for coliforms, biological oxygen demand, and dissolved oxygen. There is an adopted FDEP Basin Management Action Plan for the Little Wekiva River Basin for reducing nitrates, total phosphorus and dissolved oxygen. Further, the study area falls within Wekiva Spring and Rock Springs, both of which are classified as Outstanding Florida Springs per 62-41.402 FAC. The Wekiva Spring and Rock Springs have a pending BMAP for the reduction of nitrates and total phosphorus. Because of the BMAPs, application of additional treatment volume and anti-degradation standards may be required. The study area is also located within the Wekiva River Hydrologic Basin and Wekiva Recharge Protection Basin and is subject to special treatment requirements. During the PD&E Study, pond siting will be evaluated and documented in a Pond Siting Report for the viable alternatives. An Environmental Look Around will take place during the study to find opportunities for joint-use pond opportunities. Potential nearby regional treatment facilities includes the Little Wekiva River - Lake Lotus Park Regional Stormwater Treatment Facility, which is currently in design by the Orange County Environmental Protection Division.

The study corridor has two existing bridge crossings located at Lake Bosse, FDOT Bridge No. 770075 (MP 37.5) and the Little Wekiva Canal, FDOT Bridge No. 770074 (MP 37.8). Drainage along the existing SR 414 is characterized by a series of roadside ditches and closed storm sewer collection system with curb and gutter to convey runoff to existing CFX and FDOT ponds. The Pond Siting Report will document the specific details of these ponds and determine what modifications may be needed for the proposed improvements as well as any new ponds or joint-use pond opportunities.

### **3.2.2 Floodplains and Regulatory Floodways**

The Federal Emergency Management Agency's Flood Insurance Rate Maps for Seminole County, Community Panel Numbers 12117C0145F and 12117C0140F (September 28, 2007), and Orange County Community Panel Numbers 12095C0140F and 12095C0145F (September 25, 2009), indicate that a portion of the SR 414 roadway lies within the 100-year floodplain areas Zone AE and Zone A. The Zone AE base flood elevation ranges from 63 to 65 feet and is located in the vicinities of Lake Bosse and Little Wekiva Canal. Zone A is located in the vicinity of the SR 414 and US 441 interchange and has no base elevation but includes a 1 percent chance of flooding. Most of the study area lies in floodplain area Zone X, which is an area of minimal flood hazard.

## **3.3 Significant Waters and Protection Areas**

There are no significant waters within or adjacent to the study area. No Outstanding Florida Waters per 62-302 FAC or essential fish habitat occur within or adjacent to the study area. A segment of the Little Wekiva River is listed as a State of Florida Outstanding Florida Water (OFW), however, the OFW segment of the Little Wekiva River is the last four miles that flows through the Wekiva River Aquatic Preserve, which is well outside of the project study area. Additionally, there are no rivers designated as Wild and



Scenic Rivers as defined in Part 2, Chapter 12 of the PD&E manual. The Florida Ecological Greenways Network has not identified the project area on its priority assessment list.

The Little Wekiva River downstream of Maitland Boulevard is within a SJRWMD Riparian Habitat Protection Zone associated with the Wekiva River Hydrologic Basin. The RHPZ is established to conserve biodiversity in the Wekiva ecosystem and restricts development activities that degrade ecosystem functions, including land clearing, construction of dwellings and other buildings, and alteration of surface water flows. Per 40C-41.063(3)(e)1. a. Florida Statutes, an applicant must provide reasonable assurance that the construction or alteration of a system will not adversely affect the abundance, food sources, or habitat (including its use to satisfy nesting, breeding and resting needs) of aquatic or wetland dependent species provided by an RHPZ. Per the statute, within the study area, uplands which are within 50 feet landward of the landward extent of the wetlands are to be considered under reasonable assurances that the project will not adversely affect the RHPZ. Additionally, per the SJRWMD, construction of roads within the RHPZ are presumed to adversely affect the abundance, food sources, or habitat of aquatic or wetland dependent species. Future coordination with the SJRWMD will be required to address potential impacts of approximately 0.3 acres to the RHPZ during design and permitting phases of the Preferred Alternative.

Lake Lotus Park is located within the study area and is a nature preserve owned and operated by the city of Altamonte Springs. The park is located adjacent to SR 414 to the north. The preserve encompasses approximately 150 acres including 120 acres of woods and wetlands. Lake Lotus Park includes picnic areas, an enclosed pavilion, an education center and a 1-mile-long trail. Weekday parking is available inside the park. However, tram service is available from the offsite parking area on the south side of SR 414 on Magnolia Homes Road on weekends and during special events. FDOT owns the offsite parking area for the park, but it is leased by the city of Altamonte Springs.

Riverside Acres Park is just south of the study area along the Little Wekiva Canal. Operated by Orange County Parks and Recreation, the park encompasses 8.1 acres and includes a playground, trails, picnic tables and fishing. Parks and conservation lands are depicted in **Appendix D**.



## 4.0 PROTECTED SPECIES AND HABITAT

This project was evaluated for impacts to wildlife and habitat resources, including protected species, in accordance with 50 Code of Federal Regulations Part 402 of the Endangered Species Act of 1973, as amended, the Florida Endangered and Threatened Species Act, Section 379.2291, Florida Statutes, and Part 2, Chapter 16 of the 2019 FDOT PD&E Manual titled Protected Species and Habitat. The project area does not fall within U.S. Fish and Wildlife Service designated critical habitat for any species. The project area occurs entirely within the USFWS consultation areas of the Florida scrub-jay (*Aphelocoma coerulescens*), Everglade snail kite (*Rostrhamus sociabilis*), and partially within the consultation area of the sand skink (*Neoseps reynoldsi*); however, suitable habitat for these species does not occur within the study area. The project is within the 15-mile Core Foraging Area of Lawne Lake, and Eagle Nest Park wood stork rookeries. Impacts to wood stork suitable foraging habitat, including swales, ditches and pond edges within the Preferred Alternative will be evaluated and, if required, replaced in-kind or mitigated in conjunction with wetland habitats. Other federally listed species with reasonable potential to occur in the study area include the eastern indigo snake (*Drymarchon corais couperi*) and wood stork (*Mycteria americana*).

### 4.1 Agency Coordination

A portion of this project (Bear Lake Road to Orange/Seminole County line) was evaluated through the FDOT's Efficient Transportation Decision Making process (ETDM Project No. 14361). The purpose of the ETDM tool is to incorporate environmental considerations into transportation planning to inform project delivery. An ETDM Planning Screen Summary Report was published on September 6, 2018 and contains comments from the Environmental Technical Advisory Team on the project's effects on various natural, physical, and social resources. The ETDM published proposed project limits and alternatives did differ from the current Study Area and Preferred Alternative.

The Florida Fish and Wildlife Conservation Commission, USFWS, and Florida Department of Agriculture and Consumer Services were commenting agencies for Wildlife and Habitat regarding ETDM Project No. 14361. Wildlife and Habitat was assigned a degree of effect of 2 – Minimal by the USFWS and FWC. FDACS assigned it a degree effect of 0 – None. Specific concerns regarding impacts to suitable foraging habitat (SFH) for the federally threatened wood stork and Florida scrub-jay were raised by the USFWS.

An Advanced Notification for the SR 414 Expressway Extension PD&E Study was submitted for agency review and comment on April 27, 2020. Comments were received from NOAA and EPA regarding wetland concerns, which will be addressed below in **Section 5**. No substantial wildlife comments were received through the Advanced Notification coordination process.

### 4.2 Methodology

Literature reviews, agency database searches, and field reviews of potential habitat areas were conducted to identify state and federally protected species occurring or potentially occurring within the project study area. The Orange County and Seminole County Soil Surveys, recent aerial imagery (2018), and SJRWMD land use/land cover mapping were reviewed to determine habitat types occurring within and adjacent to the project corridor. As discussed in **Section 3.0**, land use/land cover mapping was updated to reflect the current field conditions.



Information sources and databases reviewed for the project include the following:

- USFWS databases;
- Florida Natural Areas Inventory protected plant and animal species lists (1999);
- Orange County and Seminole County soil surveys (current);
- Audubon Florida EagleWatch Nest Map locator (2019-2020 nesting season);
- FWC – Bald Eagle (*Haliaeetus leucocephalus*) Nest Locator for Orange County (2016-2017 nesting season data);
- FWC – Waterbird colony locator (2015);
- USFWS – CH for threatened and endangered species;
- USFWS – Central Florida wood stork CFAs (15-mile radius) (2019);
- Species specific: Sand skink: USFWS 2020 & UF/FGDL 2020, Scrub-jay: USFWS 2013 & FWC 1993, Wood stork: USFWS wood stork CFAs 2019, RCW: FWC 2005, Snail Kite: USFWS 2019; and
- FDOT’s ETDM Summary Report 2018 (ETDM Project No. 14361).

**Appendix E** depicts field observations as well as historic species occurrences from database searches. Based on the results of database searches, preliminary field reviews, and review of aerial photographs and soil surveys, field survey methods for specific habitat types and tables of potentially occurring protected fauna and flora were developed.

Field reviews consisted of vehicular and pedestrian surveys through natural areas and altered habitats with the potential to support protected species. In the absence of physical evidence of a protected species, evaluation of the appropriate habitat along with regional occurrence data was conducted to determine the likelihood of a species being present.

Project scientists conducted general surveys on May 7 and November 10, 2020. Using vehicular and pedestrian survey methods during daylight hours, appropriate habitat within the study area was visually scanned for evidence of listed species as well as general wildlife. All occurrences of wildlife in the study area were recorded and observation locations were depicted on project aerials. Special attention was given to identifying signs of listed species.

To further summarize the results of desktop and field data collection efforts, each potential occurring species was assigned a likelihood for occurrence of “none”, “low”, “medium”, or “high” within habitats found on the project corridor and an indicator of suitable habitat proximity to the project area of “distant”, “near”, or “contiguous”. Definitions of probability of species presence/habitat proximity are provided below.

### **Likelihood of Species Presence**

**None** – Species has been documented in Orange County, but due to absence of suitable habitat, could not be naturally present within the project corridor.

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



**Medium** - Species with a moderate likelihood for occurrence are those species known to occur in Orange or nearby counties, and for which suitable habitat is well represented in the project area, but no observations or positive indications exist to verify presence.

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

### 4.3 Results

**Table 4-1** lists the federally and state-protected wildlife species known to occur within Orange and Seminole County that could potentially occur near the project area based on availability of suitable habitat and known ranges. The project is situated within a developed, suburban corridor. Land use mapping from the SJRWMD and field reconnaissance indicates predominantly residential uses surrounding the proposed project. Wildlife habitat, with potential to support protected wildlife species, occurs within the study area, including wetland and upland habitat comprising a RHPZ surrounding Little Wekiva River, downstream of Maitland Boulevard. Potential RHPZ impacts will be evaluated for the Preferred Alternative and will require mitigation and SJRWMD permitting if impacts occur. The highest quality wildlife habitat within the study area is associated with Lake Lotus Park which contains forested wetlands, marshes, and upland forested systems.



## SECTION 4 – PROTECTED SPECIES AND HABITAT

**Table 4-1**  
**Potentially Occurring and Observed Listed Wildlife Species**

Species	Common Name	FWC	USFWS	Habitat	Habitat Occurrence in Relation to Project Footprint	Probability of Species Presence or Occurrence
<b>REPTILES</b>						
<i>Drymarchon corais couperi</i>	Eastern indigo snake	FT	T	Hydric hammock, palustrine, sandhill scrub, upland pine forest, mangrove swamp	Contiguous	Low
<i>Gopherus polyphemus</i>	Gopher tortoise	T	C	Old field, sandhill, scrub, xeric hammock, ruderal, dry prairie, pine flatwood	Contiguous	Low
<i>Lampropeltis extenuate</i>	Short-tailed snake	T	-	Open, sandy soils which are well drained	Distant	Low
<i>Neoseps reynoldsi</i>	Sand skink	FT	T	Oak-dominated scrub, high pine, xeric hammocks	Distant	Low
<i>Pituophis melanoleucus mugitus</i>	Florida pine snake	T	-	Well-drained, sandy open area or longleaf pine forests, sandhills	Distant	Low
<b>BIRDS</b>						
<i>Antigone canadensis pratensis</i>	Florida sandhill crane	T	-	Basin marsh, depression marsh, dry prairies, marl prairie, pastures, human-altered suburban landscapes	Contiguous	High
<i>Aphelocoma coerulescens</i>	Florida scrub-jay	FT	T	Relict dune ecosystems or scrub on well drained to excessively well drained sandy soils	Distant	Low
<i>Athene cunicularia floridana</i>	Florida burrowing owl	T	-	Native prairies and cleared areas with short groundcover	Contiguous	Low
<i>Egretta caerulea</i>	Little blue heron	T	-	Estuarine, lacustrine, riverine, tidal marsh, tidal swamp	Contiguous	High
<i>Falco sparverius paulus</i>	Southeastern American kestrel	T	-	Sandhill, mesic flatwoods, ruderal, dry prairie	Contiguous	Medium
<i>Haliaeetus leucocephalus</i>	Bald eagle	-	*	Forests, estuarine, lacustrine, riverine, tidal marsh, tidal swamp	Contiguous	Medium



## SECTION 4 – PROTECTED SPECIES AND HABITAT

Species	Common Name	FWC	USFWS	Habitat	Habitat Occurrence in Relation to Project Footprint	Probability of Species Presence or Occurrence
<i>Mycteria americana</i>	Wood stork	FT	T	Estuarine tidal swamps/marshes, lacustrine, seepage stream, ditches, ruderal	Contiguous	High
<i>Dryobates borealis</i>	Red-cockaded woodpecker	FE	E	Mature pine forests containing living longleaf pine trees	Distant	None
<i>Platalea ajaja</i>	Roseate spoonbill	T	-	Estuarine, lacustrine, riverine, tidal marsh, tidal swamp	Contiguous	High
<i>Rostrhamus sociabilis plumbeus</i>	Everglade snail kite	FE	E	Lowland freshwater marshes and littoral shelves of lakes	Distant	Low
<b>MAMMALS</b>						
<i>Ursus americanus floridanus</i>	Florida black bear	***	-	Forests and forested wetlands, bayheads	Near	High
-	Bats (multiple species)	****	-	Forested areas, manmade structures	Near	Medium

### Sources:

- (1) USFWS - U.S. Fish and Wildlife Service status, Official lists of Threatened and Endangered species, 50 CFR 17.11
- (2) Florida Fish and Wildlife Conservation Commission. 2016. Florida's Imperiled Species Management Plan. Tallahassee, Florida
- (3) FWC - Florida's Endangered and Threatened Species, Updated December 2018.
- (4) USFWS ECOS - Environmental Conservation Online System [http://ecos.fws.gov/tess\\_public/reports/species-by-current-range-county?fips=12105](http://ecos.fws.gov/tess_public/reports/species-by-current-range-county?fips=12105) accessed August, 2019
- (5) FNAI - Florida Natural Areas Inventory Tracking List <http://www.fnai.org/bioticssearch.cfm> accessed August, 2019

### Notes:

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

\*The Bald Eagle is afforded federal protection through the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA)

\*\*\*The Florida black bear is no longer listed as threatened, however is protected under the FAC 68A-4.009 Florida Black Bear Conservation

\*\*\*\*Bats are protected by FAC 68A-4.001 General Prohibitions and 68A-9.010 Taking Nuisance Wildlife

### Key:

E - endangered, T - threatened, C - candidate for listing, FE - federally endangered, FT - federally threatened



### 4.3.1 Wildlife

#### 4.3.1.1 Federally Protected Wildlife

##### **Eastern Indigo Snake (*Drymarchon corais couperi*)**

The eastern indigo snake is designated as threatened by the USFWS. This species may inhabit a variety of natural areas including forested uplands and wetlands as well as wet and dry prairies. There is minimal suitable habitat within and adjacent to the Preferred Alternative footprint due to highly developed residential areas. There is also a lack of documented sightings in the area. Per the USFWS North Florida Field Office's 2013 *Update Addendum to USFWS Concurrence Letter to U.S. Army Corps of Engineers Regarding Use of the Eastern Indigo Snake Programmatic Effect Determination Key*, for projects that have suitable habitat; potential snake refugia; impact less than 25 acres of xeric habitat supporting less than 25 active/inactive gopher tortoise burrows; and will be conditioned for use of the Service's *Standard Protection Measures For the Eastern Indigo Snake* during site preparation and project construction, it can be concluded that the project may affect, is not likely to adversely affect this species. CFX will adhere to the most recent version of the USFWS Standard Protection Measures for the Eastern Indigo Snake (**Appendix F**).

