

Natural Resources Evaluation

Interstate 95 Improvements from Interstate 295 to State Road 202  
FIN: 435577-1

Duval County, Florida

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

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Federally-listed and candidate species and state-listed species – Duval County

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## 1.0 EXECUTIVE SUMMARY

The Florida Department of Transportation, District 2 (FDOT) proposes improvements to Interstate 95 (I-95) from Interstate 295 (I-295) to State Road (SR) 202 (J. Turner Butler Boulevard). Proposed improvements include adding travel lanes, new stormwater ponds, and constructing associated culvert extensions, bridge alterations, and interchange alterations.

A total of 34 species that are federally-listed, candidates for federal listing, and/or state-listed were determined to have no probability of occurrence in the project study area and will not be affected by the project. A total of 39 state-listed plant species were determined to have a low probability of occurrence in the project study area, and four were determined to have a moderate probability of occurrence. **No adverse effect is anticipated** for these species. Four state-listed animal species (pine snake, tricolored heron, roseate spoonbill, and Southeastern American kestrel) were determined to have a low probability of occurrence in the project study area. The state-listed gopher tortoise also has a low probability of occurrence. One state-listed wading bird (little blue heron) was determined to have a moderate probability of occurrence. **No adverse effect is anticipated** for any of these species. The federally-listed Eastern indigo snake was determined to have a low probability of occurrence in the project study area. The wood stork was determined to have a moderate probability of occurrence. Any impacts to this species' foraging habitat will be offset by the project's wetland mitigation. The project **may affect, but is not likely to adversely affect**, these federally-listed species. Continued agency coordination will occur during permitting to address final determination of impacts, implementation of protection measures, and mitigation if necessary. The project will not impact Essential Fish Habitat (EFH); therefore, no EFH mitigation will be required.

A total of 30.38 acres of wetlands are estimated to occur within the project study area. At this time, it is assumed that all of these wetlands may be permanently impacted, and that all impacts would require mitigation. Impacts will be incurred to wetlands in St Johns River Water Management District (SJRWMD) Drainage Basins 4 and 5. It is estimated that 3.97 mitigation credits will be required for impacts to wetlands in Basin 4, and 15.44 credits will be required for impacts to wetlands in Basin 5. Wetland impact acreages and mitigation requirements are subject to change and will be finalized during the permitting process. FDOT will provide appropriate mitigation to satisfy final mitigation needs. A number of existing stormwater ponds and ditches (both considered surface waters) occur within the project study area. At this time, it is assumed that impacts to these surface waters will not require mitigation.

Portions of three recorded conservation easements (CEs) occur within the project study area. The first CE occurs over Pond Site D-3, directly north of an existing stormwater pond that is associated with the Suddath Relocation Systems of Jacksonville, Inc. industrial building and does not have an associated SJRWMD permit number. The second CE is located on the western side of I-95, between the Baymeadows Road and Philips Highway interchanges. This CE is associated with SJRWMD Permit No. 127636-2 for the establishment of the Lower St. Johns Mitigation Bank. Pond Sites E-2 and D-1 lie within the boundary of the mitigation bank and associated CE. The third CE is located in the southern portion of the project study area adjacent to the I-95 right-of-way (ROW), at the southeastern intersection of the CSX Rail line and I-95 and is associated with SJRWMD Permit No. 4-031-91736-2 for the Avenues Walk commercial development project. Other CEs may occur within the project study area. Additional work, including boundary location by a licensed surveyor and/or legal research into the status of easements, will be necessary to determine if recorded conservation easements will be impacted by the proposed project.

FDOT will adhere to the following implementation measures and project commitments.

**Implementation Measures:**

- FDOT will conduct surveys for protected plants and animals within the project area as part of project permitting.
- If state or federally-listed plants or wildlife are identified within the project area, FDOT will coordinate with the appropriate agency.
- Suitable habitat for gopher tortoises within the project study area will be formally surveyed within 90 days of construction, and any affected tortoises will be relocated in accordance with Florida Fish and Wildlife Conservation Commission (FWC) regulations.
- FDOT will inspect all bridges and culverts within the project area for the presence of bats prior to construction.

**Project Commitments:**

- FDOT will implement the U.S. Fish and Wildlife Service's (FWS) *Standard Protection Measures for the Eastern Indigo Snake* during project construction.
- If bats are present, FDOT will implement SP 0070104-11 (Bats in Bridges) during project construction.

## **2.0 PROJECT OVERVIEW**

FDOT is conducting a National Environmental Policy Act (NEPA) evaluation for improvements to a 5.2-mile section of I-95 from I-295 to SR 202. Proposed improvements include adding travel lanes, new stormwater ponds, and constructing associated culvert extensions, bridge alterations, and interchange alterations. This NEPA evaluation includes the preparation of a Natural Resources Evaluation (NRE) as part of the Project Development and Environment (PD&E) study.

The project study area includes the evaluation of four (4) new stormwater pond site alternatives located outside of the existing road footprint, and five (5) new stormwater pond site alternatives located within the existing Philips Highway interchange. See **Exhibit 1 (Appendix A)** for a depiction of the complete project study area.

The purpose of this NRE is to document the potential impacts of the proposed project on federally-listed and candidate species, state-listed species, wetlands, and EFH.

## **3.0 EXISTING CONDITIONS**

Prior to the initiation of field work, existing conditions were evaluated utilizing various resources, including, but not limited to, recent aerial photographs from ArcGIS Online and soil survey mapping published by the U.S. Department of Agriculture - Natural Resources Conservation Service (USDA-NRCS). The project study area was defined as the proposed limits of construction (LOC) of the project provided by FDOT. Field investigations were conducted on July 1, 2, 7, 8, and 14, 2020. The boundaries of jurisdictional wetlands within the project study area were delineated in accordance with Chapter 62-340, Florida Administrative Code (F.A.C.), and the U.S. Army Corps of Engineers' (USACE) 1987 Manual and its subsequent addendums. The boundaries of other surface waters (upland-cut ditches and existing stormwater ponds) were not delineated in the field but were estimated using aerial interpretation and Digital Elevation Maps (DEMs). Because none

of the wetlands or other surface waters have been surveyed or verified by the regulatory agencies, all wetland and other surface water boundaries and acreages given in this report are considered estimates and will be finalized during the permitting process. The habitat types (land cover / land use) which occur within the project study area, based on our evaluation, are depicted on **Exhibit 2 (Appendix A)** and described in detail below.

### **3.1 Special Designations**

#### *3.1.1 Essential Fish Habitat*

The Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), established procedures designed to identify, conserve, and enhance EFH for those species regulated under a Federal fisheries management plan (FMP).

EFH is defined in the MSFCMA as "...those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." 1997 NMFS rules further clarify EFH with the following definitions:

**Waters** – aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate;

**Substrate** – sediment, hard bottom, structures underlying the waters, and associated biological communities;

**Necessary** – the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and

**Spawning, breeding, feeding, or growth to maturity** – stages representing a species' full life cycle.

The project study area was evaluated for impacts to EFH in accordance with FDOT PD&E Manual Part 2, Chapter 17, Essential Fish Habitat (2020). In inland areas, it is generally understood that EFH is limited to portions of waterways that are subject to the ebb and flow of the tide, regardless of their salinity. The majority of wetlands south of Philips Highway flow into Julington Creek, while wetlands north of that point flow north into Pottsburg Creek. The wetlands associated with both Julington Creek and Pottsburg Creek are not tidally influenced within the project study area. Therefore, the project study area contains no waterways classified as EFH. See **Section 6** for more information.

#### *3.1.2 Florida Aquatic Preserves*

The project does not occur within an area designated as an Aquatic Preserve. See **Exhibit 3 (Appendix A)**.

#### *3.1.3 National Wildlife Refuge System*

No portion of the project is located in a National Wildlife Refuge. See **Exhibit 3 (Appendix A)**.

#### *3.1.4 Outstanding Florida Waters*

The project does not occur within an area designated as an Outstanding Florida Water (OFW). See **Exhibit 3 (Appendix A)**.

### 3.1.5 Critical Habitat

Critical Habitat has been designated for three species in the coastal Duval County region (**Exhibit 3; Appendix A**): North Atlantic right whale (*Eubalaena glacialis*), piping plover (*Charadrius melodus*), and West Indian manatee (*Trichechus manatus*). The project will not affect Critical Habitat for any of these species. **Section 4.2** of this report provides additional information regarding Critical Habitats.

### 3.1.6 Wild and Scenic Rivers and Rivers Listed on the National Rivers Inventory

In Florida, there are two designated rivers under the Wild and Scenic Rivers Act of 1968, as amended: the Loxahatchee River and the Wekiva River. Neither of the designated rivers or any portion of their watersheds are located in Duval County. The project is not located near any rivers listed on the National Rivers Inventory (NRI). Therefore, the project will not affect Wild and Scenic Rivers or rivers listed on the NRI.

### 3.1.7 Habitat Areas of Particular Concern

Information regarding Habitat Areas of Particular Concern (HAPCs) is obtained using the National Marine Fisheries Service's (NMFS) online EFH Mapper Tool. This tool is only intended for areas waterward of the coastline; therefore, this tool is not appropriate for this project. See **Section 6** of this report for more details.

### 3.1.8 Conservation Easements

Recorded CEs may restrict utilization of an encumbered area. If a CE is in place, it may be necessary to release or amend the easement in order to utilize encumbered property. For this reason, a CE is considered a special designation that is important to consider in the planning phases of a project. CEs may be placed over wetlands and/or uplands and are more likely to occur on portions of proposed roadway projects where additional ROW is required for roadway widening or excavation of new stormwater ponds. Generally, existing roadway and pond ROWs are free from regulatory encumbrances.

A preliminary search for recorded CEs that may fall within the project study area was undertaken using Geographic Information System (GIS) data available online from SJRWMD. Note that this search may not identify all CEs that may be affected by this project. Based on the aforementioned SJRWMD data, it appears that portions of three CEs fall within the project study area (**Exhibit 4; Appendix A**). The first CE that appears to fall within the project study area occurs over Pond Site D-3, directly north of an existing stormwater pond associated with the Suddath Relocation Systems of Jacksonville, Inc. industrial building and does not have an associated SJRWMD permit number. This CE was recorded on May 5, 1999, in Duval County Official Records Book 7844, Page 1033. The second CE is located on the western side of I-95, between the Baymeadows Road and Philips Highway interchanges. This CE was recorded on August 6, 2013 (rerecorded October 23, 2013) in Duval County Official Records Book 16575, Page 1204 and is associated with SJRWMD Permit No. 127636-2 for the establishment of the Lower St. Johns Mitigation Bank. Pond Sites E-2 and D-1 lie within the boundary of the mitigation bank and its CE. The third CE is located in the southern portion of the project study area adjacent to the I-95 ROW, at the southeastern intersection of the CSX Rail line and I-95. This CE was recorded on October 15, 2007, in Duval County Official Records Book 14347, Page 2259 and is associated with SJRWMD Permit No. 4-031-91736-2 for the Avenues Walk commercial development project. This easement serves as mitigation for the aforementioned project.

The boundaries of the CEs depicted on **Exhibit 4** are approximate and must be located by a licensed surveyor in order to fully determine if and where they fall within the project study area. If CEs are verified to occur over parts of the project study area, further research will be necessary to determine their status and what implications they will have on the project. If CEs are to be released as a part of the proposed action, additional mitigation costs will be required to recover the cost of removing a CE over encumbered wetlands.

### 3.2 Land Cover/Use

All habitats and land uses within the project study area were inspected and classified utilizing FDOT's *Florida Land Use, Cover and Forms Classification System* (FLUCFCS, 1999). Wetlands and waters were classified using both FLUCFCS and the *Wetlands and Deepwater Habitats Classification System* (the "Cowardin System", Cowardin et al, 1979). Land use classifications mapped within the project study area are described below, and their approximate extents are depicted on **Exhibit 2 (Appendix A)**.

#### Uplands

##### Pine Flatwoods (FLUCFCS 411)

Several small remnant areas of pine flatwoods occur in the northern portions of the I-95 corridor. These areas are dominated by slash pine (*Pinus elliotii*), loblolly pine (*P. taeda*), saw palmetto (*Serenoa repens*), gallberry (*Ilex glabra*), and bracken fern (*Pteridium aquilinum*).

##### Longleaf Pine – Xeric Oak (FLUCFCS 412)

One small (0.24-acre) area classified of this habitat type occurs within the I-95 ROW, just north of the Southside Boulevard interchange. This area is dominated by longleaf pine (*Pinus palustris*), turkey oak (*Quercus laevis*), saw palmetto, bracken fern, muscadine grape (*Vitis rotundifolia*), and live oak (*Q. virginiana*). This area is overgrown and has not been subject to the natural fire regime that is necessary to maintain high quality natural sandhill habitats.

##### Pine – Mesic Oak (FLUCFCS 414)

The project study area contains several mixed forested areas that while not xeric, are somewhat drier in nature. They are dominated by laurel oak (*Q. laurifolia*), live oak, slash pine, longleaf pine, saw palmetto, and bracken fern.

##### Live Oak (FLUCFCS 427)

This habitat type was identified in patches along the eastern side of the I-95 ROW between the intersection of Western Way and Western Lake Drive and where the Southside Boulevard Ramp passes over I-95. These areas are dominated by live oak, laurel oak, saw palmetto, and muscadine grape.