##### **Sand Skink (*Neoseps reynoldsi*)**

The sand skink is designated as threatened by the USFWS, and the western portion of the project area falls within the CA for the species. Habitat requirements for the sand skink are highly specific and limited to scrubby, xeric areas on the high ridges of central Florida. Ideal habitat has soil that is sandy, well drained, and fairly loose with open sand areas abutting scrub vegetation. Per the USFWS' recently revised *Peninsular Florida Species Conservation Guide Sand Skink and Blue-tailed (Bluetail) Mole Skink* (July, 2020), the three most important factors in determining the likelihood of presence of skinks are location, elevation, and suitable soils. USFWS survey protocol indicates consultation and surveys for sand skinks are required for projects in several counties including Orange County, where elevations are 82 feet above sea level or higher, and suitable soil types are present. These soil types include Apopka, Arredondo, Archbold, Astatula, Basinger, Candler, Daytona, Duette, Florahome, Gainesville, Hague, Immokalee, Kendrick, Lake, Milhopper, Orsino, Paola, Placid, Pomello, Pompano, Samsula, Satellite, Smyrna, St. Lucie, Tavares, Urban land (when open sandy soils persist and remnant scrub remains), Zolfo, and Zuber. All three criteria must be met to warrant surveys. The western half of the study area contains areas meeting survey criteria for sand skink. However, soils in this area are significantly disturbed from construction of the original SR 414 and nearby commercial developments; additionally, no suitable habitat exists within this area of the Preferred Alternative. Therefore, the project is expected to have no effect on the sand skink.

##### **Florida Scrub-Jay (*Aphelocoma coerulescens*)**

The Florida scrub-jay is designated as threatened by the USFWS and the project falls within the CA for the species. According to available Geographic Information Systems data, the nearest Florida scrub-jay observation was documented approximately 4.5 miles to the north of the study area and was recorded by the FWC in its 1992-1993 dataset. There are no more recent documented observations.

Optimal scrub-jay habitat occurs on scrub ridges with well drained to excessively well drained soils that have scrubby oaks three to nine feet in height, interspersed with 10 to 50 percent unvegetated sandy



openings, and a sand pine (*Pinus clausa*) canopy of less than 20 percent. The species has been documented in suboptimal habitats such as those fragmented by residential developments. The project footprint does not contain optimal or suboptimal habitat for the Florida scrub-jay. No Florida scrub-jays were observed during field surveys. Given the distance and age of the nearest observation, and that habitat for the Florida scrub-jay is not available within the project limits, the project is expected to have no effect on the Florida scrub-jay.

### **Wood Stork (*Mycteria americana*)**

The wood stork is listed as threatened by the USFWS. Wood storks are known to use freshwater marshes, swamps, lagoons, ponds, flooded fields, depressions in marshes and brackish wetlands, open pine-cypress wetlands, and manmade wetlands (i.e., ditches, canals, and stormwater retention ponds). Wood storks are typically colonial nesters and construct their nests in medium to tall trees located within wetlands or on islands. Wood storks are known to forage within a large area, up to 40 miles, from the colony.

For central Florida, the USFWS has defined the CFA for a wood stork colony as the area within a 15-mile radius from the colony location. The project is within the 15-mile CFA of two wood stork rookeries, Lawne Lake and Eagle Nest Park. As defined by the USFWS, wood stork SFH includes wetlands and surface waters that have areas of water that are relatively calm, uncluttered by dense thickets of aquatic vegetation, and have permanent or seasonal water depth between two and 15 inches. Impacts to wood stork SFH, including swales, ditches, and pond edges within the ROW will be evaluated and replaced in-kind or mitigated in conjunction with wetland habitats during design and permitting.

Wood storks are likely to use the project area for foraging purposes given the overlapping CFAs of these colonies and the foraging habitat that exists within wetlands and surface waters in and outside of the project area. According to the USFWS database, the nearest wood stork colony (Lawne Lake) is located approximately 4.9 miles south of the project footprint (well beyond the 0.47-mile threshold for a “may affect” determination).

The Preferred Alternative will result in impacts to approximately 0.07 acre of surface waters classified as Streams and Waterways (FLUCCS 5100). Because these minor impacts occur within a surface water canal that has steep banks, no impacts to the wood stork are anticipated since the steep banks are considered to hinder wood stork access for foraging.

Other surface waters fall into Reservoirs (FLUCCS 5300) which are man-made, open water ponds with mowed edges and Surface Water Collection Basins (FLUCCS 8370). The littoral edges of these FLUCCS classifications are also considered SFH. However, based on planned replacement of in-kind stormwater systems, impacts to SFH associated with these FLUCCS classifications will not result in any permanent net loss of wood stork SFH.

No wood storks are known to have nested within the study area and the project will result in minor impacts to SFH that will be mitigated, if required, through replacement of stormwater management systems and/or purchase of appropriate wetland mitigation bank credits to satisfy all mitigation requirements of Part IV, Chapter 373 F.S., and 33 U.S.C. 1344.

Therefore, per the USFWS North Florida Field Office’s 2008 *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*, for projects located more



than 2,500 feet from a colony site that impact less than or equal to 0.5 acre of SFH, it can be concluded that the project may affect, but is not likely to adversely affect the wood stork.

### **Red-cockaded Woodpecker (*Dryobates borealis*)**

The red-cockaded woodpecker is listed as endangered by the USFWS, and the project area falls within the CA for the species. The nearest observation occurred 14.1 miles to the southeast of the study area; the year of observation is not known, however, it is documented in the 2005 FWC dataset. The red-cockaded woodpecker is extremely habitat specific, with optimal habitat consisting of forests of mature live longleaf pine (*Pinus palustris*) and/or loblolly pine (*Pinus taeda*). Red-cockaded woodpeckers are primary excavators of these trees and their behavioral adaptations require them to excavate cavities in the live wood. Given that suitable forest habitat is absent from the project area and the nearby surroundings, and that there are no historic or current observation records in the project vicinity, the project is anticipated to have no effect on the species.

### **Everglade Snail Kite (*Rostrhamus sociabilis plumbeus*)**

The Everglade snail kite is a subspecies of snail kite that is designated by the USFWS as endangered, and the project area falls within the CA for the species. No evidence of the species was observed during field surveys. The nearest documented observation is 22.0 miles to the south of the study area, recorded as historic data occurring between 1996 and 2006, as recorded in the 1996 to 2019 dataset. Everglade snail kites have diets which are specialized on the Florida apple snail (*Pomacea paludosa*). This prey item inhabits surface waters of central and south Florida like the canals and stormwater ponds present within the project limits. These areas provide suboptimal, loosely vegetated foraging habitat for the species; therefore, the project contains suitable foraging habitat of low quality. Ideal foraging and nesting habitat would consist of large shallow marshes that support the apple snail and these habitats are absent from the project limits. Apple snails were not observed during field surveys. Given that no evidence of the species or prey items were observed, the nearest documented observation is 22.0 miles from the project area, and mitigation will be provided for permanent impacts to wetlands and surface waters, it is expected that the project will have no effect on the Everglade snail kite.

#### **4.3.1.2 State-Protected Wildlife Species**

### **Gopher Tortoise (*Gopherus polyphemus*)**

The gopher tortoise is listed by the FWC as threatened, and is currently a candidate for listing by the USFWS. Gopher tortoise burrows provide habitat for many commensal species. Ideal habitats include xeric areas with sandy soils and open canopy with low groundcover. The gopher tortoise feeds primarily on new shoots of grasses and broad-leaf herbs, but may also consume mushrooms, fleshy fruit, and some animal matter. Appropriate habitat exists for the gopher tortoise, however, no individuals or burrows were observed during preliminary field surveys. A comprehensive, 100 percent gopher tortoise burrow survey will be conducted prior to construction. Per FWC requirements, gopher tortoise burrows located within 25 feet of proposed impact areas will be excavated and tortoises relocated to an approved recipient site. Because no gopher tortoises have been observed, and a 100 percent survey with relocation, if needed, will be conducted prior to construction per the most current FWC Gopher Tortoise Permitting Guidelines, the project has no adverse effect anticipated on the gopher tortoise.

### **Short-tailed Snake (*Lampropeltis extenuate*)**



The short-tailed snake is listed by the FWC as threatened. Ideal habitat for the species consists of open, sandy soils which are well drained. Canopy cover should be moderate to open longleaf pine and xeric oak sandhills. The short-tailed snake is fossorial which makes observations difficult. They are only found from the Suwannee River south to Highlands County. There is limited suboptimal habitat within the study area. Given the minimal amount of suboptimal habitat, there is no effect anticipated on the short-tailed pine snake.

### **Florida Pine Snake (*Pituophis melanoleucus mugitus*)**

The Florida pine snake is listed by the FWC as threatened. Ideal habitat for the species consists of open, sandy soils which are well drained. Canopy cover should be moderate to open and longleaf pine or other softwoods are ideal. The Florida pine snake is also considered a gopher tortoise commensal species. The nearest documented Florida pine snake observations include one located approximately 13.7 miles to northeast in 1936, and more recently, approximately 21.6 miles to the southwest in 1990. There is limited suboptimal habitat within the project footprint and surrounding area. Given the minimal amount of suboptimal habitat and absence of gopher tortoise burrows, and date of the last observation, there is no effect anticipated on the Florida pine snake.

### **Florida Sandhill Crane (*Antigone canadensis pratensis*)**

The Florida sandhill crane is listed as threatened by the FWC. Nesting habitat consists of shallow, vegetated freshwater marshes. Cranes will construct nests on fairly isolated rafts of vegetation to limit access by predators. The Florida sandhill crane forages on insects, small vertebrates, and plant matter in prairies, pastures, and also maintained roadside edges. Wetlands 2 and 3 provide minimal nesting habitat; however, they are located adjacent to the existing SR 414 without any buffer to the roadway. It is unlikely that Florida sandhill cranes will nest in the study area wetlands. Due to the extremely minor nature of the proposed surface water impacts, it is highly unlikely Florida sandhill cranes will nests in the wetlands within the study area. Therefore, no impacts to potential nesting habitat are proposed. Foraging habitat is present; however, no Florida sandhill cranes were observed during field surveys. Therefore, there is no adverse effect anticipated on the Florida sandhill crane.

### **Florida Burrowing Owl (*Athene cunicularia floridana*)**

The Florida burrowing owl is designated by the FWC as threatened. The nearest recorded observation occurred 9.8 miles to the northwest of the study area in 1989. This small owl creates subterranean burrows in native prairies and cleared pastures. Tracts of cleared right-of-way with low groundcover exist within the project limits. However, no observations of burrowing owls are documented within the project vicinity, no burrows were observed during field reviews, and suboptimal habitat in the project area is fragmented. Therefore, there is no effect anticipated on the Florida burrowing owl.

### **Southeastern American Kestrel (*Falco sparverius paulus*)**

The southeastern American kestrel is listed by the FWC as threatened. This kestrel species inhabits sandhills, mesic flatwoods, and open pastures, nests in cavities of dead trees or utility poles that are not surrounded by tall vegetation, and is commonly observed perched on power lines in rural to suburban areas. Suboptimal but potentially suitable ruderal open areas which may provide foraging habitat for the species occur within the proposed project. Appropriate cavity trees or poles for nesting may also be found within the project footprint; however, no individuals were observed during field surveys. Because the



proposed project will be on structure located above the existing alignment, and there will be minimal impacts to existing habitats, the project will have no adverse effect anticipated on the southeastern American kestrel.

### **Wading Birds**

Wading birds such as the little blue heron (*Egretta caerulea*) and roseate spoonbill (*Platalea ajaja*) are listed by the FWC as threatened and are afforded some levels of federal protection by the Migratory Bird Treaty Act (16 U.S.C. 703-712). Though no state-listed wading birds were observed in the study area during field surveys, it is very likely these species forage within wetlands, stormwater facilities and surface waters within the project area. Nesting habitat for these wading birds would consist of relatively isolated islands of shrubs and trees out of the reach of predators such as raccoons; the project area does not contain ideal nesting habitat.

These are highly mobile species which are not likely nesting within the Preferred Alternative study area. For these reasons, the project has no adverse effect anticipated on state-protected wading birds. Any permanent impacts to wetlands and surface waters would be mitigated for as appropriate.

#### **4.3.1.3 Protected Non-Listed Wildlife Species**

### **Bald Eagle (*Haliaeetus leucocephalus*)**

This species receives federal protection under the MBTA and the Bald and Golden Eagle Protection Act. The FWC records indicate a bald eagle nest (No. OR084) occurs to the south of the project limits on the east side of Lake Bosse. This nest was last surveyed by FWC in 2017 and was documented as an active nest; the Florida Audubon Society last surveyed this nest in 2019 and documented it as occupied. Project scientists observed this nest to be active during field reviews in October 2020. The existing SR 414 ROW is approximately 900 feet from the documented location of this nest. The proposed project is outside of the 330-foot-wide primary and 660-foot-wide secondary protective zones of the nest; therefore, no permitting is expected to be required for this nest. FWC records indicate a historic bald eagle nest (No. OR026) was located along the south side of SR 414 just east of the US 441 and SR 414 interchange. This nest was last recorded as active in 1993 (FWC 2020 records). The area surrounding the historic eagle nest has since been cleared and developed into the Rose Pointe Subdivision. Because the immediate project area does not occur within the 660-foot-wide secondary protective zone of an active bald eagle nest and loss to wetlands will be mitigated, the project will have no effect on the bald eagle.

### **Florida Black Bear (*Ursus americanus floridanus*)**

The Florida black bear is no longer listed as a threatened species by the FWC. Although it was removed from the state list of protected species in August 2012, it is still protected through the FAC 68A-4.009 Florida Black Bear Conservation. The FWC's bear mapping unit indicates several black bear observations have occurred within the immediate vicinity of the project and abundant black bear sightings occur in the study area. One Florida black bear mortality has been documented in 2015, noted as a vehicle collision that killed a juvenile black bear on SR 414, west of the SR 434 and SR 414 intersection. A general wildlife survey of the study area was performed during the NRE field reviews and no signs of Florida black bears were observed within the Preferred Alternative footprint. Because the project impact area is an existing paved roadway to which bears have acclimated, and the Preferred Alternative does not add through lanes, the project has no adverse effect anticipated on the Florida black bear.



### Bats (multiple species)

Bats in the state of Florida are protected via FAC 68A-4.001 General Prohibitions and FAC 68A-9.010 Taking Nuisance Wildlife. There is one species of bat, the Florida bonneted bat (*Eumops floridanus*), which receives additional protection as it is listed as endangered by the USFWS. The project is not within the designated CA for the Florida bonneted bat as documented in the October 2019 USFWS Florida Bonneted Bat Consultation Guidelines. Solitary bats may roost in small tree cavities or palm fronds while larger colonies of bats may roost in manmade structures such as the joints of bridges. The project limits contain structures which could provide roosting habitat for state-protected bats. The existing bridges provide potential roosting habitats as they have crevices and joints which are a suitable size for a colony of bats. Additional field inspection of the project's existing bridges will be accomplished during design and permitting. No evidence of bat inhabitation was observed at the time of field visits for this PD&E study, therefore, there is no effect anticipated on state-protected bats.



### 4.3.2 Protected Plant Species

**Table 4-2** lists the 11 federally protected plant species with the potential to occur within the study area as they have been reported in Seminole and Orange Counties. This list includes Florida bonamia (*Bonamia grandiflora*), pigeon wings (*Clitoria fragrans*), scrub buckwheat (*Eriogonum longifolium* var. *gnaphalifolium*), papery whitlow-wort (*Paronychia chartacea*) which are federally threatened, and pygmy fringe-tree (*Chionanthus pygmaeus*), beautiful pawpaw (*Deeringothamnus pulchellus*), scrub lupine (*Lupinus aridorum*), Britton's bear-grass (*Nolina brittoniana*), sandlace (*Polygonella myriophylla*), scrub plum (*Prunus geniculata*), and wide-leaf (*Warea amplexifolia*) which are federally endangered. The preferred habitats of these plant species are described in **Table 4-2**.

Near the existing roadway, the dominant vegetation is bahia grass (*Paspalum notatum*) which is regularly mowed. The project area is highly urbanized but in some potential offsite pond locations vegetated areas remain. These are typically hardwood and coniferous forests which have been impacted by their proximity to the existing roadway and nuisance exotic species were observed at forest edges. There is no effect on the 11 federally protected plant species, with narrow habitat requirements for sandhills, scrub and scrubby flatwoods, which are absent from the Preferred Alternative area as indicated in **Table 4-2**.



## SECTION 4 – PROTECTED SPECIES AND HABITAT

**Table 4-2**  
**Potentially Occurring Listed Plant Species within the Preferred Alternative**

Species	Common Name	USFWS	FDACS - DPI	Habitat	Habitat Occurrence in Relation to Project Footprint	Probability of Presence	Effect Determination
<i>Bonamia grandiflora</i>	Florida bonamia	T	E	sandy soil, scrub	Distant	None	No effect
<i>Chionanthus pygmaeus</i>	pygmy fringe-tree	E	E	sandhills, scrub	Distant	None	No effect
<i>Clitoria fragrans</i>	pigeon wings	T	E	sandhills, scrub, scrubby flatwoods	Distant	None	No effect
<i>Deeringothamnus pulchellus</i>	beautiful pawpaw	E	E	grassy flatwoods	Distant	None	No effect
<i>Eriogonum longifolium</i> Nutt. var. <i>gnaphalifolium</i> Gand.	scrub buckwheat	T*	E	sandhills, scrub	Distant	None	No effect
<i>Lupinus aridorum</i>	scrub lupine	E	E	sand pine scrub	Distant	None	No effect
<i>Paronychia chartacea</i>	papery whitlow-wort	T	E	scrub	Distant	None	No effect
<i>Polygonella myriophylla</i>	sandlace	E	E	scrub	Distant	None	No effect
<i>Prunus geniculata</i>	scrub plum	E	E	sand pine scrub	Distant	None	No effect
<i>Nolina brittoniana</i>	Britton's beargrass	E	E	scrub	Distant	None	No effect
<i>Warea amplexifolia</i>	clasping warea	E	E	dry pinelands, sandhills	Distant	none	No effect

T = Threatened, E = Endangered

\* listed threatened as *Eriogonum longifolium* var. *gnaphalifolium*



### 4.4 Evaluation of Alternatives

#### 4.4.1 *Direct Impacts*

**Table 4-3** shows the expected direct impacts for the Preferred Alternative and the No-Build Alternative by FLUCCS code. This indicates project impacts to potential wildlife habitat. This analysis was conducted on land uses within the Preferred Alternative footprint with no buffer area, which is unlike the project Study Area which includes a 250-foot buffer of the Preferred Alternative footprint. The impacts for the Preferred Alternative were calculated by summing the FLUCCS categories that could potentially be used by a state or federally listed or otherwise protected species. Note: all acreages are rounded to the nearest 0.5 acre.

##### 4.4.1.1 Preferred Alternative

The impacts for the Preferred Alternative were calculated by FLUCCS categories. Of the FLUCCS categories, natural habitats Upland Non-forested (FLUCCS 3000 series), Upland Forest (FLUCCS 4000 series), Water (FLUCCS 5000 series), and Wetlands (FLUCCS 6000 series) comprise approximately 16 acres of the Preferred Alternative footprint. Other than Reservoirs (FLUCCS 5300), the natural habitat within the Preferred Alternative with the potential for the largest area of impact is Herbaceous Upland Non-forested (FLUCCS 3100); this category is approximately 4 acres. The majority of the project impact will be to Roads and Highways (FLUCCS 8140) and Surface Water Collection Basins (FLUCCS 8370); these land uses are already developed, and comprise the majority of the current project area.

##### 4.4.1.2 No-Build Alternative

There are no direct impacts to wildlife and/or habitats associated with the No-Build Alternative.



**Table 4-3**  
**Proposed Land Use/ Land Cover Impacts by Alternative**

FLUCCS Code		FLUCFCS Description	Preferred Alternative	No-Build Alternative
			Impact (ac)	Impact (ac)
1000: URBAN AND BUILT UP	1100	Residential, Low Density - Less Than Two Dwelling Units/Acre	<0.5	0
	1200	Medium Density Residential - 2-5 Units/Acre	1	0
	1300	Residential, High Density - = 6 Units/Acre	1	0
	1400	Commercial and Services	1.5	0
	1490	Commercial and Services Under Construction	1	0
	1550	Other Light Industry	1	0
	1560	Other Heavy Industrial	0.5	0
	1850	Parks and Zoos	1.5	0
3000: UPLAND NON-FORESTED	3100	Herbaceous Upland Non-forested	4	0
4000: UPLAND FOREST	4100	Upland Coniferous Forests	<0.5	0
	4140	Pine Mesic Oak	<0.5	0
	4200	Upland Hardwood Forests	1.5	0
	4340	Upland Mixed Coniferous / Hardwood	3	0
5000: WATER	5100	Streams and Waterways	<0.5	0
	5300	Reservoirs	6	0
6000: WETLANDS	6300	Mixed Forested Wetland	<0.5	0
	6440	Emergent Aquatic Vegetation	<0.5	0
	6460	Mixed Scrub-Shrub Wetland	1	0
8000: TRANSPORTATION, COMMUNICATIONS & UTILITIES	8140	Roads and Highways	85	0
	8320	Electric Power transmission Lines	1	0
	8370	Surface Water Collection Basins	9	0



### 4.4.2 Indirect, Secondary, and Cumulative Impacts

Indirect and secondary effects are those impacts that are reasonably certain to occur later in time as a result of the proposed project. They may occur outside of the area directly affected by the proposed project. Potential secondary effects include increased noise, lighting, traffic, and development, which could impact wildlife or result in a change in wildlife migration patterns. Cumulative effects include the effects of past, present, and future state, local, or private actions that are reasonably certain to occur in the project area. Future federal actions that are unrelated to the proposed project are not considered in the determination of cumulative effects because they require a separate consultation in accordance with Section 7 of the ESA.

#### 4.4.2.1 Preferred Alternative

Indirect, secondary and cumulative impacts associated with the proposed project would be minor because a roadway already exists. Farther from the roadway, in areas currently designated for potential offsite stormwater treatment, secondary impacts of increased nuisance/exotic vegetation are anticipated. Nuisance/exotic vegetation has negative impacts to native wildlife as they take over the natural habitats upon which the species rely.

#### 4.4.2.2 No-Build Alternative

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



## **5.0 WETLANDS AND OTHER SURFACE WATER EVALUATION**

### **5.1 Agency Coordination**

An AN for the SR 414 Expressway Extension PD&E Study was submitted for agency review and comment on April 27, 2020. Comments were received from NMFS and EPA regarding wetland concerns. NMFS expressed that the project is likely to impact forested and herbaceous freshwater wetlands, marshes and surface waters. There will be no impact to EFH or federally managed fisheries in the unnamed wetlands, nor impacts to ESA listed species under NMFS purview. Construction activities may impact adjacent wetlands through sedimentation and runoff. To minimize sedimentation and runoff impacts, NMFS recommends the applicant utilize best management practices. Mitigation for unavoidable impacts to freshwater wetlands should be offset by purchasing appropriate credits from a mitigation bank, or through another suitable mitigation strategy to ensure functional values are offset in the same watershed as the impact.

AN comments provided by the EPA suggest that CFX consider the potential adverse effect of construction, urban runoff and hydrologic modifications on surface and groundwater and the potential benefits of wetlands such as absorption of various pollutants, including excess nutrients and sediment, before these pollutants reach rivers, lakes, and other water bodies. Where applicable, EPA also recommends that CFX consider vegetated buffers or filter strips along stream corridors to stabilize the banks, trap sediments and nutrients, and reduce peak flows.

The FDEP begin the public rulemaking process of assuming the federal dredge and fill permitting program under section 404 of the federal Clean Water Act within certain waters. The rulemaking process was completed on July 21, 2020. Through this process, Chapter 62-331, Florida Administrative Code (F.A.C.), "State 404 Program," was created to assume requirements of federal law not already addressed by the existing Environmental Resource Permitting program along with minor changes to the ERP rules in Chapter 62-330, F.A.C. State assumption of the 404 program provides a permitting procedure where both federal and state requirements are addressed by state permits. The State 404 Program is a separate program from the existing ERP program, and projects within state-assumed waters require both an ERP and a State 404 Program authorization. The State 404 Program is responsible for overseeing federal permitting for any project proposing dredge or fill activities within state assumed waters including linear transportation projects. The EPA approved Florida's program on December 17, 2020, thereby making the State 404 Program effective on December 22, 2020. The Preferred Alternative occurs outside of the USACE retained waters area, and therefore, the Section 404 wetland impact permit submittal will be processed under the State 404 program.

CFX is conducting multiple Environmental Advisory Group meetings. A summary of those meetings will be provided once the meeting series is complete. Other agencies, including the USFWS, FDEP, and the FWC will still review and comment on wetland permitting and potential affects to protected wildlife species. Depending on the final design developed for the Preferred Alternative, the project may qualify for a SJRWMD General Permit, or if not, it would require an Individual Permit under FAC Chapter 62-330.054.

### **5.2 Methodology**

The extent and types of wetlands in the project study area were documented in accordance with Executive Order 11990, Protection of Wetlands, and the FDOT PD&E Manual, Part 2 Chapter 9. Wetlands were



identified through the review of available literature, GIS data, and field verification. The following sources were reviewed prior to conducting the field review:

- USFWS National Wetlands Inventory (NWI) Maps (2019);
- Land use and land cover maps (SJRWMD 2014);
- NRCS Soil Survey of Seminole and Orange County, Florida (2018);
- ETDM Summary Report (2018); and
- True color aerial photography (2018).

Following the review of all available materials, field assessments were conducted on May 7 and November 10, 2020 to identify the presence of wetland vegetation, evidence of hydrology, and hydric soil indicators. The jurisdictional limits of the wetlands were estimated using FLUCCS habitat types and the criteria stated in the *USACE Final Regional Supplement to the Corps of Engineers Wetland Delineations Manual: Atlantic and Gulf Coastal Plain Region* (October 2010), the Navigable Waters Protection Rule (effective since June 22, 2020), and Florida statewide unified wetland delineation methodology as adopted by the FDEP and the Water Management Districts per FAC Chapter 62-340, and described in *The Florida Wetlands Delineation Manual*. Per FAC Chapter 62.600(D), boundaries of surface waters with slopes of 4 to 1 (horizontal to vertical) or steeper were estimated using the top of bank. Biologists evaluated wetland and surface water systems nearby the project area using the Uniform Mitigation Assessment Method. The results presented in this report are a compilation of information collected from field assessments performed by project biologists and from the data sources described above.

### 5.3 Results

The project area contains nine other surface waters (FLUCCS 5300, FLUCCS 8370), two surface waters (FLUCCS 5100), and six wetlands as shown in **Appendix G** and summarized in **Table 5-1**. Preliminary UMAM scores and functional loss analysis are summarized in **Table 5-2**. Wetland descriptions are provided below.



**Table 5-1**  
**Wetland and Surface Water Impacts Associated with the Preferred Alternative**

Wetland / Surface Water ID	FLUCCS Code	USFWS Classification	Preferred Alternative Impact (Acres)
OSW 1	5300/8370	PUBx	3
OSW 2	5300	PUBx	1
OSW 3	5300/8370	PUBx	5
OSW 4	8370	PUBx	1
OSW 5	5300/8370	PUBx	1
OSW 6	5300/8370	PUBx	2
OSW 7	5300/8370	PUBx	3
OSW 8	8370	PUBx	<0.5
SW 1	5100	PEM1X	<0.5
SW 1	5100	PEM1X	<0.5
WL 1	6300	PFO1	<0.5
WL 2	6300/6440/6460	PEM1	0.5
WL 3	6300	PFO1	<0.5
WL 4	6300	PFO1	<0.5
WL 5	6300	PFO1	<0.5

\* Other Surface Water 9 and Wetland 6 are within the Preferred Alternative limits, however there are no impacts proposed to these systems

**Table 5-2**  
**Preliminary UMAM Summary for Impacts Associated with the Preferred Alternative**

System ID	FLUCFCS Code	FLUCFCS Description	USFWS Classification	Impact Area for Preferred Alternative (Acres)	Preliminary UMAM Score	Functional Loss
SW 1*	5100	Streams and Waterways	PEM1X	0.07	N/A	N/A
<b>Surface Water Total</b>				<b>0.07</b>	<b>0</b>	<b>0</b>
WL 1, 2 (portion), 3, 4, 5	6300	Mixed Wetland Hardwoods	PFO1	0.35	0.50	0.03
WL 2 (portion)	6440	Emergent Aquatic Vegetation	PEM1	0.02	0.57	0.17
WL 2 (portion)	6460	Mixed Scrub-Shrub Wetland	PEM1	0.57	0.57	0.20
<b>Forested Wetland Total</b>				<b>0.92</b>		<b>0.23</b>
<b>Herbaceous Wetland Total</b>				<b>0.02</b>		<b>0.17</b>
<b>Wetland Total</b>				<b>0.94</b>		<b>0.40</b>

\*UMAM score for the OSWs was not prepared because mitigation will not be required



### Wetlands 1, 2(portion) 3, 4 and 5 – Mixed Wetland Hardwoods (FLUCFCS 6300 / PFO1)

These wetlands are mixed forested wetlands characterized by forested wetland communities in which neither hardwoods nor evergreen conifers achieve a 67 percent dominance of the crown canopy. These wetlands have been impacted by the existing SR 414 and adjacent infrastructure. Nuisance/exotic vegetation and vines have become established along the edge. The canopy percent cover is co-dominated by red maple (*Acer rubrum*) and American elm (*Ulmus americana*). Common vegetation includes Brazilian pepper (*Schinus terebinthifolia*), Peruvian primrose willow (*Ludwigia peruviana*), wax myrtle (*Morella cerifera*), and grape vine (*Vitis* sp.). Various ground cover species exist depending on the specific wetland area.

### Wetland 2 (portions) and 6 – Emergent Aquatic Vegetation/ Mixed Scrub-Shrub Wetland (FLUCFCS 6440, 6460 / PEM1)

These wetlands contain emergent aquatic vegetation and mixed scrub-shrub species. These wetlands have been impacted by the existing SR 414 and adjacent infrastructure. 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, and includes both native and non-native emergent vegetation. Nuisance/exotic vegetation and vines have become established along the edge. Common vegetation species include cattail (*Typha* sp.), Peruvian primrose willow, wax myrtle, with occasional scattered red maple. Evidence of hydrology includes stain lines and buttressing.

Eight (8) Other Surface Waters (OSW 1-8) and one (1) Surface Water (SW 1) occur within the project study area, the majority which are existing stormwater management facilities or ponds associated with existing roadway and adjacent developments. Other surface waters can be categorized as stormwater ponds (FLUCCS 5300) and pond edges, roadside linear grass swales or ditches which run parallel to the existing roadway (FLUCCS 8370).

Other Surface Water 9 (FLUCCS 8370) (0.25 acre) and Wetland 6 (FLUCCS 6460) (0.43 acre) are within the Preferred Alternative limits, however there are no impacts proposed to these systems since the only future proposed project impacts proximal to these features will be milling and resurfacing of the existing SR 414. Therefore, these two features are not included in further impact calculations.

## **5.4 Evaluation of Alternatives**

### **5.4.1 Direct Impacts**

#### **5.4.1.1 Preferred Alternative**

Impacts to wetlands will be avoided and minimized during the design process, however, for the purposes of this report, the worst case scenario of permanent fill impacts to all systems within the footprint was assumed. For the Preferred Alternative, approximately 1 acre of permanent fill wetland impacts and <0.5 acre of permanent fill surface water impacts are anticipated.