##### Hardwood – Coniferous Mixed (FLUCFCS 434)

Most of the forested upland areas in the project study area are classified as this habitat type. They are mesic in nature and often occur near forested wetland habitats. These areas are dominated by live oak, laurel oak, water oak (*Quercus nigra*), southern magnolia (*Magnolia grandiflora*), pignut hickory (*Carya glabra*), red maple (*Acer rubrum*), Chinese tallow (*Triadica sebifera*), and Virginia chain fern (*Woodwardia virginica*).



#### Mixed Hardwoods (FLUCFCS 438)

This habitat type is found in one area along the western side of the I-95 ROW, directly adjacent to a Quality Inn & Suites and Sonesta ES Suites hotel. Dominant species within this community type include live oak, laurel oak, red maple, Virginia chain fern, and bracken fern.

#### Railroads (FLUCFCS 812)

I-95 passes over a CSX railroad track just south of Philips Highway. The railroad property contains shallow and highly vegetated ditches that are classified separately.

#### Roads and Highways (FLUCFCS 814)

This classification describes the majority of the project study area and consists of paved and mowed areas of the existing I-95 ROW, interchanges, overpasses, swales, and shallow predominantly dry stormwater retention areas. Small areas of forested uplands that occur within the interchange are also included in this land use. Wetlands, larger forested uplands within the interchange, ditches, and deeper frequently or perennially ponded stormwater ponds are classified separately.

### **Wetlands and Other Surface Waters**

#### Streams and Waterways (FLUCFCS 510)

##### Cowardin R3UB3x (Riverine, Upper Perennial, Unconsolidated Bottom, Mud, Excavated)

This stream habitat type was observed in two places within the project study area, just north of Pond Site E-2 on both sides of I-95. This stream channel runs underneath I-95 and becomes exposed on either side. This channel is part of the upper reaches of the Pottsburg Creek system and flows northeast from the Lower St. Johns Mitigation Bank property on the western side of I-95 towards the Suddath Relocation Systems facility on the eastern side of the highway. The Pottsburg Creek system flows to the north and west and eventually into the St. Johns River.

#### Ditches (FLUCFCS 511)

##### Cowardin R4EMx (Riverine, Intermittent, Emergent, Excavated)

This classification includes upland-cut roadside ditches and other upland-cut ditch segments that occur throughout the project study area. Wetland-cut ditch segments are classified as parts of the wetlands that they abut.

#### Stormwater Ponds (FLUCFCS 530)

##### Cowardin L2UBHx (Lacustrine, Littoral, Unconsolidated Bottom, Permanently Flooded, Excavated)

##### Cowardin L2UBAx (Lacustrine, Littoral, Unconsolidated Bottom, Temporarily Flooded, Excavated)

The project study area contains a number of existing stormwater ponds, both wet and dry. The quantity and type of vegetation in the ponds varies based on the control water level, degree of maintenance, and water residency time. Several of the apparent dry detention areas occur within the infield of the Philips Highway interchange and do not possess clearly defined edges.

#### Stream and Lake Swamps (Bottomland) (FLUCFCS 615)

##### Cowardin PFO1/2 (Palustrine, Forested, Broad-leaved Deciduous / Needle-leaved Deciduous)

This classification pertains to the highest quality and most diverse wetland systems in the project study area. This moderately high-quality wetland is associated with Pottsburg Creek Swamp along both sides of I-95, Pond Site D-3 that is associated with the Suddath Relocation Systems of Jacksonville, Inc. industrial building existing pond, and Julington Creek along either side of I-95. It is dominated by red maple, green ash (*Fraxinus*

*pennsylvanica*), water oak, laurel oak, loblolly pine, bald cypress (*Taxodium distichum*), sweetbay magnolia (*Magnolia virginiana*), sweetgum (*Liquidambar styraciflua*), tulip tree (*Liriodendron tulipifera*), tupelo (*Nyssa biflora*), musclewood (*Carpinus caroliniana*), red buckeye (*Aesculus pavia*), bluestem palm (*Sabal minor*), cinnamon fern (*Osmundastrum cinnamomeum*), and royal fern (*Osmunda regalis*).

#### Mixed Wetland Hardwoods (FLUCFCS 617)

##### Cowardin PFO1 (Palustrine, Forested, Broad-leaved Deciduous)

This classification is used for moderate quality forested systems that have fewer cypress trees and lower vegetative diversity. This moderate wetland type is associated with Pond Site E-2 within the boundary of the mitigation bank and Julington Creek along the western side of I-95. It is dominated by red maple, water oak, laurel oak, pines, sweetbay magnolia, sweetgum, tupelo, wax myrtle (*Morella cerifera*), and cinnamon fern.

#### Wetland Forested Mixed (FLUCFCS 630)

##### Cowardin PFO1/2/4 (Palustrine, Forested, Broad-leaved Deciduous / Needle-leaved Deciduous / Needle-leaved Evergreen)

Areas of low-quality disturbed forested wetlands occur throughout the project study area. These areas generally show signs of partial clearing in the past, invasion by nuisance species, and drainage due to adjacent development. Common species include red maple, loblolly pine, pond pine (*Pinus serotina*), slash pine, Chinese tallow, wax myrtle, Virginia chain fern, blackberry (*Rubus pensilvanicus*), and greenbriers (*Smilax* spp.).

#### Freshwater Marsh (FLUCFCS 641)

##### Cowardin PEM1 (Palustrine, Emergent, Persistent)

A small area of disturbed low-quality marsh occurs on the eastern side of I-95, north of the Baymeadows Road interchange. It appears to be artificially maintained as a marsh by the suppression of arborescent vegetation by road shoulder maintenance. is dominated by cattails (*Typha* spp.), rattleboxes (*Sesbania* spp.), ragweed (*Ambrosia artemisiifolia*), sedges (*Cyperus* and *Rhynchospora* spp.), torpedograss (*Panicum repens*), and witchgrasses (*Dichantherium* spp.).

### **3.3 Soils**

Mapped soil types occurring within the project study area are depicted on **Exhibit 5 (Appendix A)** and are summarized below. Soil classifications are taken from *Soil Survey of City of Jacksonville, Duval County, Florida* (USDA-NRCS, 1998).

- (9) Arents, sanitary landfill
- (14) Boulogne fine sand
- (22) Evergreen-Wesconnett complex, depressional
- (24) Hurricane and Ridgewood soils
- (32) Leon fine sand
- (35) Lynn Haven fine sand
- (46) Ortega fine sand
- (49) Pamlico muck, depressional
- (66) Surrency loamy fine sand, depressional
- (69) Urban land
- (71) Urban land - Leon - Boulogne complex
- (81) Stockade fine sandy loam, depressional

### 3.4 Hydrologic Features

In general, wetlands south of Philips Highway flow south into Julington Creek, and wetlands north of Philips Highway flow north into Pottsburg Creek. Both of these systems and the entire project study area are located within the Northern St. Johns River & Northern Coastal (4) basin and Sixmile and Julington Creeks Nested (5) basin, as mapped by SJRWMD. The portion of the project study area south of Baymeadows Road is located on Basin 5 and the project area north of this is located in Basin 4. Wetlands labeled as W1-W12 lie within Basin 4 and wetlands labeled as W13-W32 line within Basin 5. The individual wetlands are labeled on **Exhibit 6 (Appendix A)**, and the basin boundaries are depicted on **Exhibits 1, 2, and 6 (Appendix A)**. Julington Creek and Pottsburg Creek are small named creek systems that traverse the project study area and flow into the St. Johns River east of the project study area.

The following water quality regulatory requirements will be adhered to during the planning and construction of the project:

- U.S. Environmental Protection Administration (USEPA):
  - Clean Water Act 303(d), United States Code
- Florida Department of Environmental Protection (FDEP):
  - Water Resource Implementation Rule (Chapter 62-40, F.A.C.)
  - Regulations of Stormwater Discharge (Chapter 62-25, F.A.C.)
- SJRWMD:
  - Environmental Resource Permits (Chapter 62-330, F.A.C.)

## 4.0 PROTECTED SPECIES AND HABITAT

This project was evaluated for impacts to wildlife and habitat resources, including federally protected species, in accordance with Section 7 of the Endangered Species Act (ESA, 1973), as amended, and FDOT PD&E Manual Part 2, Chapter 16 (2020). This report contains information pertaining to all federally-listed species, candidates for federal listing, and state-listed species that may occur within the project study area. Unless otherwise noted, all are collectively referred to as “listed species” in this report.

### 4.1 Methods

Literature reviews, agency database searches, agency coordination, and field surveys of potential habitat areas were conducted to identify listed species potentially occurring within the project study area. The *Soil Survey of City of Jacksonville, Duval County*; recent aerial photographs; GIS Land Cover and Land Use data; and field reconnaissance were utilized to determine habitat types occurring within and adjacent to the project study area.

The assessment of potential impacts to listed species began with the identification of suitable habitat. Field investigations were conducted on July 1, 2, 7, 8, and 14, 2020. The survey was conducted by trained biologists using visual and aural methods. Listed wildlife species were identified by burrows, scat, shed skins, tracks, sightings, and/or their distinctive calls. The probability of occurrence of each species is discussed below.

## 4.2 Survey Results

### 4.2.1 Literature Search

This report addresses federally-listed species, candidates for federal listing, and state-listed species. Of these three categories, only federally-listed species are afforded protection under the ESA at this time. Other species may be protected by state or local regulations.

Information regarding federally-listed species was derived from the following online sources:

- <http://www.fws.gov/endangered/?ref=topbar>
- <http://www.florida.plantatlas.usf.edu/>
- <https://www.flrules.org/gateway/ChapterHome.asp?Chapter=5B-40>
- <http://www.fws.gov/northflorida/gotocty.htm>
- <https://ecos.fws.gov/ipac/location/index>
- <https://www.fnai.org/bioticssearch.cfm>

Information regarding state-listed species was derived from the following online sources:

- <https://www.fnai.org/bioticssearch.cfm>
- <https://myfwc.com/media/1945/threatend-endangered-species.pdf>
- <http://www.florida.plantatlas.usf.edu/>
- <https://www.flrules.org/gateway/ChapterHome.asp?Chapter=5B-40>

Information from all of these sources was compiled to generate an inventory of all listed species that may occur in Duval County.

A complete list of all federally- and state-listed plant and wildlife species that are documented as occurring in Duval County is included in **Appendix B**. A total of 85 listed species are known to occur in Duval County. Of these, 34 have no probability of occurrence in the project study area due to lack of suitable habitat. FDOT has determined that the project will have **no effect** on the federally-listed species, and **no effect is anticipated** for the state-listed species that have no probability of occurrence on the site. No determination is made at this time for species that are listed as candidate species for federal listing. Effect determinations will be made for candidate species if they become listed before the project is constructed.

Species that may occur in the project study area were determined based on the presence of suitable habitat and observations. These 51 species are included in the table below and were assigned a probability of occurrence (low, moderate, or high), defined as follows:

- Low – Species that are known to occur in the county, but for which preferred habitat is limited in the project study area.
- Moderate – Species that are known to occur in the county, and whose suitable habitat is well represented within or adjacent to the project study area, but no observations or positive indicators exist to verify their presence.
- High – Species that are known to occur in the county and are suspected to occur based on known ranges and existence of sufficient preferred habitat within or immediately adjacent to the project study area, or species which have been previously observed or documented within the project area.

Any listed species that were encountered during the field inspection were marked as Observed on the table below.

**Table 1** summarizes the potential habitat availability and probability of occurrence within the project area for those listed species that may occur. In addition to the probability of occurrence categories detailed above, species that were observed during the field investigation are marked as such. Documented occurrences of wood storks, nesting locations, Core Foraging Areas (CFAs), and wading bird rookeries are depicted on **Exhibit 7 (Appendix A)**. Documented occurrences of protected fauna within 5 miles of the project study area are depicted on **Exhibit 8 (Appendix A)**.

Table 1. Federally-listed and candidate species and state-listed species that may occur in the project study area.						
Scientific Name	Common Name	Federal Status	State Status	Preferred Habitat	Habitat Present in Project Area(s)	Probability of Occurrence
<b>Plants and Lichens</b>						
<i>Agrimonia incisa</i>	Incised Groove-bur	N	ST	Sandhills.	Yes.	Low.
<i>Asarum arifolium</i> (= <i>Hexastylis arifolia</i> )	Little Brown Jug	N	ST	Shady hammocks, slopes, and wetland edges.	Yes.	Low.
<i>Asclepias viridula</i>	Southern Milkweed	N	ST	Wet flatwoods and prairies, seepage slopes, pitcherplant bogs.	Yes.	Low.
<i>Balduina atropurpurea</i>	Purple Honeycomb-head	N	SE	Wet pine flatwoods and savannahs, seepage slopes, bogs, and wet ditches.	Yes.	Low.
<i>Calopogon multiflorus</i>	Many-flowered Grass-pink	N	ST	Longleaf pine savannahs and flatwoods.	Yes.	Low.
<i>Calycanthus floridus</i>	Eastern Sweetshrub	N	SE	Mesic hammocks and stream banks.	Yes.	Low.
<i>Calydorea caelestina</i>	Bartram's Ixia	N	SE	Wet to mesic flatwoods.	Yes.	Low.
<i>Carex chapmannii</i>	Chapman's Sedge	N	ST	Swamps, hydric hammocks, seepage slopes, and mesic hammocks.	Yes.	Low.
<i>Centrosema arenicola</i>	Pineland Butterfly Pea	N	SE	Sandhills, scrub, and scrubby flatwoods.	Yes.	Low.
<i>Cleistesiosis divaricata</i>	Rosebud Orchid	N	SE	Wet flatwoods and bogs.	Yes.	Low.
<i>Cleistesiosis oricamporum</i> (= <i>Cleistes bifaria</i> )	Fragrant Pogonia	N	SE	Wet flatwoods.	Yes.	Low.
<i>Ctenium floridanum</i>	Florida Toothache Grass	N	SE	Sandhills and other dry pinelands.	Yes.	Low.
<i>Gonolobus suberosus</i> (= <i>Matelea gonocarpus</i> )	Angle Pod	N	ST	Hammocks.	Yes.	Moderate.
<i>Helianthus carnosus</i>	Lakeside Sunflower	N	SE	Wet flatwoods and prairies.	Yes.	Low.