Wetlands 1, 2(portion) 3, 4 and 5 are Mixed Forested Wetlands (FLUCCS 6300) Potential direct impacts to Wetlands 1, 4 and 5 are extremely minor (<0.5 acre each) and result from the placement of fill. Potential direct impacts to Wetland 2 and 3 will result from the placement of support piers for the proposed elevated roadway. Preliminary design concepts include two piers at 39 feet x 39 feet (total of 3,042 square feet) and two separate piers at 34 feet x 29 feet (total of 1,972 square feet). As previously mentioned



there are no impacts proposed to Wetland 6. Total functional loss for wetlands is anticipated to be 0.40 units, of which 0.17 units is attributed to herbaceous systems and 0.23 units is attributed to forested systems.

Surface Water 1 (FLUCCS 5100) includes the south side and north side of Little Wekiva Canal. This system is channelized on the south side of SR 414 and forms a natural stream profile on the north side of SR 414. The project will result in <0.5 acre of impacts to this system. A preliminary UMAM score was not developed for SW 1 because mitigation for impacts will not be required.

Other Surface Waters classified as Reservoirs (FLUCFCS 5300) are man-made, open water ponds with mowed edges associated with FLUCS 5300 are Surface Water Collection Basins (FLUCCS 8370) which was created by the SJRWMD to classify excavated open spaces, situated within residential sub-divisions or communities and along freeway corridors for temporary collection and holding of surface water runoff. Potential impacts by reshaping and re-grading the existing ponds and collection basins and adding offsite ponds will be determined during the design and permitting phase. Pursuant to 33 CFR 328.3(a)(8), waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of Clean Water Act are not waters of the United States. Therefore, mitigation is not required, and a UMAM score for this classification is not needed.

### 5.4.1.2 No-Build Alternative

There are no direct impacts to wetlands or surface waters associated with the No-Build Alternative.

### 5.4.2 Indirect, Secondary, and Cumulative Impacts

Indirect, secondary, and cumulative impacts (a state permitting concept) are those impacts that are reasonably certain to occur later in time as a result of the proposed project. They may occur outside of the area directly affected by the proposed project. Cumulative effects (a federal permitting concept) include the effects of future state, local, or private actions that are reasonably certain to occur in the project area.

#### 5.4.2.1 Preferred Alternative

Potential indirect impacts anticipated to occur as a result of the Preferred Alternative may include shading and light from the elevated roadway structure. Potential indirect impacts will be assessed during the design and permitting phase when more design elements are known. Secondary impacts of migrating edge effects will likely occur. At locations where natural areas meet development, edge effects such as increased cover of nuisance/exotic vegetation and changes in microclimate generally take place. The wetlands within the Preferred Alternative project footprint already experience edge effects due to the existing SR 414 road surface and infrastructure. The severity of these edge effects should not increase, however, it is expected that these effects would migrate to the new transitional area between remaining wetlands and new construction. Due to the developed nature of the surrounding area, no secondary or indirect impacts are anticipated to occur. Cumulative impacts will be avoided by mitigating within the same basin as the impacts.

#### 5.4.2.2 No-Build Alternative

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



### 5.5 Wetland Impact Mitigation

The project study area is located within the service areas of the Blackwater Creek and Wekiva River Mitigation Banks. For impacts to wetlands, it is anticipated that mitigation would be required. Mitigation is not anticipated for impacts to other surface waters. Mitigation credits would be purchased from one of the aforementioned permitted wetland mitigation banks.

Preliminary UMAM scores and functional losses by representative system type are summarized in **Table 5-2**. All preliminary UMAM scores, preliminary UMAM calculations, preliminary wetland and surface water boundaries and determinations discussed are subject to revisions and approval by regulatory agencies during the permitting process. The exact type of mitigation to offset impacts will be coordinated with the regulatory during the permitting phase(s) of this project. Mitigation will be addressed pursuant to Chapter 373.4137, FS in order to satisfy all mitigation requirements of Part IV, Chapter 373, FS and 33 U.S.C. 1344.

This project is in conformance with Executive Order 11990, Protection of Wetlands; consideration was given to avoiding and/or minimizing wetland impacts. 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, and measures have been taken to minimize harm to wetlands.



## 6.0 PERMITTING

Under Section 404 of the CWA, in Florida and 47 other states, a permit must be obtained from the USACE for activities that discharge dredge and fill materials into a water of the United States. Additionally, in Florida, works and activities typically require an ERP from the FDEP or one of the state's five water management districts (Part IV of F.S. Ch. 373 and Rule 62-330 of the FAC). FDEP estimated there was significant overlap in the federal Section 404 permit and state ERP, with as many as 85% of projects requiring a permit from each agency for the same activity. The goal of state assumption of the federal Section 404 permitting program is to provide a streamlined permitting procedure to address both federal and state requirements, while maintaining at least the same level of environmental protection as the federal program. As part of the assumption process, FDEP worked with the EPA, USACE, and other agencies on memorandums of agreement and memorandums of understanding and also adopted 62-331 FAC, with an incorporated State 404 Program Applicant's Handbook, setting forth the rules for the State 404 program, including provisions to meet federal requirements.

The State 404 Program applies to any project proposing dredge or fill activities within state assumed waters and is a separate permit and discrete process from ERP. This program does not apply to waters defined as "retained waters", for which Section 404 CWA permits and Section 10 Rivers and Harbors Act permits will continue to be reviewed and issued by USACE. The Preferred Alternative does not fall within the retained waters area and will therefore fall under the State 404 Program.

Other agencies, including the USFWS, U.S. Environmental Protection Agency (EPA), and the FWC, review and comment on wetland permit applications. The FWC also issues permits for gopher tortoise relocation activities and protected bird nest take. In addition, the FDEP regulates stormwater discharges from construction sites. The complexity of the permitting process will depend on the impact to jurisdictional areas. It is anticipated that the following permits will be required for this project:

<u>Permit</u>	<u>Issuing Agency</u>
State 404 Program	FDEP
ERP	SJRWMD
SJRWMD Riparian Habitat Protection Zone	SJRWMD
National Pollutant Discharge Elimination System (NPDES) Permit	FDEP

### 6.1 Section 404 Dredge and Fill Permit

Because the project is situated in "assumed waters", it is anticipated that the State 404 Program will be required.

### 6.2 ERP

SJRWMD requires an ERP when construction of any project results in the creation or modification of a surface water management system or results in impacts to jurisdictional wetlands. The ERP permitting process depends on the size of the project and/or the extent of wetland impacts, therefore permitting requirements will be determined during design/permitting phase of project, however this project is likely to require an Individual Permit.



### 6.3 NPDES

Title 40 CFR Part 122 prohibits point source discharges of stormwater to waters of the U.S. without an NPDES permit. Under the State of Florida's delegated authority to administer the NPDES program, construction sites that will result in greater than one acre of disturbance must file for and obtain either coverage under an appropriate general permit contained in Chapter 62-621, FAC, or an individual permit issued pursuant to Chapter 62-620, FAC.



## 7.0 CONCLUSIONS

### 7.1 Protected Species and Habitats

Federally listed species which may be affected, but are not likely to be adversely affected by the project include:

- Eastern Indigo Snake (*Drymarchon corais couperi*); and
- Wood stork (*Mycteria americana*).

The project is anticipated to have no effect on the following federally listed species:

- Sand skink (*Neoseps reynoldsi*);
- Florida scrub-jay (*Aphelocoma coerulescens*);
- Red-cockaded woodpecker (*Picoides borealis*); and
- Everglade snail kite (*Rostrhamus sociabilis plumbeus*).

There is no adverse effect anticipated on the following state-protected species:

- Gopher tortoise (*Gopherus polyphemus*);
- Florida sandhill crane (*Antigone pratensis canadensis*);
- Southeastern American kestrel (*Falco sparverius paulus*); and
- Wading birds including the little blue heron (*Egretta caerulea*) and roseate spoonbill (*Platalea ajaja*).

There is no effect anticipated on the following state-protected species:

- Short-tailed snake (*Lampropeltis extenuate*);
- Florida pine snake (*Pituophis melanoleucus mugitus*); and
- Florida burrowing owl (*Athene cunicularia floridana*).

The project will have no effect on the bald eagle (*Haliaeetus leucocephalus*) or various state-protected bat species. There is no adverse effect anticipated to the Florida black bear (*Ursus americanus floridanus*). These two species or groups of animals which may occur in the project vicinity are not listed as threatened, endangered, or species of special concern (SSC), but receive other legal protection.

Multiple avenues of protection will be employed to negate and minimize any potential affects to these species. Some of the measures employed may include detailed surveys and agency coordination during the project design phase, including providing appropriate mitigation to offset impacts. During construction, best management practices (BMPs), adherence to FDOT's *Standard Specifications for Road and Bridge Construction*, and use of preconstruction surveys are strategies that will be considered, as needed, for protection of listed species.

### 7.2 Wetlands

For the Preferred Alternative, approximately 1 acre of wetland impacts and <0.5 acre of permanent fill surface water impacts are expected to wetland systems considered jurisdictional by the FDEP State 404 Program and SJRWMD; it is anticipated that these areas will be permanently impacted. An FDEP State 404 Program permit and an Individual Permit from SJRWMD are expected to be required.



The total functional loss for wetlands is estimated to be approximately 0.40 units using the UMAM: approximately 0.23 units of functional loss for forested wetlands and approximately 0.17 units of functional loss for herbaceous wetlands. Functional loss for other surface waters is not applicable because these systems were previously permitted and will be replaced in-kind. The CFX will address wetland and/or surface water impacts and provide appropriate wetland mitigation in future phases of this project.

### Implementation Measures

Implementation measures are actions that the CFX is required to take per procedure, standard specifications, or other agency requirements. These are standard measures which will be implemented at a later project phase. For this project, implementation measures that address protected species and wetlands-related items include:

- Practicable measures to avoid or minimize impacts will be further addressed during final design for the project;
- BMPs will be used for erosion control during construction to minimize impacts to any wetlands and surface waters that are affected by the proposed project; and
- Unavoidable impacts to wetlands and surface waters will be mitigated pursuant to 373.4137 FS to satisfy all mitigation requirements of Part IV, Chapter 373 FS and 33 U.S.C. 1344 should state and/or federal regulations require it.

### 7.3 Commitments

Based upon findings of the preliminary data collection, general corridor surveys, and ongoing coordination with the USFWS and FWC, the CFX is considering the following project commitments:

1. The most recent version of the USFWS Standard Protection Measures for the Eastern Indigo Snake will be adhered to during construction of the proposed project (**Appendix D**).
2. Avoidance and minimization of wetland and listed species impacts will continue to be evaluated during the final design, permitting and construction phases of this project and all possible and practicable measures to avoid or minimize these impacts during design, construction and operation will be incorporated.
3. Pre-construction surveys will be conducted for listed species as required.
4. BMPs to control erosion and sedimentation in accordance with Standard Specifications for Road and Bridge Construction will be implemented.



## 8.0 REFERENCES

- Anderson, Patti J. and Richard E. Weaver. 2010. Notes on Florida's Endangered and Threatened Plants. Florida Department of Agriculture and Consumer Services.
- CDM Smith. 2020a. *FY 2019 General Traffic and Earnings Consultant's Annual Report*. Prepared for Central Florida Expressway Authority. June 15. [https://www.cfxway.com/wp-content/uploads/2020/06/FY-2019-CFX-General-Traffic-and-Earnings-Consultants-Annual-Report-Final-Web-Version\\_R2.pdf](https://www.cfxway.com/wp-content/uploads/2020/06/FY-2019-CFX-General-Traffic-and-Earnings-Consultants-Annual-Report-Final-Web-Version_R2.pdf)
- CDM Smith. 2020b. *Traffic Technical Memorandum: Existing Conditions*. Prepared for Central Florida Expressway Authority. August 14.
- Central Florida Expressway Authority (CFX). 2019. *Final Technical Memo SR 414 (Maitland Blvd.) Reversible Express Lanes Schematic*. Prepared by Dewberry. July.
- Cowardin, Lewis M., Carter, Virginia, Golet, Francis C., and Edward T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service Publication, Washington D.C.
- Florida Association of Environmental Soil Scientists. 2007. *Hydric Soils of Florida Handbook*, 4th Edition, Gainesville, Florida.
- Florida Department of Transportation. 1999. Florida Land Use, Cover and Forms Classification System. Surveying and Mapping Thematic Mapping Section. Tallahassee, Florida.
- Florida Department of Transportation. 2019. Standard Specifications for Road and Bridge Construction. Tallahassee, Florida.
- Florida Fish and Wildlife Conservation Commission. 2008. Bald Eagle Management Plan. Florida Fish and Wildlife Conservation Commission, Tallahassee, Florida.
- Florida Fish and Wildlife Conservation Commission <https://public.myfwc.com/FWRI/EagleNests/nestlocator.aspx#search> [Accessed September 1, 2020].
- Florida Fish and Wildlife Conservation Commission. 2018. Florida's Official Endangered and Threatened Species List (Updated December 2018).
- Florida Natural Areas Inventory. 2001. Field Guide to the Rare Animals of Florida. [http://www.fnai.org/FieldGuide/pdf/Charadrius\\_melodus.PDF](http://www.fnai.org/FieldGuide/pdf/Charadrius_melodus.PDF)
- MetroPlan Orlando. 2020. *2045 Metropolitan Transportation Plan Cost Feasible Plan*. Amended June 9, 2021.
- U.S. Army Corps of Engineers Environmental Laboratory. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0). U.S. Army Engineer Research and Development Center, Vicksburg, Mississippi.



- U.S. Department of Agriculture. 1989. NRCS. Soil Survey of Orange County, Florida. [https://www.nrcs.usda.gov/Internet/FSE\\_MANUSCRIPTS/florida/orangeFL1989/orangeFL1989.pdf](https://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/florida/orangeFL1989/orangeFL1989.pdf) [Accessed September 3, 2020].
- U.S. Fish and Wildlife Service. September 2008. USFWS. *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.*
- U.S. Fish and Wildlife Service. August 2013. USFWS. *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.*
- U.S. Fish and Wildlife Service. 2019. USFWS. Letter: Consultation Key for the Florida Bonneted Bat; 04EF2000-2014-I-0320-R001. [https://www.fws.gov/verobeach/ProgrammaticPDFs/2019\\_1022\\_letter\\_ServicetoCorps\\_FBB-ProgrammaticKey.pdf](https://www.fws.gov/verobeach/ProgrammaticPDFs/2019_1022_letter_ServicetoCorps_FBB-ProgrammaticKey.pdf) [Accessed October 20, 2020].
- U.S. Fish and Wildlife Service. July 2020. USFWS. *Peninsular Florida Species Conservation and Consultation Guide Sand Skink and Blue-tailed (Bluetail) Mole Skink*



# **APPENDIX A**

## **Project Study Area NRCS Soils Map and Descriptions**



Build Alternative

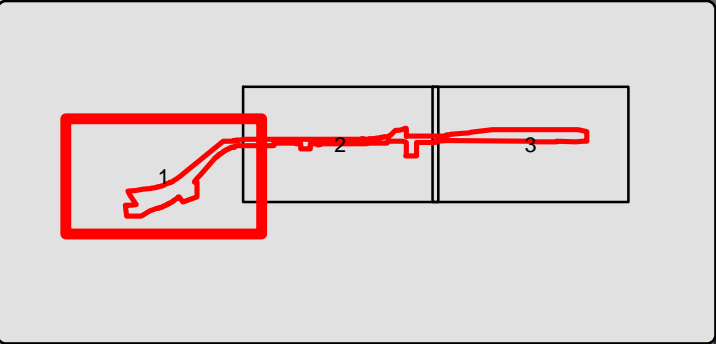
Study Area

**NRCS Hydric Soil**

Hydric

Non-hydric

Unranked





Date: 02/22/2021 Rev. Date: N/A PM: ES GIS Analyst: TCC Map Document: 201900971\_NRCS\_Report\_20200430.mxd Project Number: 201900971 PDF Document: 201900971\_NRCS\_HydricSoils\_Field\_TCC\_20210223.pdf Plot Size: 11x17

Build Alternative

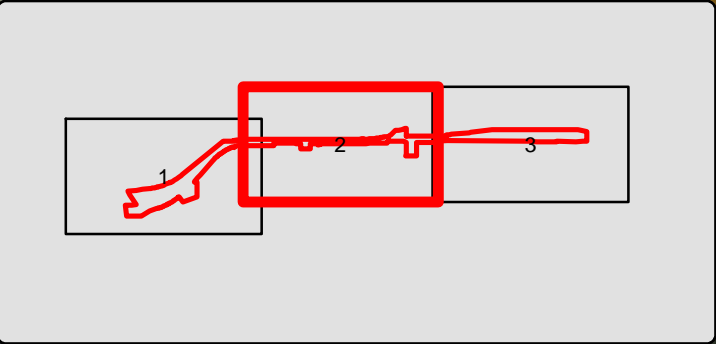
Study Area

**NRCS Hydric Soil**

Hydric

Non-hydric

Unranked





Build Alternative

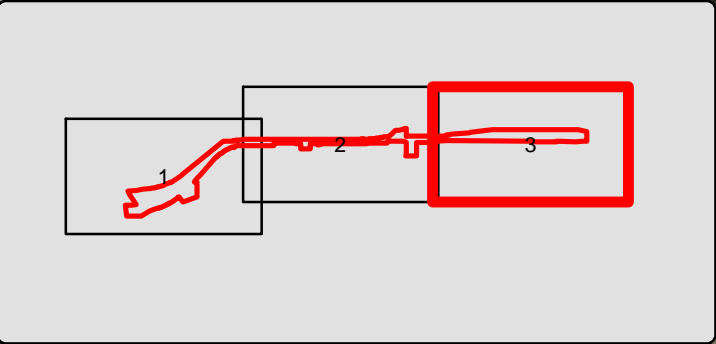
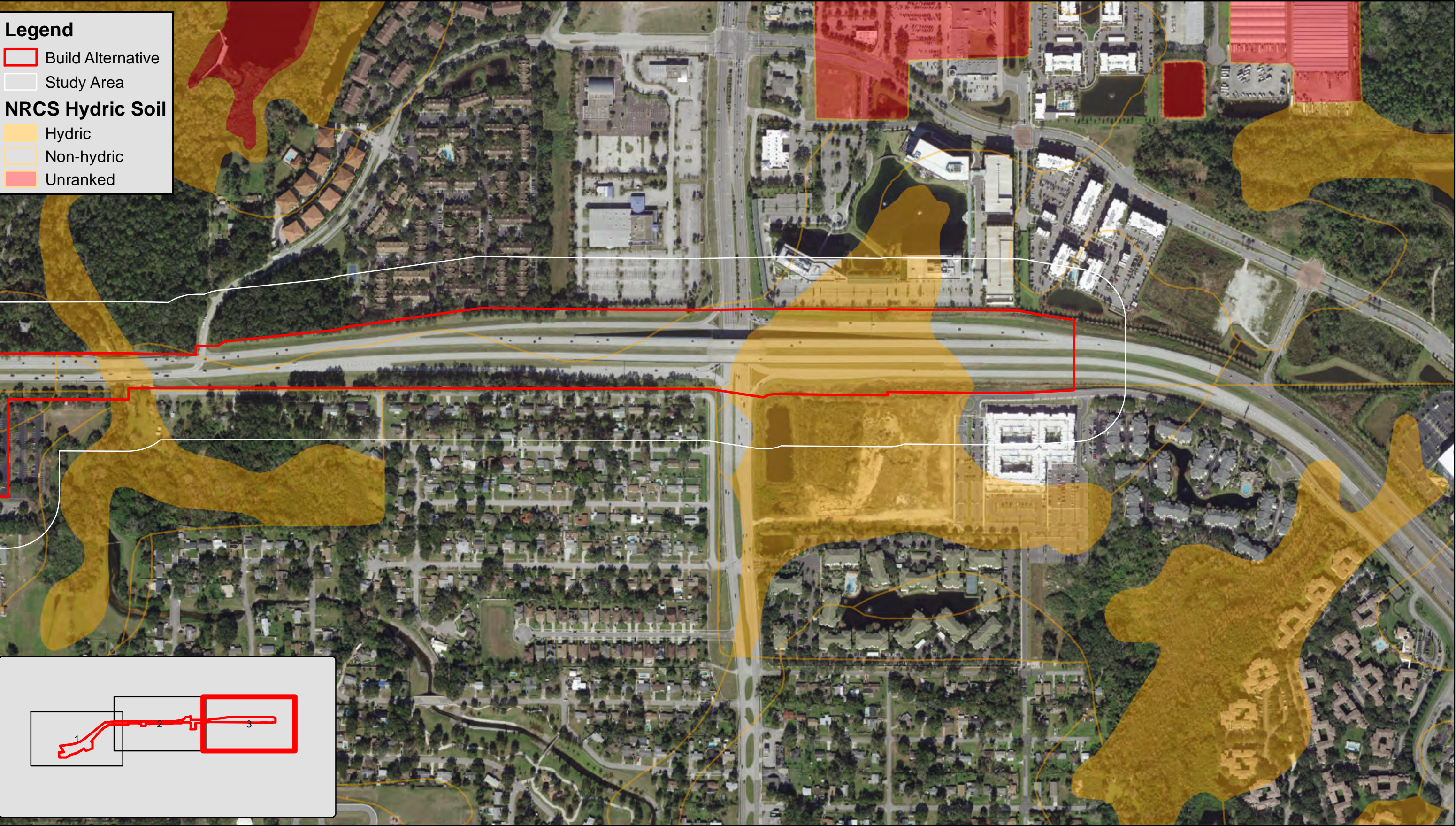
Study Area

**NRCS Hydric Soil**

Hydric

Non-hydric

Unranked

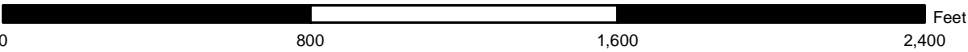


All data within this map are supplied as is, without warranty. This product has not been prepared for legal, engineering, or survey purposes. Users of this information should review or consult the primary data sources to ascertain the usability of the information.

**Study Area NRCS Soils**

Page 3 of 3

CFX Project Number: 414-227  
Central Florida Expressway  
State Road 414 Expressway Extension  
Project Development and Environment Study  
From US 441 to SR 434  
Orange County and Seminole County, Florida



Data Source:  
- NRCS-Soils  
- ESA  
Imagery Source:  
- ESRI

Coordinate System:  
NAD 1983 Florida  
State Plane West





## **Appendix A: Project Area NRCS Soils Descriptions**

### Arents (MUID 1, non-hydric)

This soil type comprises approximately 0.23 percent of the soils located in the study area. These soils do not have diagnostic horizons because they have been deeply mixed by plowing, spading, or other methods of moving by humans. Accompanying land uses generally are pasture, cropland, forest, and/or wildlife habitat.

### Adamsville-Sparr Fine Sand (MUID 2, non-hydric)

This soil type comprises approximately 1.05 percent of the soils located in the study area. These soils are described as somewhat poorly drained, found on lower slopes in uplands and on low knolls in flatwoods. The texture is sand or fine sand to a depth of 80 inches or more.

### Basinger Fine Sand (MUID 3, hydric)

This soil type comprises approximately 1.51 percent of the soils located in the study area. This soil type is described as very deep, very poorly and poorly drained, rapidly permeable soil in low flats, sloughs, depressions and poorly defined drainageways. Slopes range from 0 to 2 percent. Natural vegetation on this soil series could be expected to be scattered slash pine (*Pinus elliotii*), longleaf pine (*Pinus palustris*), southern slash pine (*Pinus elliotii* var. *densa*), scattered cypress (*Taxodium* spp.) with an understory dominated by gallberry (*Ilex glabra*), pineland threeawn (*Aristida* sp.), cabbage palm (*Sabal palmetto*), St. Johnswort (*Hypericum* spp.), cutthroat grass (*Coleataenia abscissa*), blue maidencane (*Amphicarpum muhlenbergianum*), low panicum (*Panicum* spp.), wax myrtle (*Morella cerifera*), and sand cordgrass (*Spartina bakeri*).

### Candler Fine Sand, 0 to 5 Percent Slopes (MUID 4, non-hydric)

This soil type comprises approximately 2.42 percent of the soils located in the study area. These soils are described as excessively drained, very rapidly permeable and found in uplands. The texture ranges from fine sand to sandy clay loam.

### Candler-Apopka Fine Sand, 5 to 12 Percent Slopes (MUID 6, non-hydric)

This soil type comprises approximately 12.77 percent of the soils located in the study area. These soils are described as excessively drained, very rapidly permeable and found in uplands. The texture ranges from fine sand to sandy clay loam.

### Astatula-Apopka Fine Sands, 5 to 8 Percent (MUID 7, non-hydric)

This soil type comprises approximately 0.9 percent of the soils located in the study area. These soils are described as nearly level to strongly sloping, excessively drained and found on ridges and hillsides in uplands. Slopes range from 0 to 12 percent.

### Basinger, Samsula and Hontoon Soils, Depressional (MUID 10, hydric)

This soil type comprises approximately 6.24 percent of the soils located in the study area. These soils are described as very poorly drained, found in sloughs, swamps and marshes. The slopes are less than 2 percent.

### Basinger and Smyrna Fine Sands, Depressional (MUID 11, hydric)

This soil type comprises approximately 0.39 percent of the soils located in the study area. These soils are described as very poorly drained, found in sloughs, marshes, streams and ponds. The slopes are less than 2 percent and slope ranges from 0 to 2 percent.



Immokalee Sand, 0 to 2 Percent Slopes (MUID 16, non-hydric)

This soil type comprises approximately 5.70 percent of the soils located within the study area. This soil is described as poorly drained and sandy textured. It can be found in flats of mesic or hydric lowlands and the slope ranges from 0 to 2 percent.

Immokalee Fine Sand (MUID 20, non-hydric)

This soil type comprises approximately 2.44 percent of the soils located within the study area. This soil type is described as nearly level, poorly drained with zero to two percent slopes. Under natural conditions, the seasonal high water table is within a depth of six to 18 inches for one to six months during most years. Natural vegetation is comprised of South Florida slash pine, saw palmetto (*Serenoa repens*), wax myrtle, chalky bluestem (*Andropogon virginicus*), creeping bluestem (*Schizachyrium scoparium*), and wiregrass (*Aristida stricta*).

Seffner Fine Sand, 0 to 2 Percent Slopes (MUID 30, non-hydric)

This soil type comprises approximately 0.36 percent of the soils located within the study area. This soil is described as somewhat poorly drained. The texture is sand and slope is 0 to 2 percent. This soil is found typically on rises and knolls in mesic uplands.

St. John's Fine Sand (MUID 37, non-hydric)

This soil type comprises approximately 0.45 percent of the soils located within the study area. This soil type consists of poorly drained soils that formed in sandy marine sediment. These soils occur on low-lying plains on flatwoods, slopes are less than two percent.

Samsula-Hontoon-Basinger Association, Depressional (MUID 41, hydric)

This soil type comprises approximately 4.83 percent of the soils located within the study area. This soil has been described as very poorly drained with a texture range of muck to fine sand. This soil is typically found in depressions and flood plains.

Sanibel Muck (MUID 42, hydric)

This soil type comprises approximately 1.58 percent of the soils located within the study area. This soil type is described as very poorly drained sandy soils with organic surfaces; they occur on nearly level to depressional areas with slopes less than two percent. The water table is at depths of less than 10 inches for six to 12 months during most years; water is above the surface for periods of two to six months during wet seasons. Natural vegetation on this soil series could be expected to be sawgrass (*Cladium jamaicense*), melaleuca (*Melaleuca quinquenervia*), and wax myrtle.

Seffner Fine Sand, 0 to 2 Percent Slopes (MUID 43, non-hydric)

This soil type comprises approximately 6.54 percent of the soils located within the study area. This soil is described as somewhat poorly drained with a fine sand texture. This soil can typically be found on rises and knolls of mesic upland.

Tavares Fine Sand, 0 to 5 Percent Slopes (MUID 46, non-hydric)

This soil type comprises approximately 21.49 percent of the soils located within the study area. This soil has been described as moderately well drained with a fine sand texture. Typically, this soil can be found on rises, knolls and ridges in mesic uplands.



Tavares-Millhopper Complex, 0 to 5 Percent Slopes (MUID 47, non-hydric)

This soil type comprises approximately 8.88 percent of the soils located within the study area. This soil has been described as moderately well drained with a fine sand texture. Typically, this soil can be found on rises, knolls and ridges in mesic uplands.

Tavares-Urban Land Complex, 0 to 5 Percent Slopes (MUID 48, non-hydric)

This soil type comprises approximately 5.25 percent of the soils located within the study area. This soil has been described as moderately well drained with a fine sand texture. Typically, this soil can be found on rises, knolls and ridges in mesic uplands.

Urban Land (MUID 50, unranked)

This soil type comprises approximately 2.95 percent of the soils located within the study area. Soils which have been altered as areas become urbanized. Examples of fill material in urban soils: natural soil materials that have been moved around by humans, construction debris, materials dredged from waterways, coal ash, municipal solid waste, a combination of the aforementioned.

Water (MUID 99, unranked)

This soil type comprises approximately 1.27 percent of the soils located within the study area. These soils occur under waterbodies with year-round surface water. They are ranked as neither hydric nor non-hydric.



# **APPENDIX B**

## **Project Study Area Land Use Map and Descriptions**



Legend

Build Alternative

Study Area

Field-Verified FLUCCS

1200: MEDIUM DENSITY RESIDENTIAL - 2-5 UNITS/ACRE

1300: RESIDENTIAL, HIGH DENSITY - = 6 UNITS/ACRE

1400: COMMERCIAL AND SERVICES

1550: OTHER LIGHT INDUSTRIAL

1560: OTHER HEAVY INDUSTRIAL

3100: HERBACEOUS UPLAND (NON-FORESTED)

4100: UPLAND CONIFEROUS FORESTS

4140: PINE MESIC OAK

4200: UPLAND HARDWOOD

5300: RESERVOIRS - PITS, PONDS, DAMMED SYSTEMS

6300: MIXED FORESTED WETLAND

6410: FRESHWATER MARSH

8140: ROADS (=4 LAND DIVIDED WITH MEDIANS)

8320: ELECTRICAL POWER TRANSMISSION LINES

8370: SURFACE WATER COLLECTION BASINS

An aerial photograph of a suburban and industrial area. A red line, representing the 'Build Alternative', runs diagonally from the bottom left towards the top right. Yellow lines outline various land use zones, each labeled with a number. These zones include residential areas (1200, 1300, 1400), industrial areas (1550, 1560), wetlands (6300, 6410), and water bodies (5300). A large circular feature in the center contains a pond (5300) and is surrounded by other land use types. The map also shows roads, parking lots, and some commercial buildings.

A small inset map in the bottom left corner. It shows a larger geographic area with a red rectangle highlighting the specific study area shown in the main map. The red rectangle is divided into three sections, labeled 1, 2, and 3 from left to right.

The logo for the Central Florida Expressway Authority, featuring the text 'CENTRAL FLORIDA EXPRESSWAY AUTHORITY' in a stylized font with orange and black colors.

All data within this map are supplied as is, without warranty. This product has not been prepared for legal, engineering, or survey purposes. Users of this information should review or consult the primary data sources to ascertain the usability of the information.

Study Area Land Use

Page 1 of 3

CFX Project Number: 414-227  
Central Florida Expressway  
State Road 414 Expressway Extension  
Project Development and Environment Study  
From US 441 to SR 434  
Orange County and Seminole County, Florida

A horizontal scale bar with markings at 0, 800, 1,600, and 2,400 feet.

Data Source:  
- SJRWMD  
- ESA FV-FLUCCS  
Imagery Source:  
- ESRI

Coordinate System:  
NAD 1983 Florida  
State Plane West

A north arrow pointing upwards, with the letter 'N' at the top.