**Table 1. Federally-listed and candidate species and state-listed species that may occur in the project study area.**

Scientific Name	Common Name	Federal Status	State Status	Preferred Habitat	Habitat Present in Project Area(s)	Probability of Occurrence
<i>Lilium catesbaei</i>	Pine Lily	N	ST	Pine savannahs, marshes, flatwoods, and bogs.	Yes.	Low.
<i>Litsea aestivalis</i>	Pondspice	N	SE	Pond margins, cypress dome and swamp edges.	Yes.	Low.
<i>Lobelia cardinalis</i>	Cardinalflower	N	ST	Swamps, riverbanks, and cypress domes.	Yes.	Low.
<i>Matelea flavidula</i>	Yellow Carolina Milkvine	N	SE	Wooded slopes and bluff forests.	Yes.	Low.
<i>Matelea floridana</i>	Florida Milkvine	N	SE	Hammocks.	Yes.	Low.
<i>Neottia bifolia</i>	Southern twayblade	N	ST	Seasonally flooded deciduous woodlands, often associated with <i>Sphagnum</i> .	Yes.	Low.
<i>Orbexilum virgatum</i>	Pineland Leatherroot	N	SE	Pine flatwoods and savannahs, usually in moist soils.	Yes.	Low.
<i>Orthochilus ecristatus</i> (= <i>Pteroglossaspis ecristata</i> )	Giant Orchid	N	ST	Sandhill, scrub, pine flatwoods, and pine rocklands.	Yes.	Low.
<i>Pecluma plumula</i>	Plume Polypody	N	SE	Epiphytic on tree branches or on limestone in hammocks and swamps.	Yes.	Low.
<i>Pecluma ptilota</i> var. <i>bourgeauana</i>	Comb Polypody	N	SE	Rockland hammocks and wet woods, often on tree bases and fallen logs.	Yes.	Low.
<i>Pinguicula caerulea</i>	Blueflower Butterwort	N	ST	Marshes, swamp edges, and wet flatwoods.	Yes.	Low.
<i>Pinguicula lutea</i>	Yellow Butterwort	N	ST	Sandy bogs and open wet flatwoods.	Yes.	Low.
<i>Platanthera blephariglottis</i> var. <i>conspicua</i>	White Fringed Orchid	N	ST	Bogs, swamps, and marshes.	Yes.	Low.
<i>Platanthera chapmanii</i>	Chapman's Fringed Orchid	N	SE	Bogs, swamps, and marshes.	Yes.	Low.
<i>Platanthera ciliaris</i>	Yellow Fringed Orchid	N	ST	Bogs, swamps, and marshes.	Yes.	Low.
<i>Platanthera cristata</i>	Crested Yellow Orchid	N	ST	Wet flatwoods and bogs.	Yes.	Low.
<i>Platanthera flava</i>	Gypsy-spikes	N	ST	Prairies, marshes, and wet flatwoods.	Yes.	Low.
<i>Platanthera integra</i>	Orange Reinorchid	N	SE	Wet flatwoods and bogs.	Yes.	Low.
<i>Platanthera nivea</i>	Snowy Orchid	N	ST	Bogs, swamps, and marshes.	Yes.	Low.
<i>Pogonia ophioglossoides</i>	Rose Pogonia	N	ST	Wet pine savannahs and flatwoods.	Yes.	Low.

**Table 1. Federally-listed and candidate species and state-listed species that may occur in the project study area.**

Scientific Name	Common Name	Federal Status	State Status	Preferred Habitat	Habitat Present in Project Area(s)	Probability of Occurrence
<i>Pycnanthemum floridanum</i>	Florida Mountainmint	N	ST	Sandhills, mesic forest and disturbed areas.	Yes.	Low.
<i>Ruellia noctiflora</i>	Nightflowering Wild Petunia	N	SE	Wet flatwoods, seepage slopes, hydric hammock.	Yes.	Low.
<i>Sarracenia minor</i>	Hooded Pitcherplant	N	ST	Wet flatwoods, swamps, marshes, and bogs.	Yes.	Moderate.
<i>Schoenolirion croceum</i>	Yellow Sunnysbell	N	SE	Wet pine flatwoods and bogs.	Yes.	Low.
<i>Spiranthes brevilabris</i>	Texas Ladies-Tresses	N	SE	Wet prairies and flatwoods.	Yes.	Low.
<i>Spiranthes longilabris</i>	Longlip Ladies-tresses	N	ST	Wet prairies and flatwoods.	Yes.	Low.
<i>Verbesina heterophylla</i>	Variable-leaf Crownbeard	N	SE	Mesic flatwoods and dry woods.	Yes.	Low.
<i>Zephyranthes atamasca</i> var. <i>atamasca</i>	Rainlily	N	ST	Swamps, floodplains, wet prairies, and wet roadsides.	Yes.	Moderate.
<i>Zephyranthes atamasca</i> var. <i>treatiae</i>	Treat's Rainlily	N	ST	Swamps, floodplains, wet prairies and wet roadsides.	Yes.	Moderate.
<b>Reptiles</b>						
<i>Drymarchon corais couperi</i> *	Eastern Indigo Snake	T	FT	Linked to xeric habitats and gopher tortoise burrows, but also uses other natural habitats such as swamps and freshwater marshes as foraging habitat.	Yes. Xeric habitat is very limited (<0.25-acre), and no gopher tortoise burrows were observed.	Low.
<i>Gopherus polyphemus</i> *	Gopher Tortoise	C	ST	Sandhills, scrub, dry flatwoods, dry ruderal areas.	Yes. No gopher tortoise burrows were observed in the preliminary investigation.	Low.
<i>Pituophis melanoleucus</i> **	Pine Snake	N	ST	Sandhill, sand pine scrub and scrubby flatwoods.	Yes.	Low.
<b>Birds</b>						
<i>Egretta caerulea</i> **	Little Blue Heron	N	ST	Forages in a wide variety of freshwater, brackish, and saline wetlands and waterways, including ponds and ditches. Prefers freshwater habitats. Nests in mixed colonies in flooded trees or shrubs or on islands.	Yes.	Moderate.

**Table 1. Federally-listed and candidate species and state-listed species that may occur in the project study area.**

Scientific Name	Common Name	Federal Status	State Status	Preferred Habitat	Habitat Present in Project Area(s)	Probability of Occurrence
<i>Egretta tricolor</i> **	Tricolored Heron	N	ST	Forages in a wide variety of freshwater, brackish, and saline wetlands and waterways, including ponds and ditches. Prefers coastal habitats. Nests in mixed colonies in flooded trees or shrubs or on islands.	Yes.	Low.
<i>Falco sparverius paulus</i> **	Southeastern American Kestrel	N	ST	Upland pinelands (flatwoods, sandhills, pastures, and old fields). Requires open areas for foraging, and nest cavities (dead trees, nest boxes, etc.) for breeding.	Yes.	Low.
<i>Mycteria americana</i>	Wood Stork	T	FT	Forages in a wide variety of freshwater and brackish wetlands and waterways, including ponds and ditches. Prefers waterbodies that have shallow or variable water levels to concentrate fish prey. Nests in colonies in flooded trees or on islands.	Yes.	Moderate.
<i>Platalea ajaja</i> **	Roseate Spoonbill	N	ST	Forages in a wide variety of freshwater, brackish, and saline wetlands and waterways, including ponds and ditches. Prefers coastal habitats. Nests in mixed colonies in mangroves, willow heads, or spoil islands.	Yes.	Low.

**Legal Status and Notes**

**Federally-listed Species (FWS)**

**C** = Candidate species for which federal listing agencies have sufficient information on biological vulnerability and threats to support proposing to list the species as endangered or threatened.

**CH** = Critical Habitat has been designated in the county in which the project is located.

**E** = Endangered: species in danger of extinction throughout all or a significant portion of its range.

**T** = Threatened: species likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

**PT** = Proposed threatened.

**N** = Not federally-listed.

\* = This species is included in a FWS Recovery Plan.

Recovery plans can be found at: <https://ecos.fws.gov/ecp0/pub/speciesRecovery.jsp?sort=1>

**State-listed Species**

**SAT** = Listed as threatened for similarity of appearance.



**Table 1. Federally-listed and candidate species and state-listed species that may occur in the project study area.**

Scientific Name	Common Name	Federal Status	State Status	Preferred Habitat	Habitat Present in Project Area(s)	Probability of Occurrence
<p>SSC = Species of Special Concern.                      SE = State endangered.                      ST = State threatened: species listed by the state that are likely to become endangered within the foreseeable future throughout all or a significant portion of its range.                      FE = Federally endangered: species federally listed as being in danger of extinction throughout all or a significant portion of its range.                      FT = Federally threatened: species federally listed as likely to become endangered within the foreseeable future throughout all or a significant portion of its range.                      ** = FWC has developed a draft or final Permitting Guidelines document for this species. Permitting guidelines can be found at: <a href="https://myfwc.com/wildlifehabitats/wildlife/species-guidelines/">https://myfwc.com/wildlifehabitats/wildlife/species-guidelines/</a></p>						

#### 4.2.2 Listed Species That May Occur in the Project Study Area

The following listed species have some probability of occurrence in the project study area or were observed during the field inspections. Only federally-listed species are afforded protection under the ESA at this time. The ESA is administered by FWS and NMFS to provide protection of imperiled species and their habitat. Section 7 of the ESA requires federal agencies to consult with FWS or NMFS when a project under their review has the potential to impact a federally-listed species. Other species may be protected by state or local regulations.

##### 4.2.2.1 Listed Plant Species That May Occur in the Project Study Area

The study area contains a range of upland and wetland habitats. Because of the habitat diversity in the corridor, a total of 43 state-listed plants have some potential to occur (see **Table 1** above for all listed plants that may occur). Most of these state-listed plants have low probabilities of occurrence; however, four species have moderate probabilities of occurrence. Angle pod (*Gonolobus suberosus*) is a relatively common species of hardwood hammocks and swamp margins, and may occur in or near the Mixed Wetland Hardwoods and especially the Streams and Lake Swamps habitats associated with the Julington Creek and Pottsburg Creek headwaters. Hooded pitcherplant (*Sarracenia minor*) is a common species of many of the wetland types occurring in the project study area. Finally, the two taxa of rainlilies (*Zephyranthes*) commonly occur in moist maintained roadside edges and in swales. No federally-listed plant species are known to occur in Duval County. The impact of individuals of any state-listed species will not affect the species as a whole. Therefore, **no effect is anticipated** for all state-listed plant species.

##### 4.2.2.2 Listed Wildlife Species That May Occur in the Project Study Area

#### REPTILES

**Gopher Tortoise** (*Gopherus polyphemus*) – The gopher tortoise is a state-threatened species that inhabits xeric and mesic forests, fields, and disturbed areas. During the site inspection, no gopher tortoises or highly suitable habitat were observed in the project study area. While this preliminary inspection cannot serve as a complete and official gopher tortoise survey, these results suggest that tortoises may not occur in the project study area when construction occurs, or if they do, they are likely to occur in small numbers. Overall, based on the preliminary survey, the species has been given a low probability of occurrence and if present, it is expected that fewer than 25 potentially occupied tortoise burrows will be affected by the project. A complete

survey of all affected potential gopher tortoise habitat will be conducted within 90 days of construction, and all affected gopher tortoises will be relocated in accordance with FWC regulations. Therefore, no **adverse effect is anticipated** for this state-listed species.

**Eastern Indigo Snake** (*Drymarchon corais couperi*) – The Eastern indigo snake is a federally-threatened species that is linked to xeric habitats and gopher tortoise burrows, and forages in both uplands and wetlands (Moler,1992). Most of the project study area consists of existing ROW. One area classified as sandhill (FLUCFCS 412) is present in the project study area. This area is approximately 0.24 acre in size, located within the existing ROW of I-95, and is overgrown and lacks a natural fire regime. No gopher tortoise burrows were observed, and the habitat quality is generally low. For these reasons, this habitat area is not likely to host xeric-dependent species such as the indigo snake. Throughout the entire project, gopher tortoise burrows are expected to be absent or to occur in small numbers. However, on a large-scale project such as this, the presence of other holes, mammal burrows, and other potential refugia cannot be ruled out. For these reasons, indigo snakes have been given a low probability of occurrence. The FWS’ *Eastern Indigo Snake Programmatic Effect Determination Key* (updated August 2013) was used to determine the potential effect on the indigo snake as follows:

- A. Project is not located in open water or salt marsh.....go to B
- B. Permit will be conditioned for use of the Service’s *Standard Protection Measures For The Eastern Indigo Snake* during site preparation and project construction.....go to C
- C. There are gopher tortoise burrows, holes, cavities, or other refugia where a snake could be buried or trapped and injured during project activities.....go to D
- D. The project will impact less than 25 acres of xeric habitat (scrub, sandhill, or scrubby flatwoods) or less than 25 active and inactive gopher tortoise burrows.....go to E
- E. Any permit will be conditioned such that all gopher tortoise burrows, active or inactive, will be evacuated prior to site manipulation in the vicinity of the burrow. If an indigo snake is encountered, the snake must be allowed to vacate the area prior to additional site manipulation in the vicinity. Any permit will also be conditioned such that holes, cavities, and snake refugia other than gopher tortoise burrows will be inspected each morning before planned site manipulation of a particular area, and, if occupied by an indigo snake, no work will commence until the snake has vacated the vicinity of the proposed work....."NLAA"

The project study area will affect fewer than 25 acres of xeric habitat and is likely to affect less than 25 potentially occupied gopher tortoise burrows. In addition, FDOT will implement the FWS’ *Standard Protection Measures for the Eastern Indigo Snake* during project construction and will excavate any affected active and inactive gopher tortoise burrows in accordance with FWC and FWS requirements. Therefore, it is expected that the project **may affect, but is not likely to adversely affect** the Eastern indigo snake, and further consultation is not required.