Legend

Build Alternative

Study Area

Field-Verified FLUCCS

1100: RESIDENTIAL, LOW DENSITY - LESS THAN 2 DWELLING UNITS/ACRE

1200: MEDIUM DENSITY RESIDENTIAL - 2-5 UNITS/ACRE

1300: RESIDENTIAL, HIGH DENSITY - = 6 UNITS/ACRE

1400: COMMERCIAL AND SERVICES

1700: INSTITUTIONAL

1850: PARKS AND ZOOS

4100: UPLAND CONIFEROUS FORESTS

4200: UPLAND HARDWOOD

4340: UPLAND MIXED CONIFEROUS/HARDWOOD

5100: STREAMS AND WATERWAYS

5200: LAKES

5300: RESERVOIRS - PITS, PONDS, DAMMED SYSTEMS

6300: MIXED FORESTED WETLAND

6410: FRESHWATER MARSH

6440: EMERGENT AQUATIC VEGETATION

6460: MIXED SCRUB-SHRUB WETLAND

8140: ROADS (≧4 LAND DIVIDED WITH MEDIANS)

8320: ELECTRICAL POWER TRANSMISSION LINES

8370: SURFACE WATER COLLECTION BASINS

CENTRAL  
FLORIDA  
EXPRESSWAY  
AUTHORITY

All data within this map are supplied as is, without warranty. This product has not been prepared for legal, engineering, or survey purposes. Users of this information should review or consult the primary data sources to ascertain the usability of the information.

Study Area Land Use

Page 2 of 3

CFX Project Number: 414-227

Central Florida Expressway

State Road 414 Expressway Extension

Project Development and Environment Study

From US 441 to SR 434

Orange County and Seminole County, Florida

080016002400

Feet

Data Source:

- SJRWMD
- ESA FV-FLUCCS

Imagery Source:

- ESRI

Coordinate System:  
NAD 1983 Florida  
State Plane West

N



Build Alternative

Study Area

Field-Verified FLUCCS

1100: RESIDENTIAL, LOW DENSITY - LESS THAN 2 DWELLING UNITS/ACRE

1200: MEDIUM DENSITY RESIDENTIAL - 2-5 UNITS/ACRE

1300: RESIDENTIAL, HIGH DENSITY - = 6 UNITS/ACRE

1400: COMMERCIAL AND SERVICES

1490: COMMERCIAL & SERVICES UNDER CONSTRUCTION

1550: OTHER LIGHT INDUSTRIAL

1700: INSTITUTIONAL

1850: PARKS AND ZOOS

4200: UPLAND HARDWOOD

4340: UPLAND MIXED CONIFEROUS/HARDWOOD

5100: STREAMS AND WATERWAYS

5300: RESERVOIRS - PITS, PONDS, DAMMED SYSTEMS

6300: MIXED FORESTED WETLAND

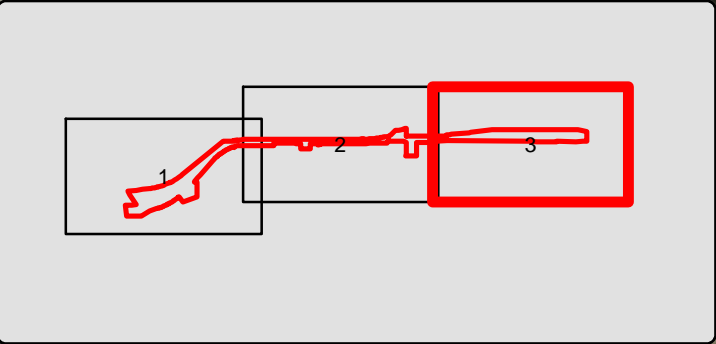
6410: FRESHWATER MARSH

7400: DISTURBED LAND

8140: ROADS (=4 LAND DIVIDED WITH MEDIANS)

8370: SURFACE WATER COLLECTION BASINS

Date: 02/22/2021 Rev. Date: N/A PM: ES GIS Analyst: TCC Map Document: 201900971\_FLUCFCS\_Report\_202004030.mxd Project Number: 201900971\_FLUCFCS\_Field\_TCC\_20210223.pdf Plot Size: 11x17





## **Appendix B: Project Area Land Use Descriptions**

### Residential, Low Density – Less than 2 Dwelling Units/Acre (FLUCCS 1100)

Residential land use characterized by a relatively small number of homes per acre; less than two dwelling units per acre. This includes single-family homes, mobile homes, and mixed units.

### Residential, Medium Density – 2-5 Dwelling Units/Acre (FLUCCS 1200)

Residential land use characterized by having two to five dwelling units per acre. This includes single-family homes, mobile homes, and mixed units.

### Residential, High Density – 6 Units/Acre (FLUCCS 1300)

Residential land use characterized by a relatively large number of homes per acre; six or more dwelling units per acre. This includes single-family homes, mobile homes, multiple dwelling units (low and high rise), mixed units, and multiple high density units.

### Commercial and Services (FLUCCS 1400)

This land use classification describes areas predominantly associated with the distribution of products and services.

### Commercial and Services Under Construction (FLUCCS 1490)

Areas designated for commercial and service uses which are being constructed.

### Other Light Industry (FLUCCS 1550)

Steel fabrication, small boat manufacturing, electronic manufacturing and assembly plants are typical examples of light industrial enterprises.

### Institutional (FLUCCS 1700)

Educational, religious, health and military facilities are typical components of this category. This code includes all buildings, grounds, and parking lots associated with such facilities.

### Parks and Zoos (FLUCCS 1850)

Recreational area consisting of parks or zoos, physical structure indicates that active user-oriented recreation occurs within these areas.

### Herbaceous Upland (Non-Forested) (FLUCCS 3100)

Upland prairie grasses which occur on non-hydric soils but may be occasionally inundated by water. These grasslands are generally treeless with a variety of vegetation types dominated by grasses, sedges, rushes, and other herbs including wiregrass (*Aristida stricta*). Saw palmetto (*Serenoa repens*) may be present.

### Upland Coniferous Forest (FLUCCS 4100)

This category includes any natural forest stand whose canopy is at least 66 percent dominated by coniferous species is classified as coniferous forest.

### Pine Mesic Oak (FLUCCS 4140)

On moister sites, slash pine (*Pinus elliottii*), longleaf pine (*Pinus palustris*), and loblolly pine (*Pinus taeda*) grow in strong association with a wide variety of mesic oaks and other hardwood species. Southern red oak (*Quercus falcata*) water oak (*Quercus nigra*), white oak (*Quercus alba*), and laurel oak (*Quercus*



*laurifolia*) in addition to hickories (*Carya* spp.), sweetgum (*Liquidambar styraciflua*) and dogwood (*Cornus* spp.) commonly grow alongside these pine species under mesic conditions. Gallberry (*Ilex gabra*), wax myrtle (*Morella cerifera*), and saw palmetto are common understory species.

#### Upland Hardwood Forests (FLUCCS 4200)

This classification has a crown canopy with at least 66 percent dominance by hardwood tree species. This class is reserved for naturally occurring stands.

#### Upland Mixed Coniferous / Hardwood (FLUCCS 4340)

This class is reserved for those forested areas in which neither upland conifers nor hardwoods achieve a 66 percent crown canopy dominance.

#### Streams and Waterways (FLUCCS 5100)

This category includes rivers, creeks, canals and other linear water bodies. The streams and waterways within the study area are associated with the Little Wekiva River.

#### Lakes (FLUCCS 5200)

This FLUCCS code includes extensive inland waterbodies; it does not include reservoirs). Lake size may vary from less than 10 acres to larger than 500 acres.

#### Reservoirs (FLUCCS 5300)

Reservoirs are artificial impoundments of water. They are used for irrigation, flood control, municipal and rural water supplies, recreation and hydroelectric power generation. Dams, levees, other water control structures or the excavation itself usually will be evident.

The reservoirs within the study area consist primarily of existing stormwater management facilities with control structures.

#### Wetland Forested Mix (FLUCCS 6300)

This category includes mixed wetland forest communities in which neither hardwoods nor conifers achieves a 66 percent dominance of the crown canopy composition.

#### Freshwater Marshes (FLUCCS 6410)

The communities in this category are characterized by having one or more of the following species predominate: sawgrass (*Cladium jamaicense*), cattail (*Typha* spp.), arrowhead (*Sagittaria lancifolia*), maidencane (*Amphicarpum hemitomon*), buttonbush (*Cephalanthus occidentalis*), cordgrass (*Spartina* spp.), giant cutgrass (*Zizaniopsis miliacea*), switchgrass (*Panicum virgatum*), bulrush (*Schoenoplectus* spp.), and needle rush (*Juncus roemerianus*).

#### Emergent Aquatic Vegetation (FLUCCS 6440)

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 classification includes both native and non-native emergent vegetation.

#### Mixed Scrub-Shrub Wetland (FLUCCS 6460)

This community type is associated with topographic depressions and poorly drained soils. Shrubs dominate these wetlands.



Disturbed Land (FLUCCS 7400)

Disturbed lands are those areas which have been changed due primarily to human activities other than mining. In Florida, these areas may be rather extensive and often appear outside of urban areas.

Roads and Highways (FLUCCS 8140)

This category is a subset of transportation which focuses on roads and highways. This category includes road and highways that exceed 100 feet in width over long segments and have four or more lanes and median strips.

Electrical Power Transmission Lines (FLUCCS 8320)

This is a utility consisting of electrical power transmission lines.

Surface Water Collection Basins (FLUCCS 8370)

Within the project area these are lands surrounding stormwater management facilities with control structures. These are upland areas consisting of mowed grasses and other ruderal vegetation. They are typically maintained for access and fenced to preclude access.



# **APPENDIX C**

## **Representative Habitat Photographs**





Representative Collection Basin



Representative Stormwater Pond

## Appendix C: Representative Photographs

Central Florida Expressway

State Road 414 Expressway Extension

Project Development and Environment Study





Representative Forested and Non-Forested Wetland



Lake Bosse





Little Wekiva Canal

## Appendix C: Representative Photographs

Central Florida Expressway

State Road 414 Expressway Extension

Project Development and Environment Study



# **APPENDIX D**

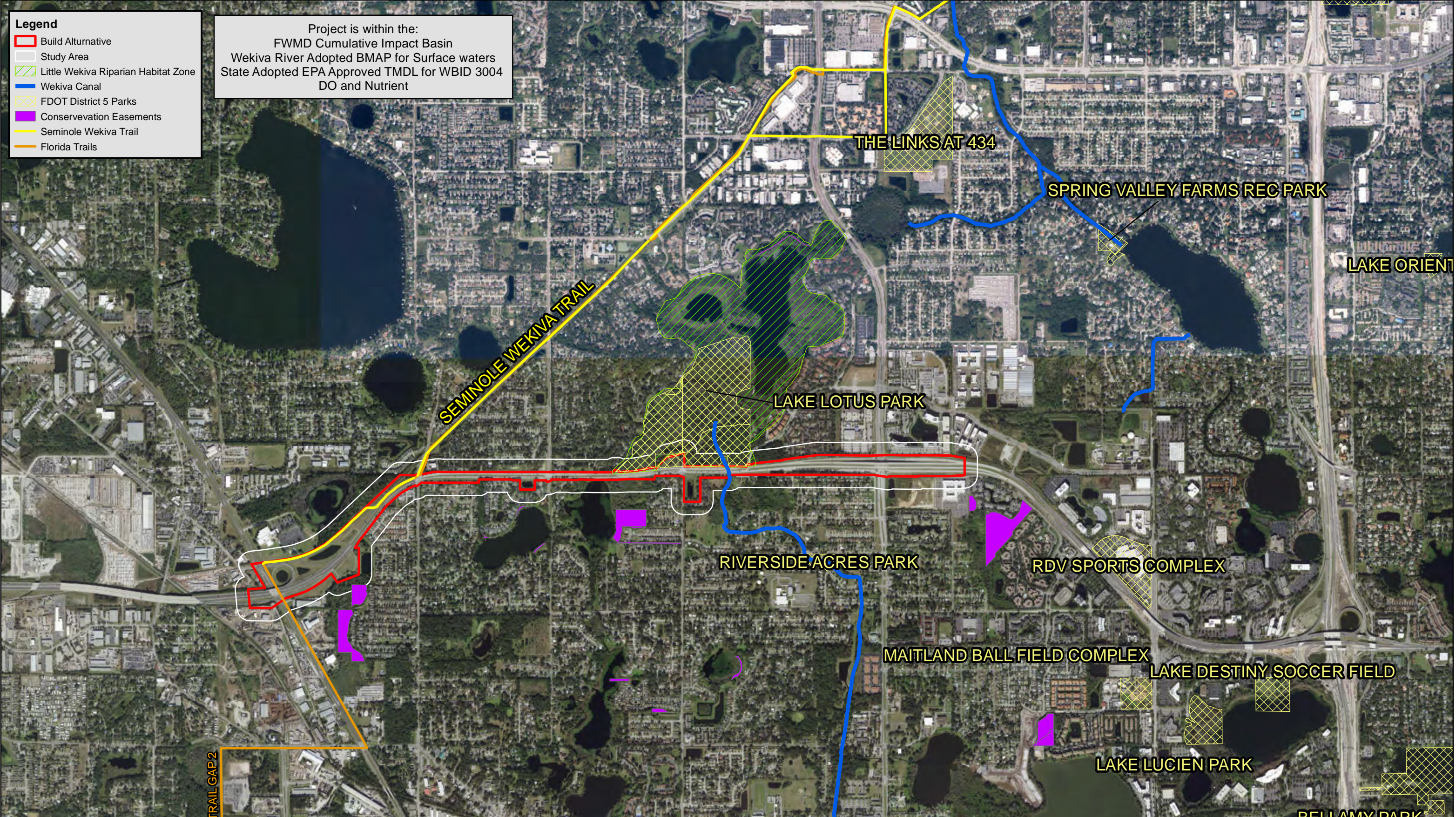
## **Project Study Area Parks and Conservation Lands**



**Legend**

- Build Alternative
- Study Area
- Little Wekiva Riparian Habitat Zone
- Wekiva Canal
- FDOT District 5 Parks
- Conservation Easements
- Seminole Wekiva Trail
- Florida Trails

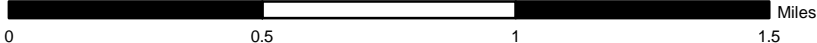
Project is within the:  
FWMD Cumulative Impact Basin  
Wekiva River Adopted BMAP for Surface waters  
State Adopted EPA Approved TMDL for WBID 3004  
DO and Nutrient



All data within this map are supplied as is, without warranty. This product has not been prepared for legal, engineering, or survey purposes. Users of this information should review or consult the primary data sources to ascertain the usability of the information.

**Project Study Area Parks and Conservation Lands**

CFX Project Number: 414-227  
Central Florida Expressway  
State Road 414 Expressway Extension  
Project Development and Environment Study  
From US 441 to SR 434  
Orange County and Seminole County, Florida



Data Source:  
- USGS  
- State and County Parks  
- FDEP  
- ESA  
Imagery Source:  
- ESRI  
Coordinate System:  
NAD 1983 Florida  
State Plane West





# **APPENDIX E**

## **Listed Species: Historic Location Data and Field Observations**



Build Alternative

Study Area

Bald Eagle Nest (FWC 1998-2016)

Bald Eagle Nest 330-FT Buffer

Bald Eagle Nest 660-FT Buffer

Florida Black Bear Nuisance 1980-2019

Florida Black Bear Mortality 1984-2019

The project area falls within the USFWS consultation areas of the following protected species:

- Florida scrub-jay

- Everglade snail kite

- Sand skink

The project area falls within the core foraging areas of the following known wood stork colonies:

- Lawne Lake

- Eagle Nest Park

Date: 02/24/2021 Rev: Date: N/A PM: ES GIS Analyst: TCC Map Document: 201909071\_T&E\_Field\_TCC\_20201106.mxd Project Number: 201909071\_T&E\_Field\_TCC\_20201106.pdf Plot Size: 11x17

CENTRAL  
FLORIDA  
EXPRESSWAY  
AUTHORITY

All data within this map are supplied as is, without warranty. This product has not been prepared for legal, engineering, or survey purposes. Users of this information should review or consult the primary data sources to ascertain the usability of the information.

Listed Species: Historic Location Data and Field Observations

Page 1 of 3

CFX Project Number: 414-227

Central Florida Expressway

State Road 414 Expressway Extension

Project Development and Environment Study

From US 441 to SR 434

Orange County and Seminole County, Florida

0

800

1,600

2,400

Feet

Data Source:

- UF

- FNAI

- FWC

- USFWS

Imagery Source:

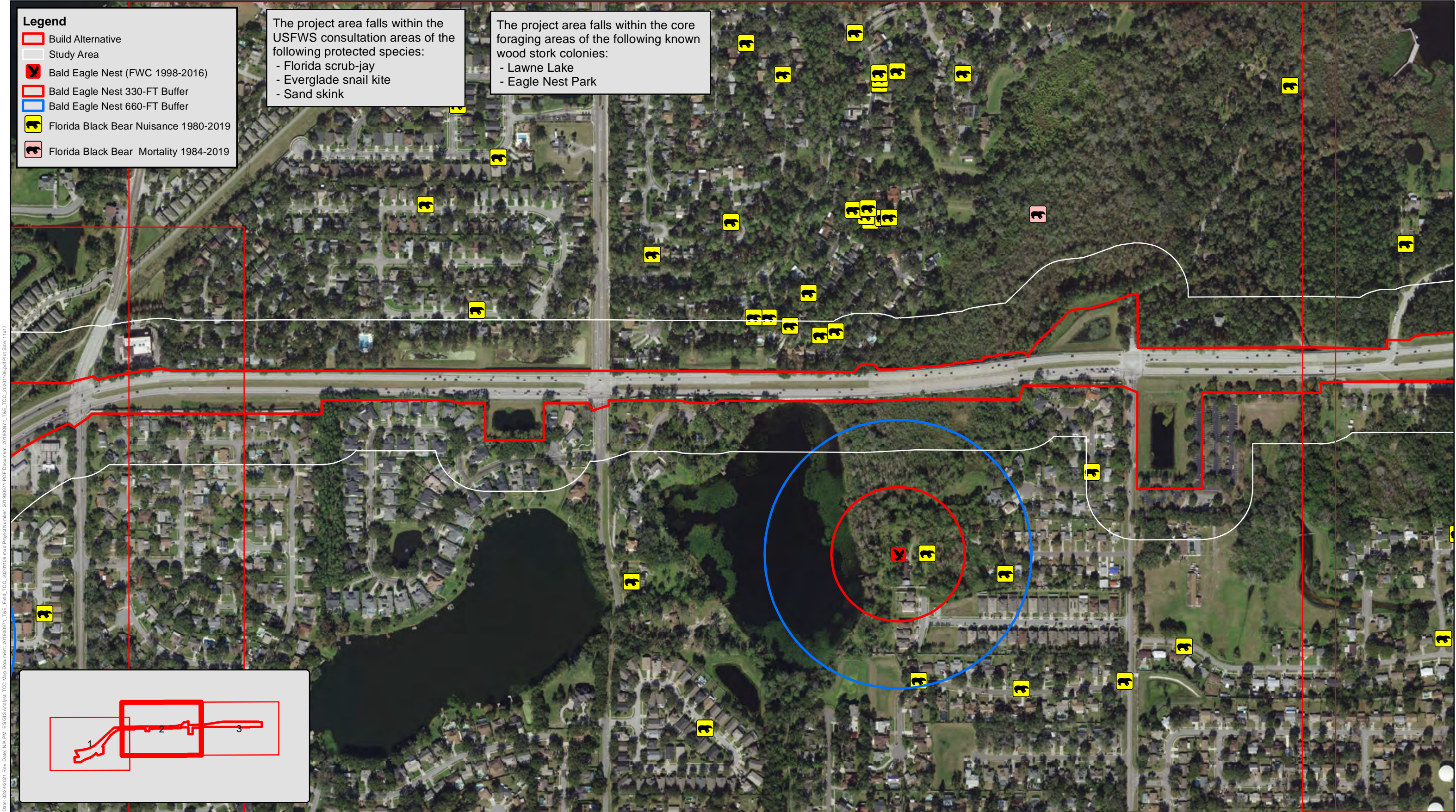
- ESRI

Coordinate System:

NAD 1983 Florida State Plane West

N





Date: 02/24/2021 Rev: Date: N/A PM: ES GIS Analyst: TCC Map Document: TCC Map Document: 201900971\_T&E\_Field\_TCC\_20201106.mxd Plot Size: 11x17

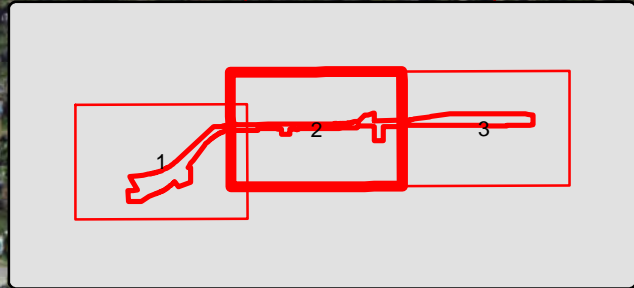
- Legend**
- Build Alternative
  - Study Area
  - Bald Eagle Nest (FWC 1998-2016)
  - Bald Eagle Nest 330-FT Buffer
  - Bald Eagle Nest 660-FT Buffer
  - Florida Black Bear Nuisance 1980-2019
  - Florida Black Bear Mortality 1984-2019

The project area falls within the USFWS consultation areas of the following protected species:

- Florida scrub-jay
- Everglade snail kite
- Sand skink

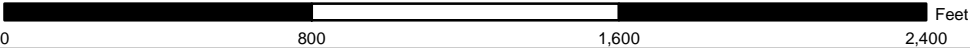
The project area falls within the core foraging areas of the following known wood stork colonies:

- Lawne Lake
- Eagle Nest Park



**Listed Species: Historic Location Data and Field Observations**

Page 2 of 3  
CFX Project Number: 414-227  
Central Florida Expressway  
State Road 414 Expressway Extension  
Project Development and Environment Study  
From US 441 to SR 434  
Orange County and Seminole County, Florida








All data within this map are supplied as is, without warranty. This product has not been prepared for legal, engineering, or survey purposes. Users of this information should review or consult the primary data sources to ascertain the usability of the information.

Data Source:  
- UF  
- FNAI  
- FWC  
- USFWS  
Imagery Source:  
- ESRI  
Coordinate System:  
NAD 1983 Florida  
State Plane West





**Legend**

-  Build Alternative
-  Study Area
-  Florida Black Bear Nuisance 1980-2019
-  Florida Black Bear Road Mortality 1976-2019
-  Florida Black Bear Mortality 1984-2019

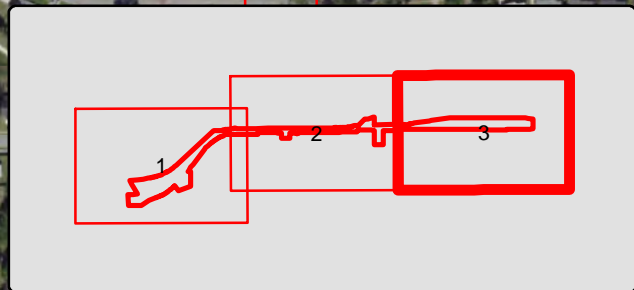
The project area falls within the USFWS consultation areas of the following protected species:

- Florida scrub-jay
- Everglade snail kite
- Sand skink

The project area falls within the core foraging areas of the following known wood stork colonies:

- Lawne Lake
- Eagle Nest Park

Date: 02/24/2021 Rev: Date: N/A PM: ES GIS Analyst: TCC Map Document: 201900971\_T&E\_Field\_TCC\_20201108.mxd Project Number: 201900971 PDF Document: 201900971\_T&E\_TCC\_20201108.pdf Plot Size: 11x17

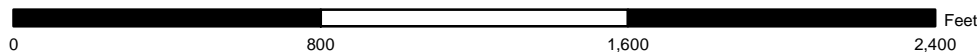


**Listed Species: Historic Location Data and Field Observations**

Page 3 of 3  
CFX Project Number: 414-227  
Central Florida Expressway  
State Road 414 Expressway Extension  
Project Development and Environment Study  
From US 441 to SR 434  
Orange County and Seminole County, Florida



All data within this map are supplied as is, without warranty. This product has not been prepared for legal, engineering, or survey purposes. Users of this information should review or consult the primary data sources to ascertain the usability of the information.



Data Source:  
- UF  
- FNAI  
- FWC  
- USFWS  
Imagery Source:  
- ESRI  
Coordinate System:  
NAD 1983 Florida  
State Plane West





# **APPENDIX F**

## **Standard Protection Measures for the Eastern Indigo Snake**



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

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

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

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

### **POSTER INFORMATION**

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

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

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

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



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

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

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

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

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

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

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

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

**North Florida Field Office – (904) 731-3336**

**Panama City Field Office – (850) 769-0552**

**South Florida Field Office – (772) 562-3909**



## **PRE-CONSTRUCTION ACTIVITIES**

1. The applicant or designated agent will post educational posters in the construction office and throughout the construction site, including any access roads. The posters must be clearly visible to all construction staff. A sample poster is attached.
2. Prior to the onset of construction activities, the applicant/designated agent will conduct a meeting with all construction staff (annually for multi-year projects) to discuss identification of the snake, its protected status, what to do if a snake is observed within the project area, and applicable penalties that may be imposed if state and/or federal regulations are violated. An educational brochure including color photographs of the snake will be given to each staff member in attendance and additional copies will be provided to the construction superintendent to make available in the onsite construction office (a final brochure for Plan compliance, to be printed double-sided on 8.5" x 11" paper and then properly folded, is attached). Photos of eastern indigo snakes may be accessed on USFWS and/or FWC websites.
3. Construction staff will be informed that in the event that an eastern indigo snake (live or dead) is observed on the project site during construction activities, all such activities are to cease until the established procedures are implemented according to the Plan, which includes notification of the appropriate USFWS Field Office. The contact information for the USFWS is provided on the referenced posters and brochures.

## **DURING CONSTRUCTION ACTIVITIES**

1. During initial site clearing activities, an onsite observer may be utilized to determine whether habitat conditions suggest a reasonable probability of an eastern indigo snake sighting (example: discovery of snake sheds, tracks, lots of refugia and cavities present in the area of clearing activities, and presence of gopher tortoises and burrows).
2. If an eastern indigo snake is discovered during gopher tortoise relocation activities (i.e. burrow excavation), the USFWS shall be contacted within one business day to obtain further guidance which may result in further project consultation.
3. Periodically during construction activities, the applicant's designated agent should visit the project area to observe the condition of the posters and Plan materials, and replace them as needed. Construction personnel should be reminded of the instructions (above) as to what is expected if any eastern indigo snakes are seen.

## **POST CONSTRUCTION ACTIVITIES**

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



# **APPENDIX G**

## **Wetland Maps**



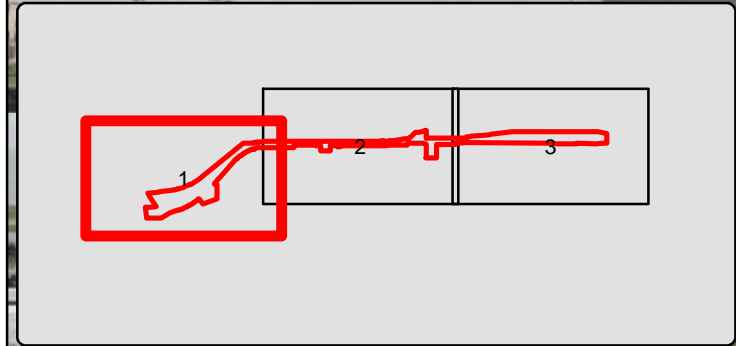
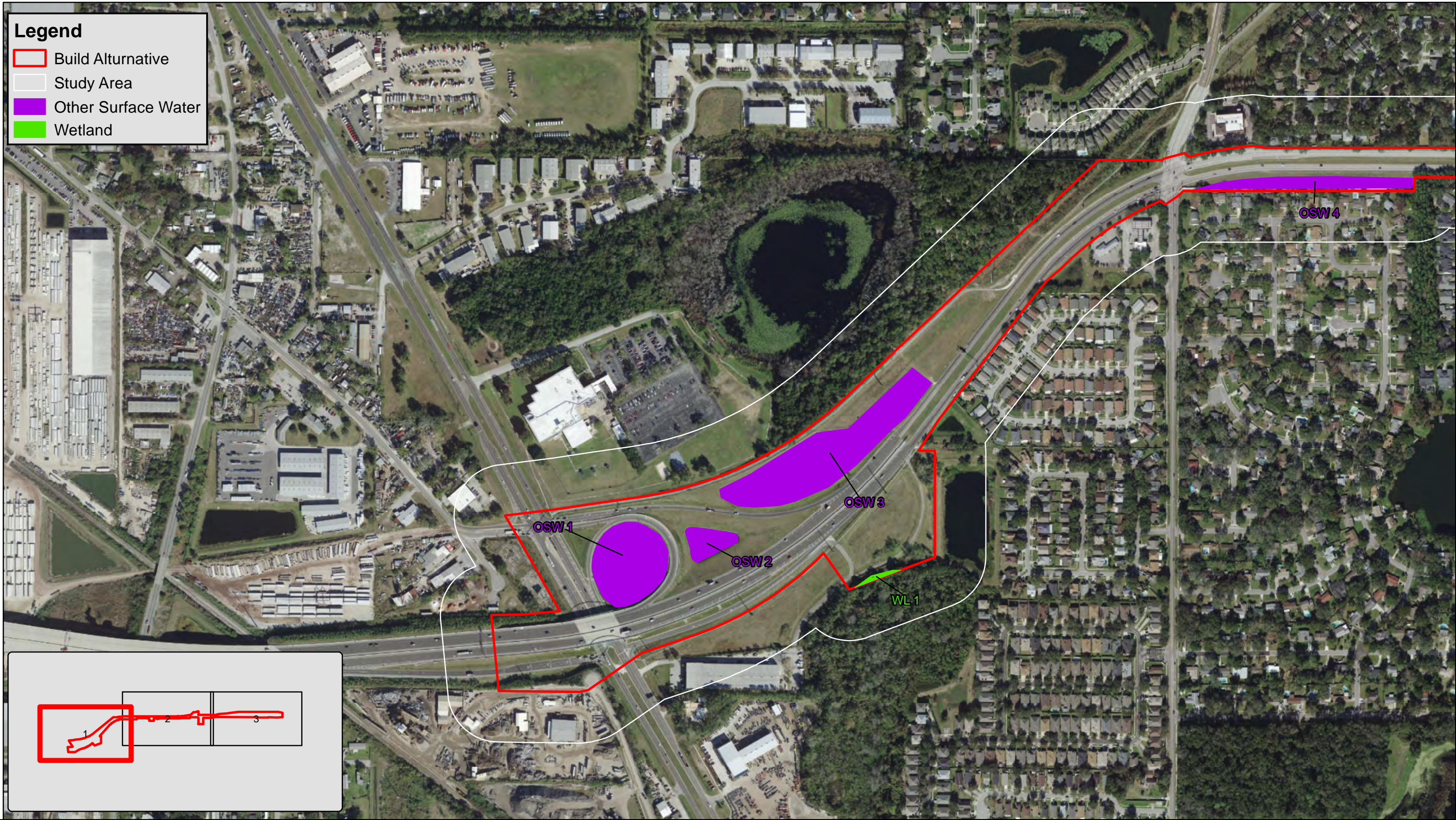
Legend

Build Alternatve

Study Area

Other Surface Water

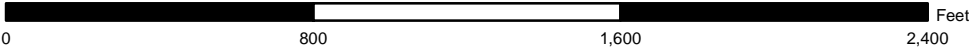
Wetland



Study Area Wetland and Surface Water Location

Page 1 of 3

CFX Project Number: 414-227  
Central Florida Expressway  
State Road 414 Expressway Extension  
Project Development and Environment Study  
From US 441 to SR 434  
Orange County and Seminole County, Florida



All data within this map are supplied as is, without warranty. This product has not been prepared for legal, engineering, or survey purposes. Users of this information should review or consult the primary data sources to ascertain the usability of the information.