**Pine Snake** (*Pituophis melanoleucus*) – Similar to the indigo snake, the pine snake is linked to xeric habitats and to gopher tortoise burrows. The scarcity of these resources in the project study area creates a low probability of occurrence and **no adverse effect is anticipated** for this state-listed species.

## BIRDS

**Southeastern American Kestrel** (*Falco sparverius paulus*) – The southeastern American kestrel requires open upland forests with trees and other perches from which to hunt. Various uplands in the project study area may

provide moderately suitable habitat for this species. However, none were observed during the site visit, and the presence of the interstate and adjacent commercial and residential areas make the probability of occurrence low. No **adverse effect is anticipated** for this state-listed species.

**State-listed Wading Birds** – The **little blue heron** (*Egretta caerulea*), **tricolored heron** (*Egretta tricolor*), and **roseate spoonbill** (*Platalea ajaja*) are state-listed as threatened species. Any of these bird species may occur in wetlands, ditches, and stormwater ponds throughout the project study area. They are highly mobile, so if any individuals are present during construction, they can easily leave the area if disturbed. Wading birds that prefer freshwater habitats have a moderate probability of occurrence, and those that prefer coastal areas have a low probability of occurrence. No listed wading birds were observed during the site inspection. The nearest documented wading bird rookery is approximately 6.6 miles east of the project study area and was last documented as active in the 1990s FWC survey. **No adverse effect is anticipated** for these state-listed wading birds.

**Wood Stork** (*Mycteria americana*) – The wood stork, federally listed as threatened, is a wetland-dependent wading bird. It lives in areas containing woody vegetation over standing water, preferably in cypress trees or mangroves (Rodgers et al., 1988; FWS, 1996). The wood stork ranges across the state except for the western half of the panhandle (FWS, 1996). It routinely travels 6-25 miles to feeding sites and is known to fly between 60-80 miles to find food (Ogden et al., 1978; Browder, 1984; Ogden, 1996). It feeds in areas of calm and clear water that is between 2-16 inches deep (Kahl, 1964; Ogden, 1996). The wood stork requires areas that have long hydroperiods that allow for its prey to reproduce, and droughts that concentrate its prey into small pools making it easier to catch. FWS designates CFAs for each documented wood stork colony by region. Duval County is within the North Florida region, which defines each CFA as a 13-mile radius surrounding the colony location. All wetlands and waterways within the 13-mile radius may be considered Suitable Foraging Habitat (SFH) for wood storks.

As noted on **Exhibit 7 (Appendix A)**, the entire project study area is located in the CFA of one or two documented active wood stork colonies, the nearest of which is located approximately 6.8 miles east of the project study area. No wood storks were observed during field investigation, and this species has been given a moderate probability of occurrence. All wetlands and waters in the project are likely to be considered SFH. The project’s potential effect on wood storks was evaluated using the USACE/FWS *Effect Determination Key for the Wood Stork in Central and North Peninsular Florida (2008)* as follows:

- A. Project more than 2,500 feet from a colony site .....go to B
- B. Project impacts SFH .....go to C
- C. Project impacts to SFH are greater than or equal to 0.5 ac.....go to D
- D. Project impacts to SFH are within the CFA of a colony site, or wood storks have been documented foraging on a project site outside the CFA .....go to E
- E. Project provides SFH compensation within the Service Area of a Service-approved wetland mitigation bank or wood stork conservation bank preferably within the CFA, or consists of SFH compensation within the CFA consisting of enhancement, restoration or creation in a project phased approach that provides an amount of habitat and foraging function equivalent to that of impacted SFH (see Wood Stork Foraging Habitat Assessment Procedure for guidance), is not contrary to the Service’s Habitat Management Guidelines For The Wood Stork In The Southeast Region and in accordance with the CWA section 404(b)(1) guidelines.....”NLAA”

Due to the occurrence of wetlands and surface waters throughout the project study area construction will likely impact more than 0.5 acre of SFH; however, wetland mitigation will be provided that will offset the loss of SFH. Therefore, the project **may affect, but is not likely to adversely affect**, the wood stork. No further consultation regarding this species is required.

#### 4.2.3 Additional Non-listed Federally Protected Species

**Bald Eagle** (*Haliaeetus leucocephalus*) – While no longer considered a listed species under the ESA, the bald eagle is afforded protection under the Bald and Golden Eagle Protection Act (BGEPA) of 1940, as amended. Bald eagles are large raptors that average 14 pounds with a wingspan of approximately 8 feet as adults. They are brown with white head and tail feathers and range across North America utilizing a variety of habitats including coastal areas, rivers, lakes, and other territories in proximity to their preferred food, fish. In Florida, there are over 1,000 documented nesting pairs of bald eagles. (<http://myfwc.com/wildlifehabitats/managed/bald-eagle/information>).

No bald eagles were observed within the project study area during field investigations. **Exhibit 8 (Appendix A)** depicts the locations of the documented bald eagle nests within 5 miles. Although the bald eagle has been delisted, restrictions regarding work around their nests are still in place. These restrictions vary based on the time of year and distance from the nest. Generally, if work is proposed within 660 feet of the nest, restrictions may be applicable. No documented eagle nests occur within 660 feet of the project study area. The nearest bald eagle nest is located approximately 1.5 miles northeast of the northern end of the project corridor. Therefore, the project will not be affected by work restrictions around eagle nests.

No federally- or state-listed species of **bats** are known to occur in Duval County. However, FWC regulates work that affects colonies of non-listed bats, and these colonies may occur under bridges and inside culverts. The chief signs of bats include accumulation of guano, staining on vertical faces of the structure, and direct bat observations such as seeing bats or hearing their vocalizations. Preliminary inspections for the presence of bat colonies were conducted using accessible areas under three overpasses and one flyover ramp. The insides of culverts were not inspected as part of this preliminary study. In Northeast Florida, the most common bat species to utilize bridges are the Brazilian free-tailed bat (*Tadarida brasiliensis*) and the big brown bat (*Eptesicus fuscus*), and the most common species to utilize culverts is the Southern myotis (*Myotis austroriparius*). All three of these are non-listed species. The project study area contains four bridge structures. From south to north, they are: 1) the I-95 overpass over the CSX railroad track just south of Philips Highway, 2) the I-95 overpass over Philips Highway, 3) the southbound flyover ramp from Southside Boulevard to I-95, and 4) the I-95 overpass over Baymeadows Road. Based on preliminary inspections carried out on July 14, 2020, three of these four structures may be or may have been inhabited by bats. The CSX overpass contained signs of potential bat usage (moderate staining on vertical faces), but no bats were directly observed. The Philips Highway and Baymeadows Road overpasses had very light staining, indicating potential bat usage. No bats were directly observed at either of these locations. No signs of potential bat usage were observed under the Southside flyover ramp. This structure has a smooth steel undersurface making it an unlikely surface to which bats can cling. Bats can occupy, reoccupy, or abandon a site at any time. The observations regarding potential bat colony presence indicated in this report are preliminary in nature. All bridges and culverts should be fully inspected for the presence of bats immediately prior to construction. The removal of any bats is subject to rules in 68A-9.010, F.A.C. If bats are present, FDOT will implement SP 0070104-11 (Bats in Bridges) during project construction.

### 4.3 Mitigation (Conceptual)

Any required wetland mitigation will comply with requirements for the loss of wood stork foraging habitat. No additional mitigation to offset impacts to listed species is expected to be necessary.

### 4.4 Agency Coordination (Listed Species)

FDOT will coordinate with FWS, NMFS, and FWC (if required) regarding potential effects on state-listed and federally-listed species throughout the design and permitting phases of the project.

### 4.5 Conclusions (Listed Species)

A total of 34 species that are federally-listed, candidates for federal listing, and/or state-listed were determined to have no probability of occurrence in the project study area and will not be affected by the project.

A total of 39 state-listed plant species were determined to have a low probability of occurrence in the project study area, and four were determined to have a moderate probability of occurrence. **No adverse effect is anticipated** for these species.

Four state-listed animal species (pine snake, tricolored heron, roseate spoonbill, and Southeastern American kestrel) were determined to have a low probability of occurrence in the project study area. The state-listed gopher tortoise also has a low probability of occurrence. One state-listed wading bird (little blue heron) was determined to have a moderate probability of occurrence. **No adverse effect is anticipated** for any of these species.

The federally-listed Eastern indigo snake was determined to have a low probability of occurrence in the project study area. The wood stork was determined to have a moderate probability of occurrence. Any impacts to wood stork foraging habitat will be offset by the project's wetland mitigation. The project **may affect, but is not likely to adversely affect**, these federally-listed species. Continued agency coordination will occur during permitting to address final determination of impacts, implementation of protection measures, and mitigation if necessary.

FDOT will adhere to the following implementation measures and project commitments.

#### Implementation Measures:

- FDOT will conduct surveys for protected plants and animals within the project area as part of project permitting.
- If state or federally-listed plants or wildlife are identified within the project area, FDOT will coordinate with the appropriate agency.
- Suitable habitat for gopher tortoises within the project study area will be formally surveyed within 90 days of construction, and any affected tortoises will be relocated in accordance with Florida Fish and Wildlife Conservation Commission (FWC) regulations.
- FDOT will inspect all bridges and culverts within the project area for the presence of bats prior to construction.

### **Project Commitments:**

- FDOT will implement the FWS' *Standard Protection Measures for the Eastern Indigo Snake* during project construction.
- If bats are present, FDOT will implement SP 0070104-11 (Bats in Bridges) during project construction.

## **5.0 WETLAND EVALUATION**

### **5.1 Identification, Delineation, and Classification of Wetlands and Waters**

In accordance with Executive Order 11990, Protection of Wetlands, dated May 24, 1977, a wetland evaluation was conducted for the proposed project. The project was evaluated for impacts to wetlands and other surface waters in accordance with FDOT PD&E Manual Part 2, Chapter 9 (2020). The objectives were to identify, map, and evaluate potential wetland impacts that may be associated with the construction of the project, and to assess the function and value of wetlands potentially affected.

Wetlands within the project study area were identified and classified using definitions and guidelines contained in the FDOT's FLUCFCS Handbook (1999) and the Cowardin System (1979). The USACE Wetland Delineation Manual (1987) and its regional supplements, the Florida Wetlands Delineation Manual (Gilbert, et al., 1995), and several field guides aided in the identification of project wetlands. The attributes of the three parameters of vegetative composition, hydrologic regime, and soil classification determine the presence and type of wetland system.

In July 2020, the boundaries of jurisdictional wetlands within the project study area were delineated in accordance with Chapter 62-340, F.A.C., and the USACE 1987 Manual and its subsequent addendums. The approximate boundaries of wetlands were flagged in the field and estimated using a handheld GPS device. The approximate boundaries of surface waters were estimated for this report using aerial photographs and digital elevation maps. All wetland and surface water boundaries, acreages, and assessments given in this report are estimated and are subject to change pending survey and agency verification during the permitting process. The approximate boundaries of all wetlands, ditches, and surface waters identified as occurring within the project study area are depicted on **Exhibit 2 (Appendix A)**.

A baseline characterization of the wetlands within the overall project study area was performed. Each wetland's size, contiguity, vegetative structural diversity, edge relationships, wildlife habitat value, hydrologic functions, public use, and integrity were generally determined based on the wetland assessment procedures.

At this time, it is assumed that all of the wetlands and waters within the project study area are jurisdictional and regulated by SJRWMD. The new Navigable Waters Protection Rule, which went into effect on 22 June 2020, identified four clear categories of waters that are federally regulated under the Clean Water Act: (1) the territorial seas and traditional navigable waters; (2) perennial and intermittent tributaries; (3) certain lakes, ponds, and impoundments of jurisdictional waters; and (4) wetlands that are adjacent to jurisdictional waters. It is possible that several wetlands and/or surface waters within the project study area may no longer be considered jurisdictional for USACE under the new rule. Final USACE jurisdiction will be determined in conjunction with regulatory staff during the permitting process. Depending on the types of permits for which the project qualifies and the final temporary and permanent impact acreage, it is assumed that both agencies will require mitigation for impacts to all wetlands within the project study area.

## 5.2 Existing Wetlands and Other Surface Waters

All wetlands that occur within the project study area were identified and assessed for this report. See **Exhibits 2 and 6 (Appendix A)**. A total of 30.38 acres of wetlands are estimated to occur within the project study area. At this time, it is assumed that all of these wetlands may be permanently impacted. All of the wetlands that may be impacted by the project are freshwater and non-tidal, requiring standard freshwater functional gain units to offset lost functions. See **Section 6** for a discussion of the non-tidal nature of the wetlands.