Data Source:  
- FLUCCS  
- ESA  
Imagery Source:  
- ESRI

Coordinate System:  
NAD 1983 Florida  
State Plane West





Legend

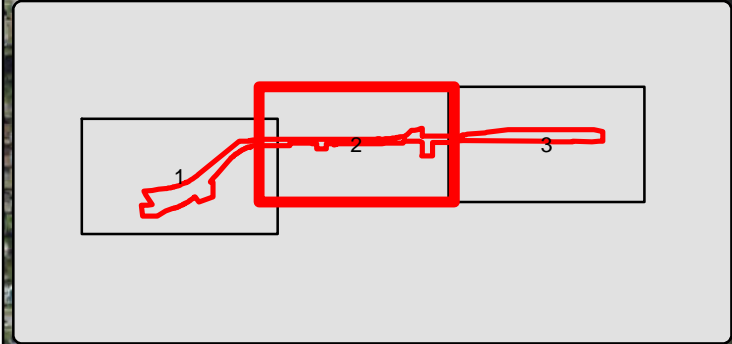
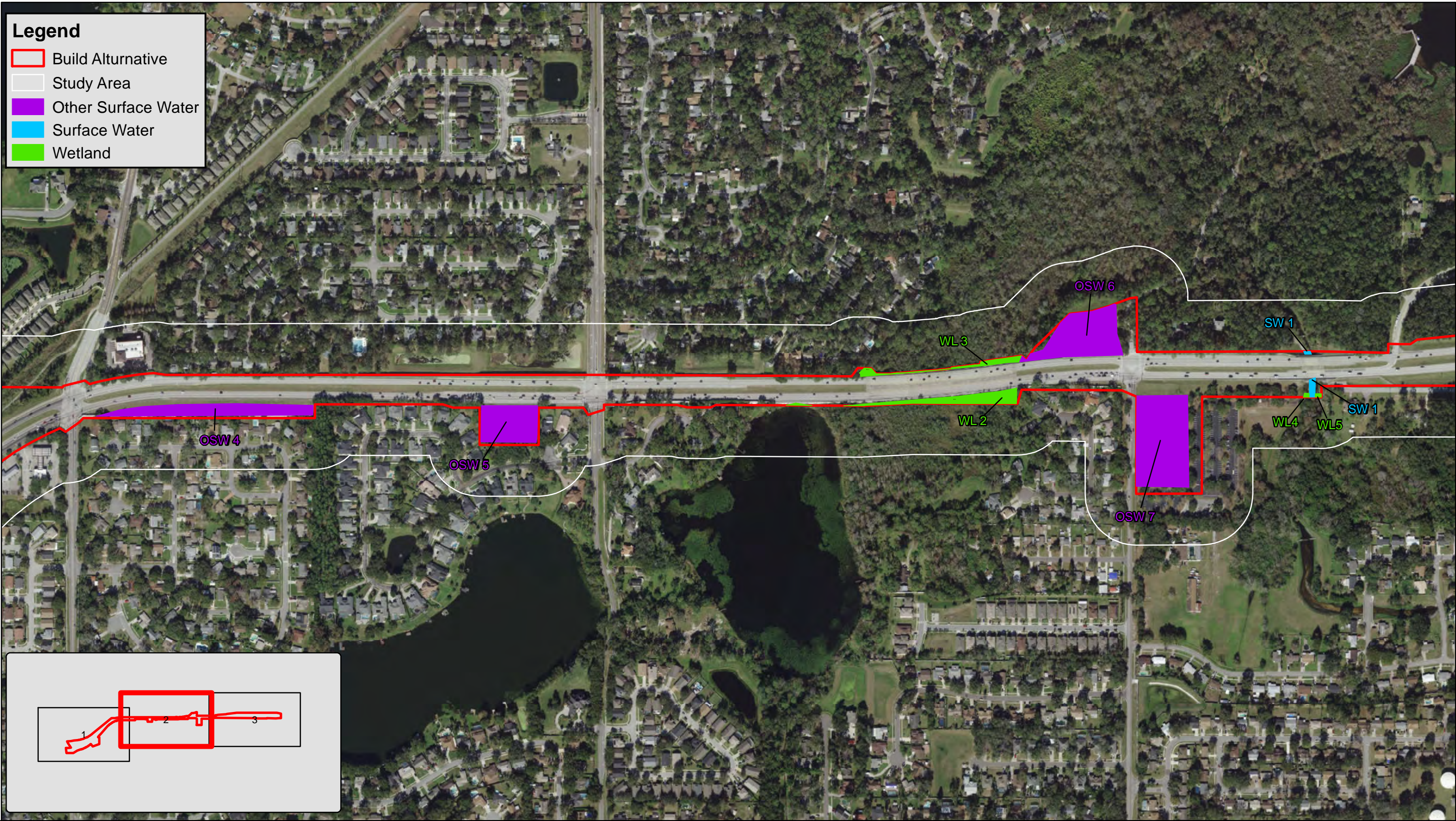
Build Alternative

Study Area

Other Surface Water

Surface Water

Wetland





Legend

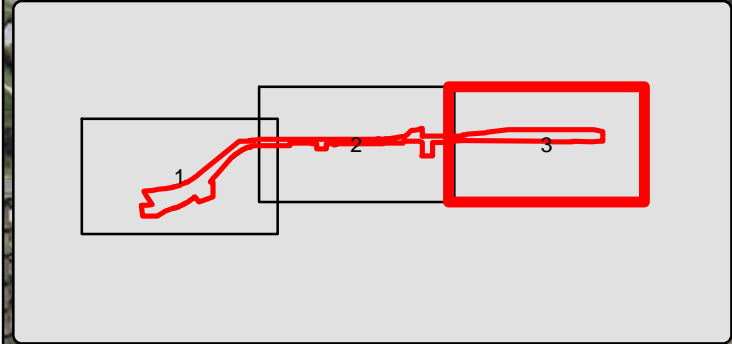
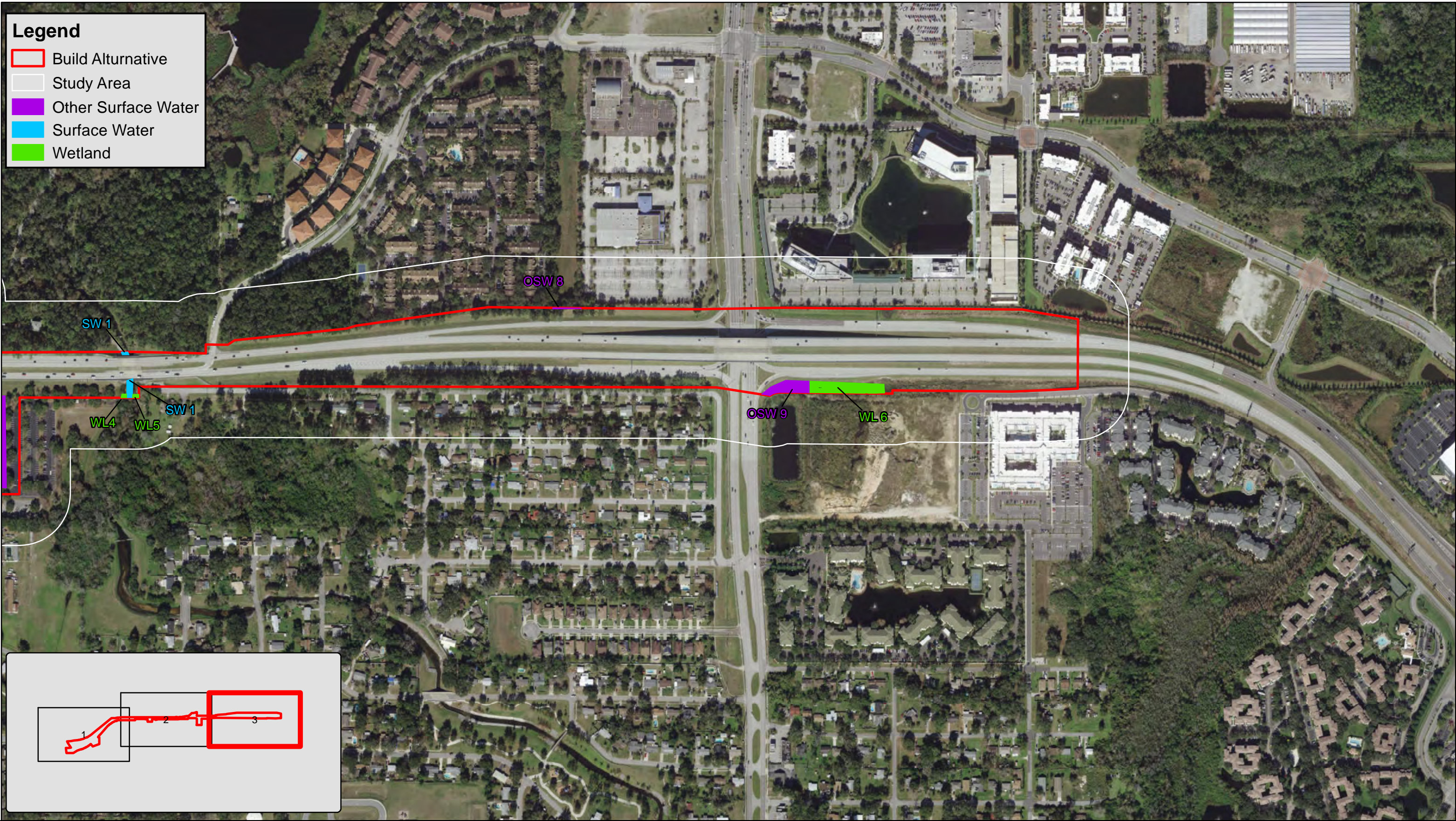
Build Alternative

Study Area

Other Surface Water

Surface Water

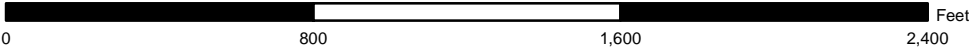
Wetland



Study Area Wetland and Surface Water Location

Page 3 of 3

CFX Project Number: 414-227  
Central Florida Expressway  
State Road 414 Expressway Extension  
Project Development and Environment Study  
From US 441 to SR 434  
Orange County and Seminole County, Florida



All data within this map are supplied as is, without warranty. This product has not been prepared for legal, engineering, or survey purposes. Users of this information should review or consult the primary data sources to ascertain the usability of the information.

Data Source:  
- FLUCCS  
- ESA  
Imagery Source:  
- ESRI

Coordinate System:  
NAD 1983 Florida  
State Plane West

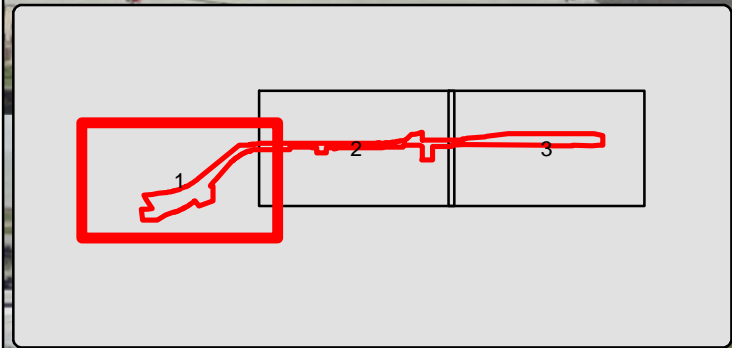




Legend

Build Alternative

Wetland



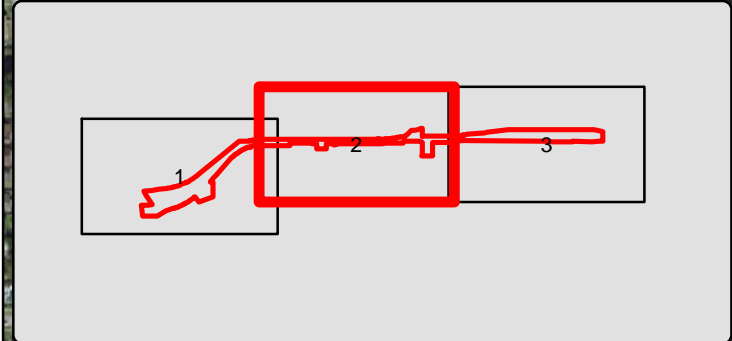
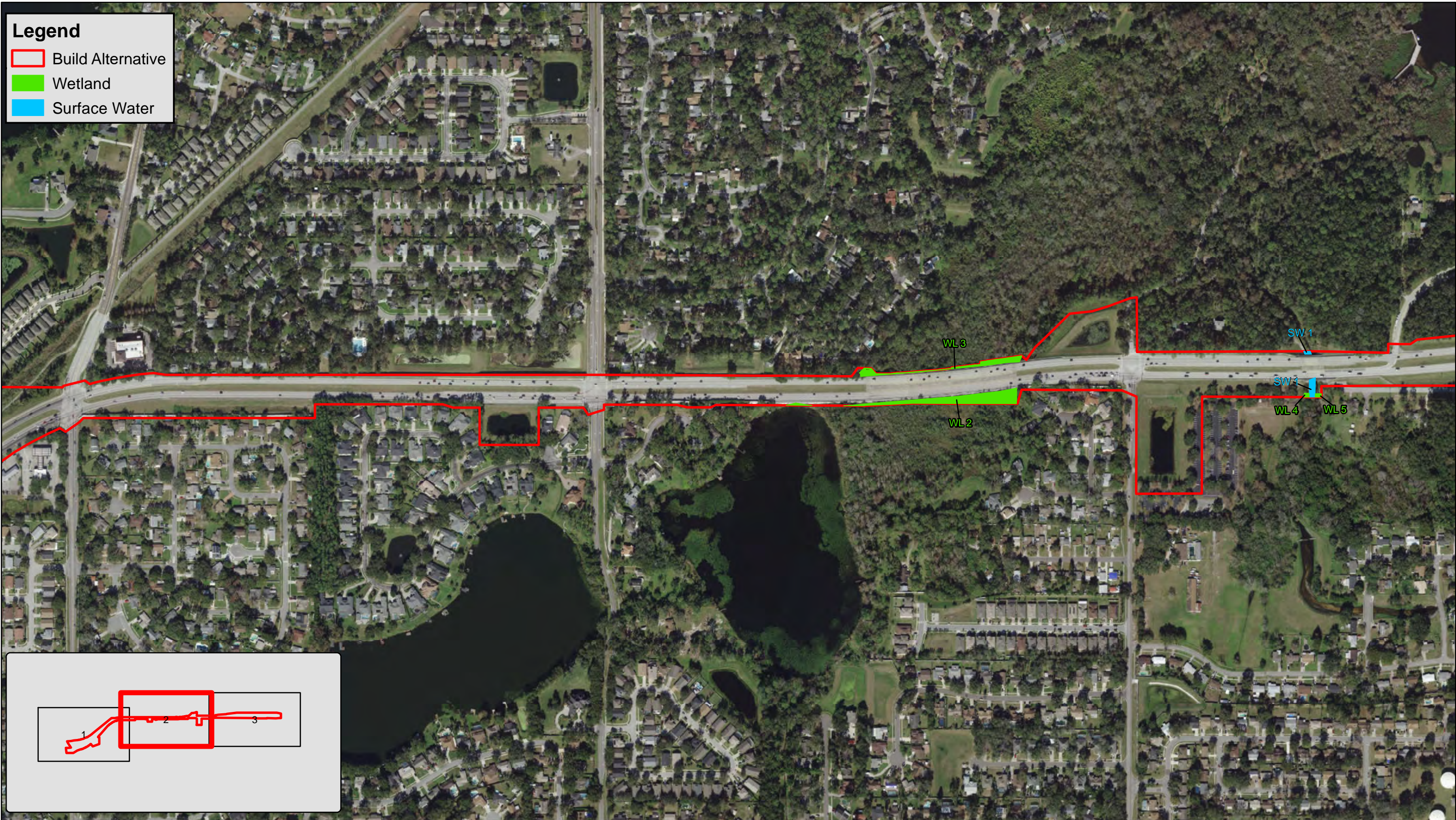


Legend

Build Alternative

Wetland

Surface Water





Legend

Build Alternative

Wetland

No Impact Proposed

Surface Water