The project study area contains approximately 0.96 acre of existing wet retention and 0.66 acre of dry retention areas. These stormwater management facilities, which are not considered to be jurisdictional wetlands or waters, are depicted in blue on **Exhibits 2 and 6**. The study area also contains many upland-cut ditch segments. While every attempt was made to identify all ditches that occur within the study area, there may be some ditches that were not identified. Approximately 5.26 acres of ditches are depicted in blue on **Exhibits 2 and 6**. Impacts to upland-cut ditches and existing stormwater ponds are not likely to require mitigation. Many or most of the ditches are presumably parts of existing permitted stormwater management systems, and (as such) should be considered non-jurisdictional and exempt from SJRWMD mitigation requirements. Ditches and other surface water habitats are often replaced, relocated, or expanded as part of roadway improvement projects, thereby maintaining the functions performed by these surface waters (stormwater conveyance, wood stork foraging habitat, etc.); Therefore, there is not likely to be a net loss of surface water habitat that would require mitigation. For this reason, a detailed evaluation of potential impacts to these surface waters is not included in this NRE. See **Section 3.2** for a full description of the surface waters within the project study area.

## 5.3 Wetland Assessments

For the purposes of this evaluation, all wetlands within the limits of construction of the project are considered to be potential permanent dredge and/or fill impacts. Exact permanent wetland and surface water impacts will be determined after survey, agency approval of the wetland lines, and final design. Ultimately, wetland and surface water impacts may vary from the current estimate upon final design. Some impacts may be determined to be temporary in nature rather than permanent. All wetlands within the project study area are depicted on **Exhibits 2 and 6 (Appendix A)**. It is assumed that all proposed impacts to wetlands and waterways may require mitigation. During the permitting process, final mitigation requirements will be determined.

The Uniform Mitigation Assessment Methodology (UMAM) was used to estimate the amount of mitigation required to offset impacts to wetlands. The UMAM Summary Sheet for the project is included in **Appendix C**. The estimated UMAM scores are shown in **Table 2**. These representative UMAM scores will be re-evaluated at the time of permitting based on the final design plans. **Table 2** summarizes the estimated wetland impacts and estimated functional losses associated with the project.

<b>Table 2. Summary of estimated wetland impact acreage and functional loss.</b>			
<b>Wetland</b>	<b>Impact Acreage</b>	<b>UMAM Score</b>	<b>Functional Loss<sup>1</sup></b>
615 / PFO1/2	13.11	0.70	9.18
617 / PFO1	6.64	0.63	4.21
630 / PFO1/2/4	10.46	0.57	5.93
641 / PEM1	0.17	0.50	0.09
<b>Totals</b>	<b>30.38</b>	<b>-</b>	<b>19.41</b>
<sup>1</sup> Source: UMAM Summary Sheet, <b>Appendix C.</b>			

Wetlands 1-12 are in Drainage Basin 4, and Wetlands 13-32 are in Basin 5. The majority of wetlands within the project study area occur in Basin 5; therefore more mitigation is expected to be required in this basin. In order to avoid cumulative wetland impacts and the loss of wood stork foraging habitat, mitigation must be performed in the basin in which the impact is incurred. The amount of estimated wetland mitigation required in each basin is shown in **Table 3.**

<b>Table 3. Summary of estimated mitigation needs per basin.</b>		
<b>Basin</b>	<b>Wetlands</b>	<b>Mitigation Credits</b>
4	W1-12	3.97
5	W13-32	15.44
<b>Totals</b>	<b>-</b>	<b>19.41</b>

#### **5.4 Avoidance and Minimization**

Wetland avoidance and minimization has been a priority throughout all phases of project development. As the project advances through subsequent phases, avoidance and minimization of wetland impacts will continue to be considered to the maximum extent practicable. Impacts to wetlands will be evaluated in detail in the design phase of the project. Applicable Best Management Practices (BMPs) for erosion control and water quality considerations will be adhered to during the construction phase of the project. The use of BMPs as necessary will protect the water quality of downstream systems.

#### **5.5 Secondary and Cumulative Impacts**

Secondary impacts may include increased noise, light penetration, and wildlife mortality beyond the limits of construction of a project. Additional mitigation may be required to offset secondary impacts. However, the size, extent, and loss of function to adjacent wetlands will be determined during permitting and will vary based on surrounding land use, proposed work, and other factors.

Cumulative impacts are assumed not to occur if mitigation is performed in the same basin in which the impacts are incurred. FDOT intends to provide mitigation (if required) for unavoidable permanent impacts within the basins in which the impacts are incurred. Therefore, cumulative impacts are not expected.



## **5.6 Wetland Mitigation (Conceptual)**

All of the wetlands that may be impacted by the project are freshwater and non-tidal, requiring standard freshwater functional gain units to offset impacts. It is estimated that 19.41 units of functional gain will be required to offset wetland impacts associated with the proposed action. The exact amount and type of mitigation required will be identified and negotiated with all applicable regulatory agencies when the project enters the design/permitting phase.

FDOT will evaluate various strategies to fulfill mitigation needs for wetland impacts resulting from the construction of the proposed project. These strategies may include purchasing standard freshwater forested mitigation credits from an approved mitigation bank serving the project study area. At the time this evaluation was prepared (September 2020), Basin 4 credits are available from Loblolly and Sundew mitigation banks, and Basin 5 credits are available from Northeast Florida and Fish Tail Swamp mitigation banks. Credit availability will vary based on when credit purchase is required. Alternatively, mitigation may be accomplished by the restoration, enhancement, preservation, and/or creation of wetlands, either on- or off-site. Wetland impacts which will result from the construction of this project will be mitigated pursuant to Section 373.4137, F.S., to satisfy all mitigation requirements of Part IV of Chapter 373, F.S., and 33 U.S.C. §1344.

## **5.7 Permits Required**

The regulatory agencies exerting jurisdiction over potentially affected wetlands will require permits for unavoidable impacts. The project is expected to require an Individual Environmental Resource Permit from SJRWMD. In addition, the project will require either an Individual Permit or a Regional General Permit (RGP) SAJ-92 from USACE. Whether the project will qualify for the RGP will depend on multiple factors, such as total project dredge and fill impacts, dredge and fill impacts per mile, whether the project is determined to include “new alignment”, and whether the USACE’s District Engineer agrees to allow it to be processed under the RGP. Compliance with USACE Section 404(b)(1) guidelines includes verification that all impacts have been avoided to the greatest extent practicable, that unavoidable impacts have been minimized, and that a compensatory mitigation plan has been provided for unavoidable wetland impacts.

Pursuant to 40 CFR parts 122 and 124, any project that results in the clearing of one or more acres of land will require a National Pollutant Discharge Elimination System (NPDES) permit from the USEPA. In association with this permit, a Stormwater Pollution Prevention Plan (SWPPP), implemented during the construction of the project, will also be required. The primary functions of the NPDES requirements are to ensure that sediment and erosion are controlled during construction of the project. These permits require adherence to BMPs to ensure compliance.

## **5.8 Agency Coordination (Wetlands)**

Agency coordination will be conducted as necessary throughout the design and permitting phases of the project.

## **5.9 Conclusions (Wetlands)**

A total of 30.38 acres of wetlands are estimated to occur within the project study area. At this time, it is assumed that all of these wetlands may be permanently impacted, and that all of these wetlands would require mitigation (if impacted). It is estimated that 19.41 units of functional gain will be required to offset

these impacts. Wetland impact acreages and mitigation requirements are subject to change and will be finalized during the permitting process. FDOT will provide appropriate mitigation to satisfy final mitigation needs. A number of existing stormwater ponds and upland-cut ditches (both considered surface waters) occur within the project study area. At this time, it is assumed that impacts to these surface waters will not require mitigation.

Wetland impacts were evaluated in accordance with Executive Order 11990. Due to the presence and position of on-site wetlands and the nature of the required work, the project will unavoidably impact wetlands. Based on the above considerations, it is determined that there is no practicable alternative to the proposed construction in wetlands and that the proposed action will include all practicable measures to minimize harm to wetlands.

## **6.0 ESSENTIAL FISH HABITAT**

An EFH assessment is required when an action by a federal agency may adversely impact either EFH or a federally managed fish species. According to the MSFCMA as amended through 1996, areas designated as EFH are defined as "...those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity". Federal agencies are required to coordinate potential adverse impacts to EFH or to federally managed fish species with NMFS.

### **6.1 Methods**

The project study area was evaluated for EFH using field observations and by inspection of available aerial photographs and soil surveys. In inland areas, it is generally understood that EFH is limited to portions of waterways that are subject to the ebb and flow of the tide, regardless of their salinity, and that in such tidal waters EFH extends up to the Mean High Water Level (MHWL) of the system. Tidal action pushes water upstream into freshwater systems, and these tidal pulses extend beyond the reach of plants adapted to saline or brackish waters. Therefore, EFH consists of saline, brackish, or freshwater tidal waters. Mitigation for the permanent loss (fill) of EFH takes the form of saltmarsh functional gain (for saline or brackish EFH), or a combination of saltmarsh and freshwater functional gain (for freshwater EFH).

South of the Philips Highway / I-95 interchange, a portion of the upper Julington Creek system lies along the western side of I-95. These wetlands flow south into Julington Creek and into the St. Johns River at a distance of approximately 9 river miles. The project study area does not contain any major creek channels associated with this system. While the Julington Creek system is tidal south of the project study area, this tidal influence does not extend to the portions of the Julington system that may be affected by the project due to the heavily forested nature of the systems, the lack of main creek channels, and the distance to the St. Johns River.

North of Philips Highway, the extensive forested wetlands on the western side of I-95 begin to flow north. This system (between Philips Highway and Baymeadows Road) is known as Pottsburg Swamp. These wetlands flow north under I-95 just north of Baymeadows Road, into Pottsburg Creek, and into the St. Johns River, a total distance of approximately 13.5 river miles. The crossing under I-95 north of Baymeadows Road is through a box culvert, and a channel is present. However, this crossing is located approximately 10.5 river miles upstream of the St. Johns River. While the downstream portion of the Pottsburg Creek system is tidally influenced, this tidal influence is highly unlikely to extend to the portion of the system that falls within the project study area due to the heavily forested nature of the systems and the considerable distance to the St.

Johns River. Therefore, all of the wetlands associated with Pottsburg Creek are expected to be non-tidal and not considered to be EFH.

None of the other wetlands and ditches in the project study area are tidally influenced; therefore, the project study area does not contain EFH.

## 6.2 Potential Impacts and Mitigation (Conceptual)

The project will not impact EFH; therefore, no EFH mitigation will be required. All wetland impacts in the project study area can be offset by the use of standard freshwater functional gain units.

## 6.3 Agency Coordination (EFH)

If project design changes necessitate EFH impact, FDOT will coordinate with NMFS and USACE (as necessary) to address EFH issues, impacts, and mitigation plans during the design and permitting phases of the project.

## 6.4 Conclusions (EFH)

The project will not impact EFH; therefore, no EFH mitigation will be required.

## 7.0 CONCLUSION

A total of 34 species that are federally-listed, candidates for federal listing, and/or state-listed were determined to have no probability of occurrence in the project study area and will not be affected by the project. A total of 39 state-listed plant species were determined to have a low probability of occurrence in the project study area, and four were determined to have a moderate probability of occurrence. **No adverse effect is anticipated** for these species. Four state-listed animal species (pine snake, tricolored heron, roseate spoonbill, and Southeastern American kestrel) were determined to have a low probability of occurrence in the project study area. The state-listed gopher tortoise also has a low probability of occurrence. One state-listed wading bird (little blue heron) was determined to have a moderate probability of occurrence. **No adverse effect is anticipated** for any of these species. The federally-listed Eastern indigo snake was determined to have a low probability of occurrence in the project study area. The wood stork was determined to have a moderate probability of occurrence. Any loss of foraging habitat will be offset by providing wetland mitigation that provides SFH for the wood stork. The project **may affect, but is not likely to adversely affect**, these federally-listed species. Continued agency coordination will occur during permitting to address final determination of impacts, implementation of protection measures, and mitigation if necessary. The project will not impact EFH; therefore, no EFH mitigation will be required.

A total of 30.38 acres of wetlands are estimated to occur within the project study area. At this time, it is assumed that all of these wetlands may be permanently impacted, and that all impacts would require mitigation. Impacts will be incurred to wetlands in SJRWMD Drainage Basins 4 and 5. It is estimated that 3.97 mitigation credits will be required for impacts to wetlands in Basin 4, and 15.44 credits will be required for impacts to wetlands in Basin 5. Wetland impact acreages and mitigation requirements are subject to change and will be finalized during the permitting process. FDOT will provide appropriate mitigation to satisfy final mitigation needs. A number of existing stormwater ponds and ditches (both considered surface waters)

occur within the project study area. At this time, it is assumed that impacts to these surface waters will not require mitigation.

Portions of three recorded conservation easements (CEs) occur within the project study area. The first CE occurs over Pond Site D-3, directly north of an existing stormwater pond that is associated with the Suddath Relocation Systems of Jacksonville, Inc. industrial building and does not have an associated SJRWMD permit number. The second CE is located on the western side of I-95, between the Baymeadows Road and Philips Highway interchanges. This CE is associated with SJRWMD Permit No. 127636-2 for the establishment of the Lower St. Johns Mitigation Bank. Pond Sites E-2 and D-1 lie within the boundary of the mitigation bank and associated CE. The third CE is located in the southern portion of the project study area adjacent to the I-95 right-of-way (ROW), at the southeastern intersection of the CSX Rail line and I-95 and is associated with SJRWMD Permit No. 4-031-91736-2 for the Avenues Walk commercial development project. Other CEs may occur within the project study area. Additional work, including boundary location by a licensed surveyor and/or legal research into the status of easements, will be necessary to determine if recorded conservation easements will be impacted by the proposed project.

FDOT will adhere to the following implementation measures and project commitments.

**Implementation Measures:**

- FDOT will conduct surveys for protected plants and animals within the project area as part of project permitting.
- If state or federally-listed plants or wildlife are identified within the project area, FDOT will coordinate with the appropriate agency.
- Suitable habitat for gopher tortoises within the project study area will be formally surveyed within 90 days of construction, and any affected tortoises will be relocated in accordance with Florida Fish and Wildlife Conservation Commission (FWC) regulations.
- FDOT will inspect all bridges and culverts within the project area for the presence of bats prior to construction.

**Project Commitments:**

- FDOT will implement the FWS' *Standard Protection Measures for the Eastern Indigo Snake* during project construction.
- If bats are present, FDOT will implement SP 0070104-11 (Bats in Bridges) during project construction.

## 8.0 REFERENCES

- Browder, J.A. 1984. Wood stork feeding areas in southwest Florida. Fla. Field Nat. 12:81-96.
- Cowardin, L.M., V. Carter V., F.C. Golet, E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service Report No. FWS/OBS/-79/31. Washington, D.C.
- Environmental Laboratory. January, 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1. U.S. Army Corps of Engineers, Waterways Experimentation Station. Vicksburg, Mississippi. Including Regional Supplement to the Corps Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region, November 2010.
- Florida Department of Transportation (FDOT). 1999. Florida Land Use, Cover and Forms Classification System. FDOT, Tallahassee, Florida. 43pp.
- Florida Department of Transportation. July 1, 2020. Project Development and Environmental Manual; Part 2, Chapter 16, Protected Species and Habitat. FDOT, Tallahassee, Florida.
- Florida Department of Transportation. July 1, 2020. Project Development and Environmental Manual; Part 2: FDOT PD&E Manual Part 2, Chapter 9, Wetlands and Other Surface Waters. FDOT, Tallahassee, Florida
- Florida Department of Transportation. July 1, 2020. Project Development and Environmental Manual; Part 2: FDOT PD&E Manual Part 2, Chapter 17, Essential Fish Habitat. FDOT, Tallahassee, Florida
- Florida Natural Areas Inventory (FNAI). 2001. Florida Guide to Rare Animals of Florida.
- Gilbert, K.M., J.D. Tobe, R.W. Cantrell, M.E. Sweeley, and J.R. Cooper. 1995. The Florida Wetlands Delineation Manual. FDEP, Tallahassee, Florida.
- Kahl, M. P., Jr. 1964. Food ecology of the wood stork (*Mycteria americana*) in Florida. Ecol. Monogr. 34:97-117.
- Moler, P. E. 1992. Eastern Indigo Snake, *Drymarchon corais couperi*. 181-186 pp. In: Rare and Endangered Biota of Florida-Amphibians and Reptiles, Vol. III. P.E. Moler, ed. University Press of Florida, Gainesville, Florida.
- Ogden J. C., J. A. Kushlan, and J. T. Tilmant. 1978. The food habits and nesting success of wood storks in Everglades National Park 1974. Natl. Park Serv. Res. no.16. Washington, D. C.
- Ogden, J.C. 1996. Wood Stork, *Mycteria americana*. 31-41 pp. In: Rare and Endangered Biota of Florida-Birds, Vol. V. Rodgers, J. A., Jr., Kale, H. W., and Smith, H. T., eds. University Press of Florida, Gainesville, Florida.
- Rodgers, J. A., Jr., A. S. Wenner, and S. T. Schwikert. 1988. The use and function of green nest material by wood storks. Wilson Bull. 100:411-423 (cited in Rogers et al., 1996).

United States Department of Agriculture-Natural Resource Conservation service. 1998. Soil Survey of City of Jacksonville, Duval County, Florida. Jacksonville, Florida.

United States Fish and Wildlife Service. 1996. Multi Species Recovery Plan for South Florida: Wood Stork. 4:393-428.

**APPENDIX A**  
**Project Exhibits**

**Exhibit 1 – USGS Topographic Quadrangle Map**



**LEGEND**

-  Approximate Project Area - 279.51 ac.±
-  SJRWMD Mitigation Basins

**Northern Extent**  
 Lat: 30° 14' 31.65" N (30.242125 dd)  
 Long: 81° 35' 09.45" W (-81.585958 dd)

**Northern St. Johns River & Northern Coastal**

**Sixmile & Julington Creeks Nested**

**Southern Extent**  
 Lat: 30° 10' 23.77" N (30.173269 dd)  
 Long: 81° 33' 27.71" W (-81.557697 dd)

Section:	1, 2, 11, 12	26, 35, 36,
	50, 51	51, 55, 56
Township:	4 South	3 South
Range:	27 East	27 East

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I-95 From I-295 to SR 202 (Butler)  
 FIN 435577-1  
 USGS Topographic Quadrangle Map  
 Duval County, Florida

Project No.:	20103
Exhibit No.:	1
Date:	7-13-20
Rev. Date:	



## **Exhibit 2 – Habitat Maps**



**HABITAT LEGEND**

- 411 - Pine Flatwoods - 4.84 ac.±
- 412 - Longleaf Pine-Xerix Oak - 0.24 ac.±
- 414 - Pine-Mesic Oak - 2.32 ac.±
- 427 - Live Oak - 1.92 ac.±
- 434 - Hardwood-Conifer Mixed - 25.65 ac.±
- 438 - Mixed Hardwoods - 0.77 ac.±
- 510/R3UB3x - Streams and Waterways - 0.08 ac.±
- 511/R4EMx - Upland Cut Ditch - 5.26 ac.±
- 530D/L2UBAx - Dry Stormwater Ponds - 0.66 ac.±
- 530W/L2UBHx - Wet Stormwater Ponds - 0.96 ac.±
- 615/PFO1/2 - Streams and Lake Swamps (Bottomland) - 13.11 ac.±
- 617/PFO1 - Mixed Wetland Hardwoods - 6.64 ac.±
- 630/PFO1/2/4 - Wetland Forested Mixed - 10.46 ac.±
- 641/PEM1 - Freshwater Marshes - 0.17 ac.±
- 812 - Railroads - 0.46 ac.±
- 814 - Roads and Highways - 205.97 ac.±

**LEGEND**

- Approximate Project Area - 279.51 ac.±
- SJRWMD Mitigation Basins
- Detail Map Index
- Habitat Classification Boundaries**
- Approximate Uplands - 242.17 ac.±
- Approximate Surface Waters - 6.96 ac.±
- Approximate Wetlands - 30.38 ac.±

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By: NEE

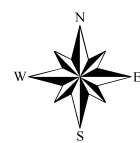
**I-95 From I-295 to SR 202 (Butler)  
FIN 435577-1  
Habitat Map Key**

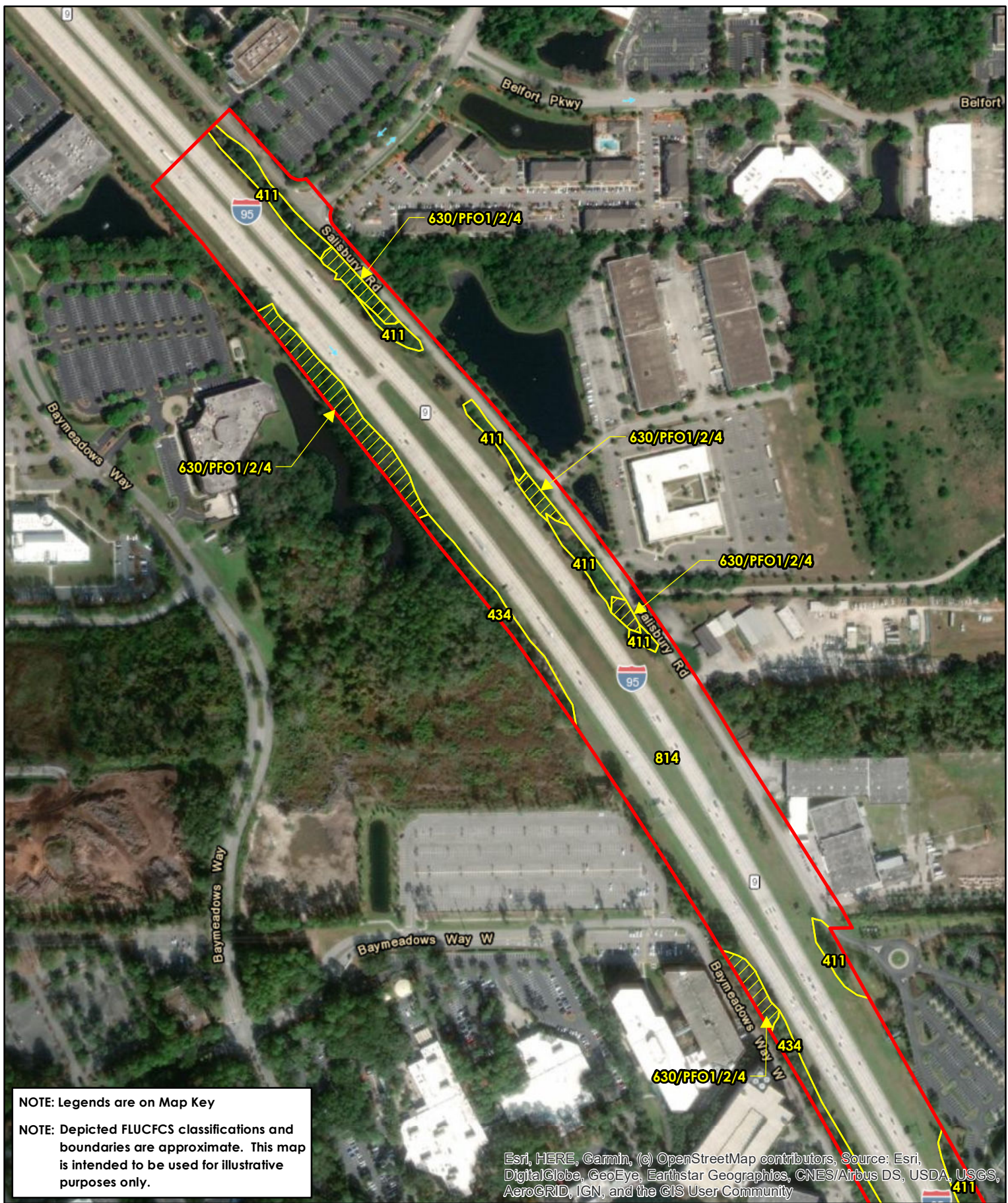
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Exhibit No.: 2-Key

Date: 7-13-20

Rev. Date:

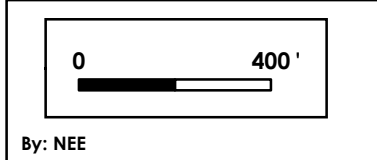




NOTE: Legends are on Map Key

NOTE: Depicted FLUCFCS classifications and boundaries are approximate. This map is intended to be used for illustrative purposes only.

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**FIN 435577-1**  
**Habitat Map A**

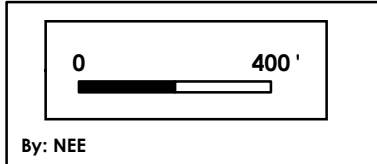
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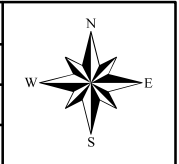
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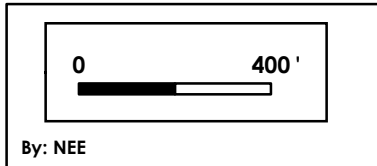
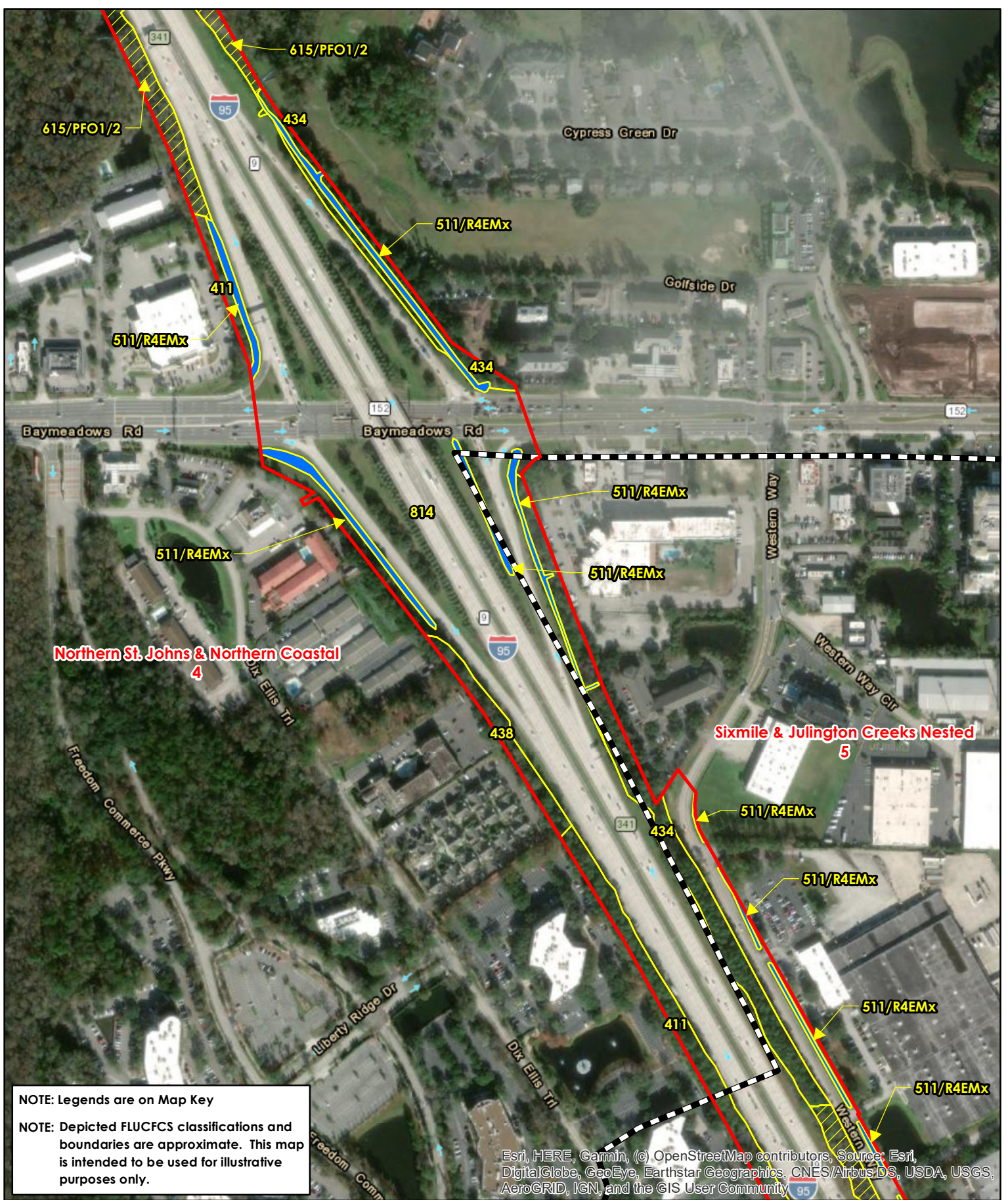
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 Habitat Map B**

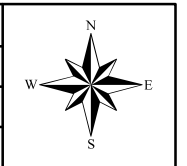
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**FIN 435577-1**  
**Habitat Map C**

Project No.:	20103
Exhibit No.:	2-C
Date:	7-13-20
Rev. Date:	





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NOTE: Depicted FLUCFCS classifications and boundaries are approximate. This map is intended to be used for illustrative purposes only.

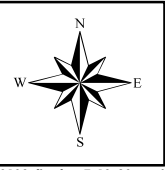
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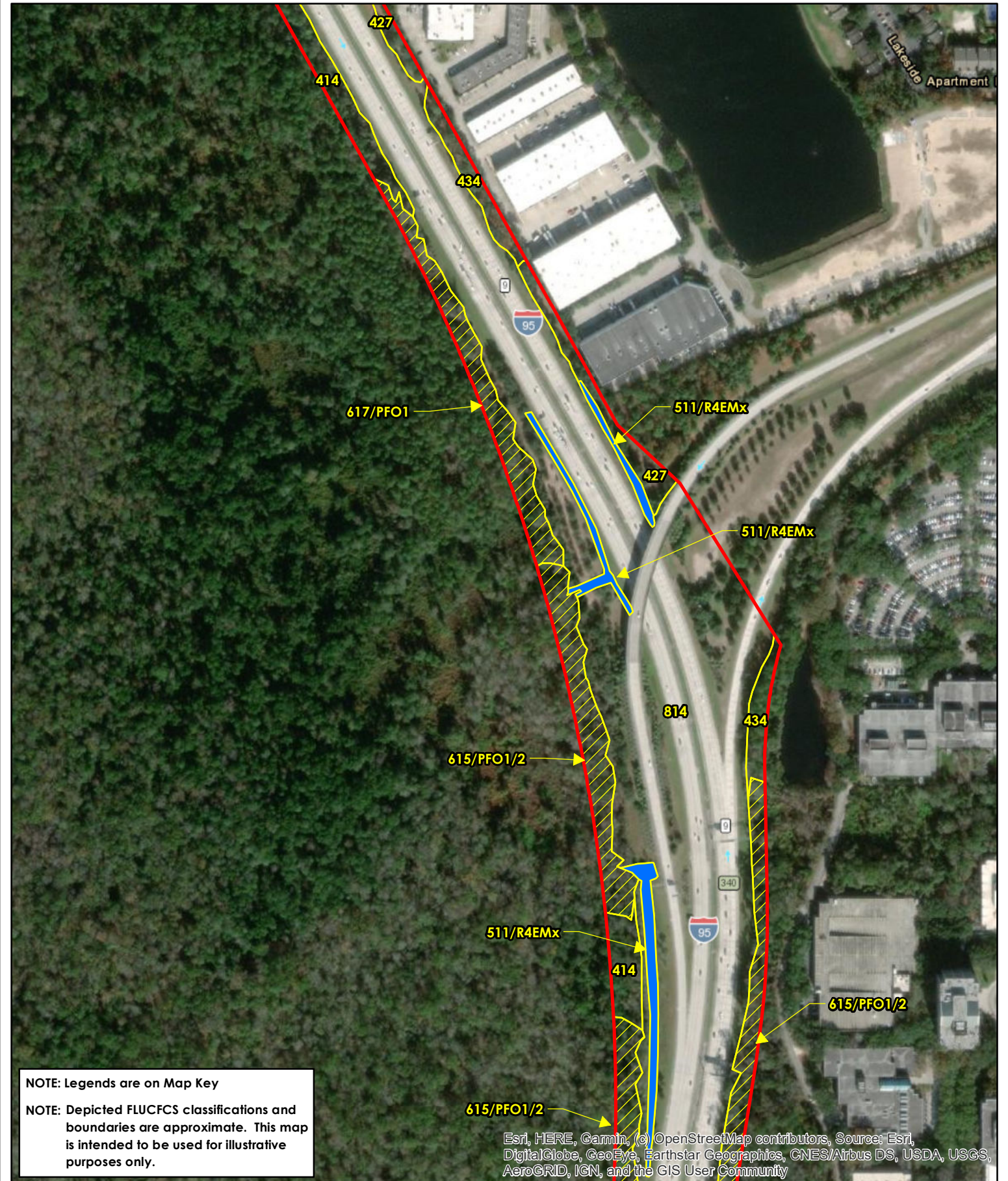


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 FIN 435577-1  
 Habitat Map D

Project No.:	20103
Exhibit No.:	2-D
Date:	7-13-20
Rev. Date:	

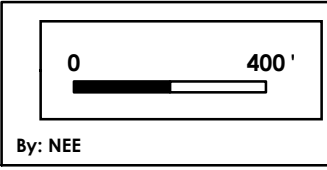




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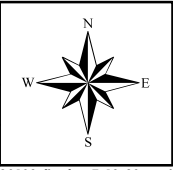
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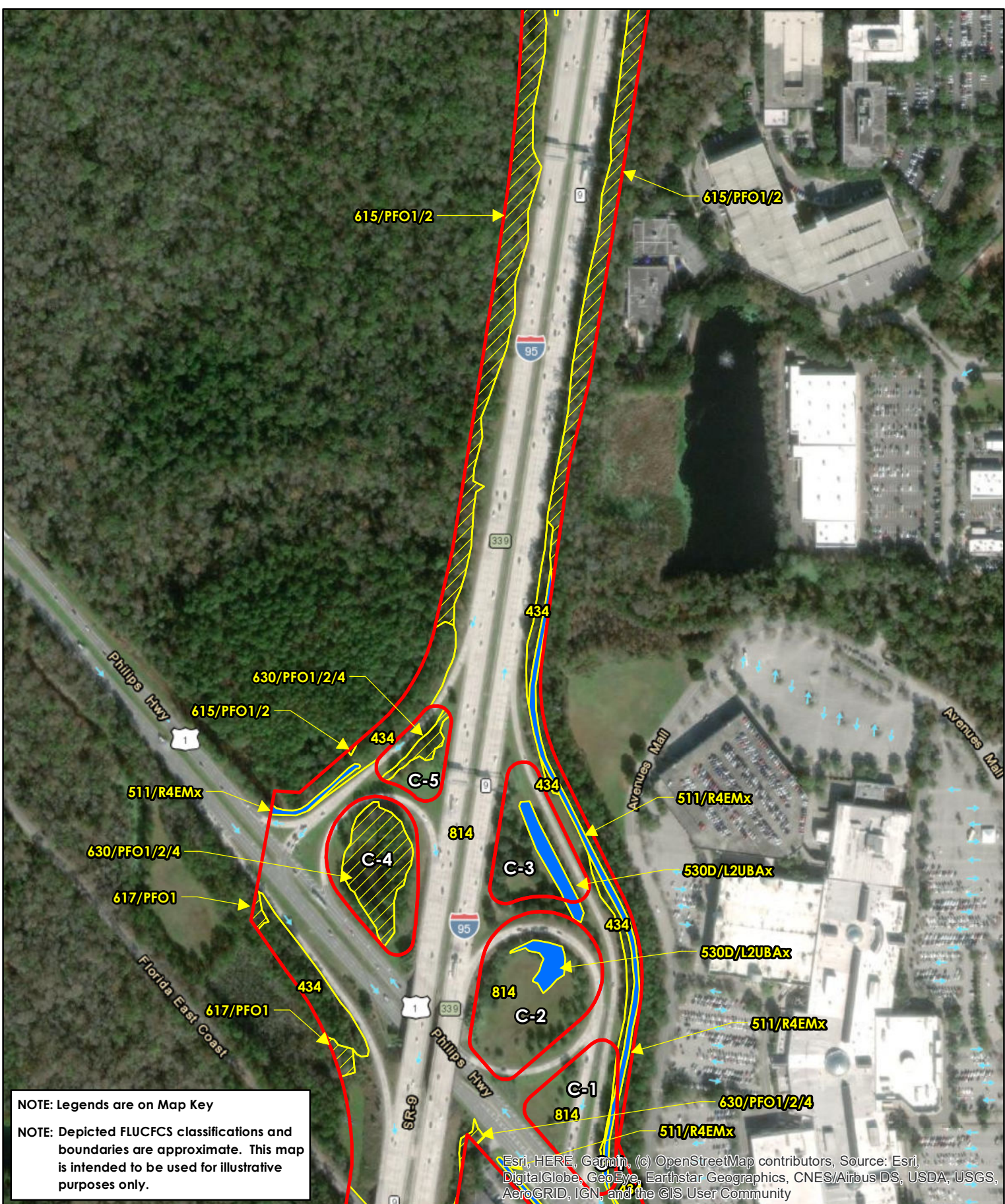


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**FIN 435577-1**  
**Habitat Map E**

Project No.:	20103
Exhibit No.:	2-E
Date:	7-13-20
Rev. Date:	

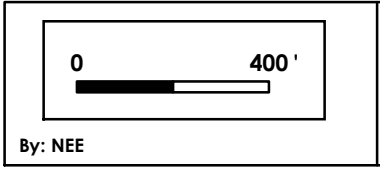






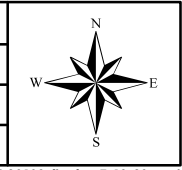
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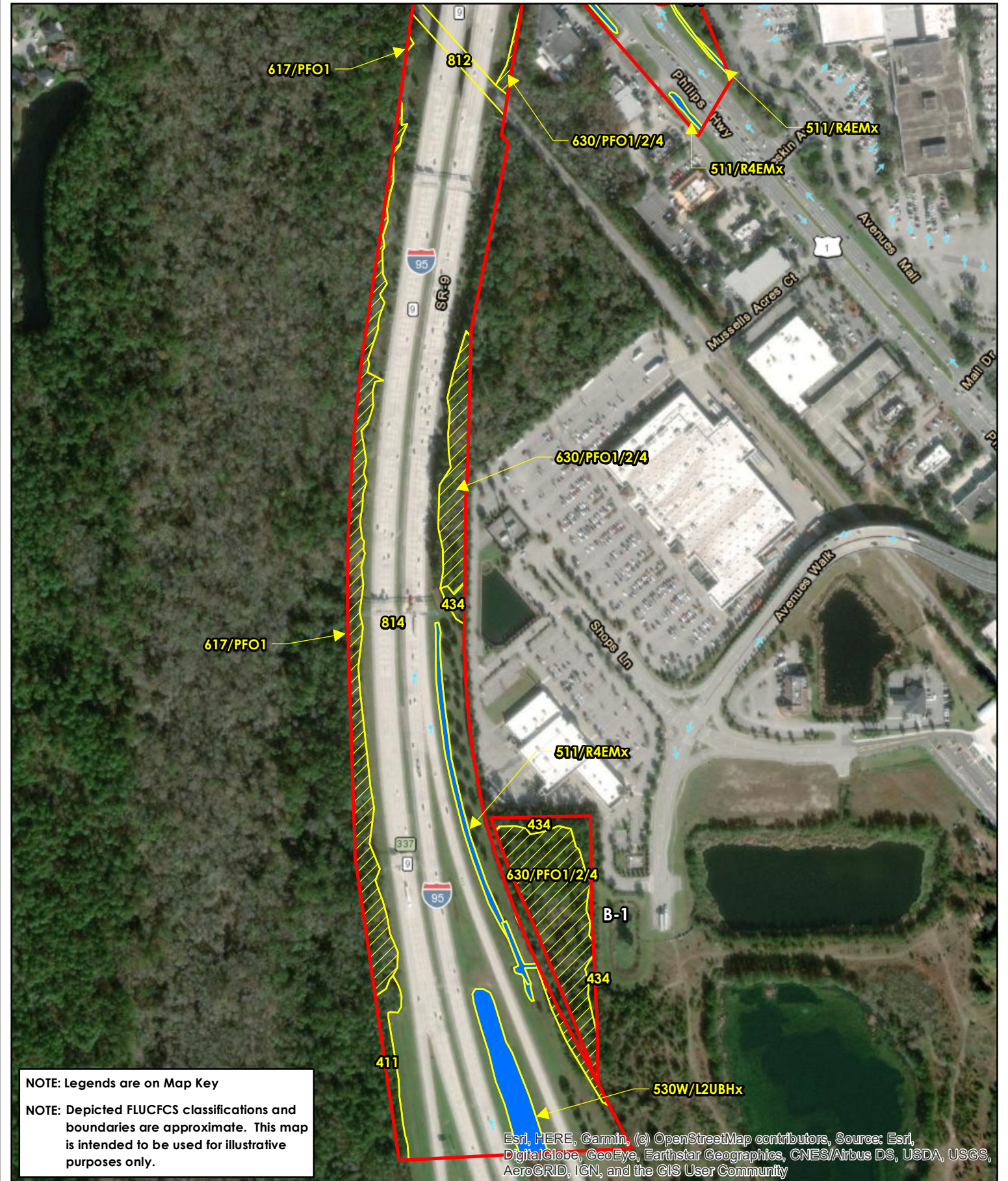
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 Habitat Map F**

Project No.:	20103
Exhibit No.:	2-F
Date:	7-13-20
Rev. Date:	





NOTE: Legends are on Map Key  
 NOTE: Depicted FLUCFCS classifications and boundaries are approximate. This map is intended to be used for illustrative purposes only.

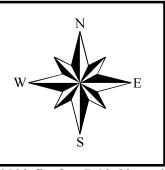
Esri, HERE, Garmin, (c) OpenStreetMap contributors, Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



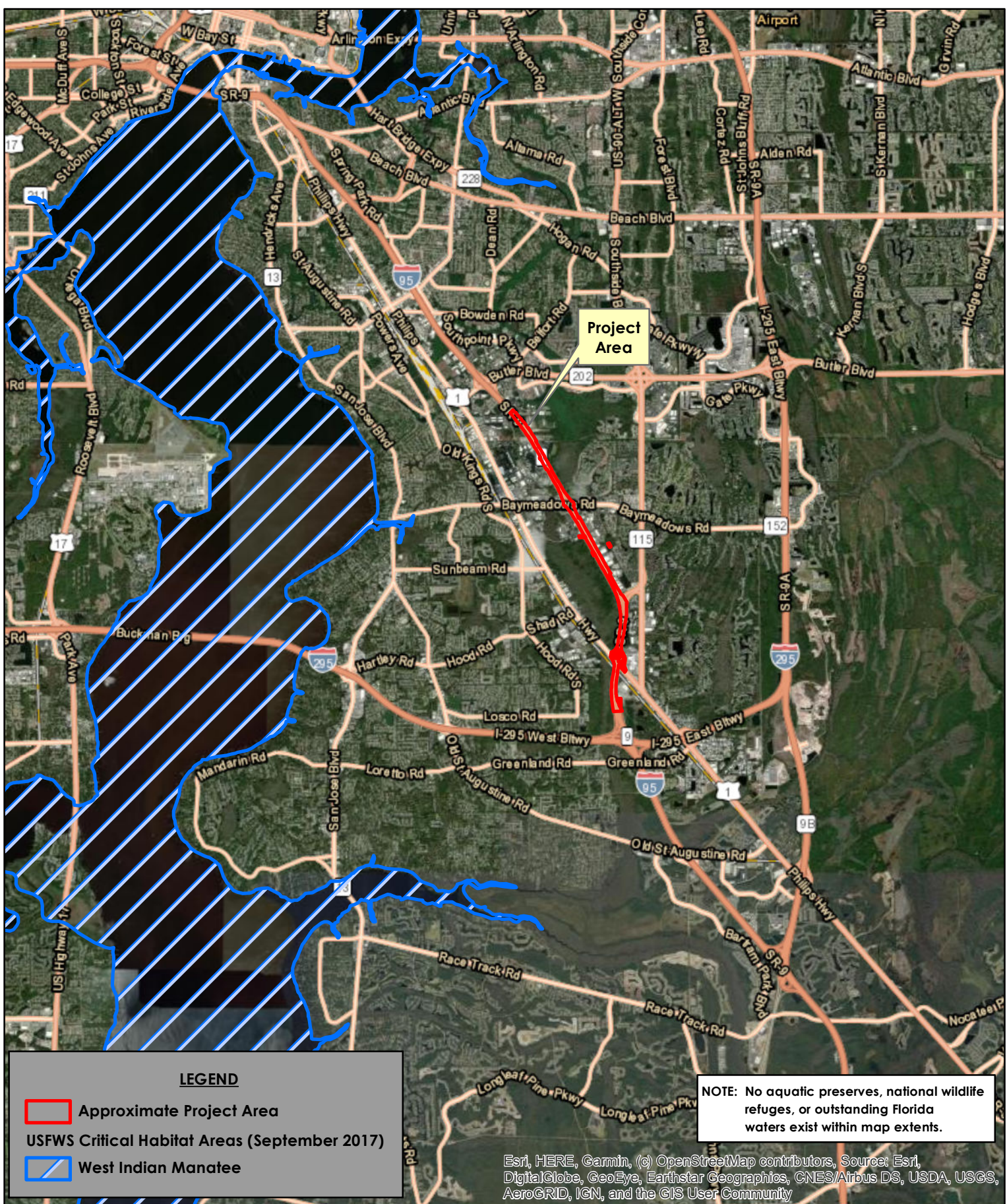
By: NEE

**I-95 From I-295 to SR 202 (Butler)  
 FIN 435577-1  
 Habitat Map G**

Project No.:	20103
Exhibit No.:	2-G
Date:	7-13-20
Rev. Date:	



**Exhibit 3 – Aquatic Preserves, National Wildlife Refuges,  
Outstanding Florida Waters, and Critical Habitats**



Project Area

**LEGEND**

- Approximate Project Area
- USFWS Critical Habitat Areas (September 2017)
- West Indian Manatee

NOTE: No aquatic preserves, national wildlife refuges, or outstanding Florida waters exist within map extents.

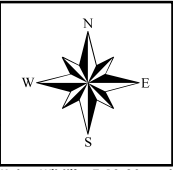
Esri, HERE, Garmin, (c) OpenStreetMap contributors, Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

0  2 Miles

By: NEE

I-95 From I-295 to SR 202 (Butler)  
 FIN 435577-1  
 Aquatic Preserves, National Wildlife Refuges,  
 Outstanding FL Waters, and Critical Habitats

Project No.:	20103
Exhibit No.:	3
Date:	7-13-20
Rev. Date:	



**Exhibit 4 – Conservation Easements Estimated to be Within or Adjacent to the Project Study Area**



**LEGEND**

- Approximate Project Area
- SJRWMD Regulatory Conservation Easements (April 2019)

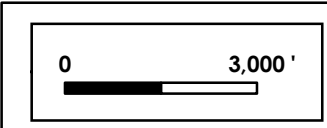
**SJRWMD Conservation Easement (6.86 ac.±)**  
 Duval County OR Book 7844, Page 1033  
 Recorded 5/5/99

**SJRWMD Conservation Easement (694.78 ac.±)**  
 Duval County OR Book 16575, Page 1204  
 Dated 8/6/13, Recorded 10/23/13  
 SJRWMD Permit No. 127636-2

**SJRWMD Conservation Easement (10.76 ac.±)**  
 Duval County OR Book 14347, Page 2259  
 Recorded 10/15/07  
 SJRWMD Permit No. 4-031-91736-2

**NOTE:** Conservation easement locations are approximate and are derived solely from SJRWMD GIS data.

Esri, HERE, Garmin, (c) OpenStreetMap contributors, Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



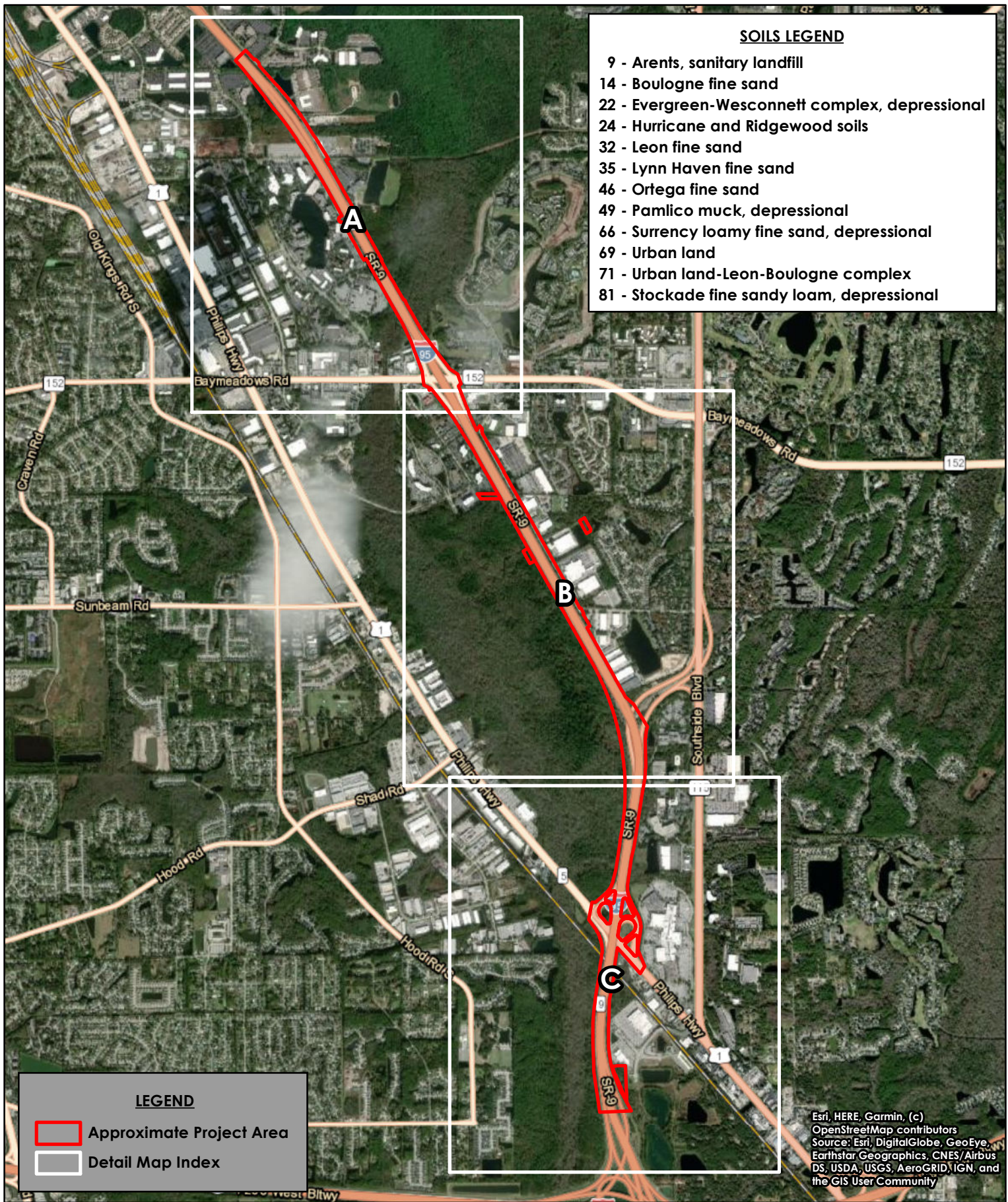
By: NEE

**I-95 From I-295 to SR 202 (Butler)**  
**FIN 435577-1**  
**Conservation Easements Estimated to be**  
**Within or Adjacent to the Project Study Area**

Project No.:	20103
Exhibit No.:	4
Date:	7-13-20
Rev. Date:	



**Exhibit 5 – Soils Maps**



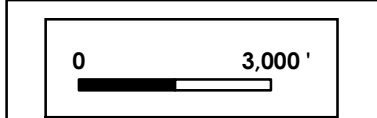
**SOILS LEGEND**

- 9 - Arents, sanitary landfill
- 14 - Boulogne fine sand
- 22 - Evergreen-Wesconnett complex, depressional
- 24 - Hurricane and Ridgewood soils
- 32 - Leon fine sand
- 35 - Lynn Haven fine sand
- 46 - Ortega fine sand
- 49 - Pamlico muck, depressional
- 66 - Surrency loamy fine sand, depressional
- 69 - Urban land
- 71 - Urban land-Leon-Boulogne complex
- 81 - Stockade fine sandy loam, depressional

**LEGEND**

- Approximate Project Area
- Detail Map Index

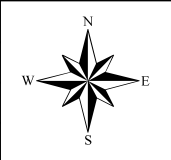
Esri, HERE, Garmin, (c)  
 OpenStreetMap contributors  
 Source: Esri, DigitalGlobe, GeoEye,  
 Earthstar, Geographics, CNES/Airbus  
 DS, USDA, USGS, AeroGRID, IGN, and  
 the GIS User Community



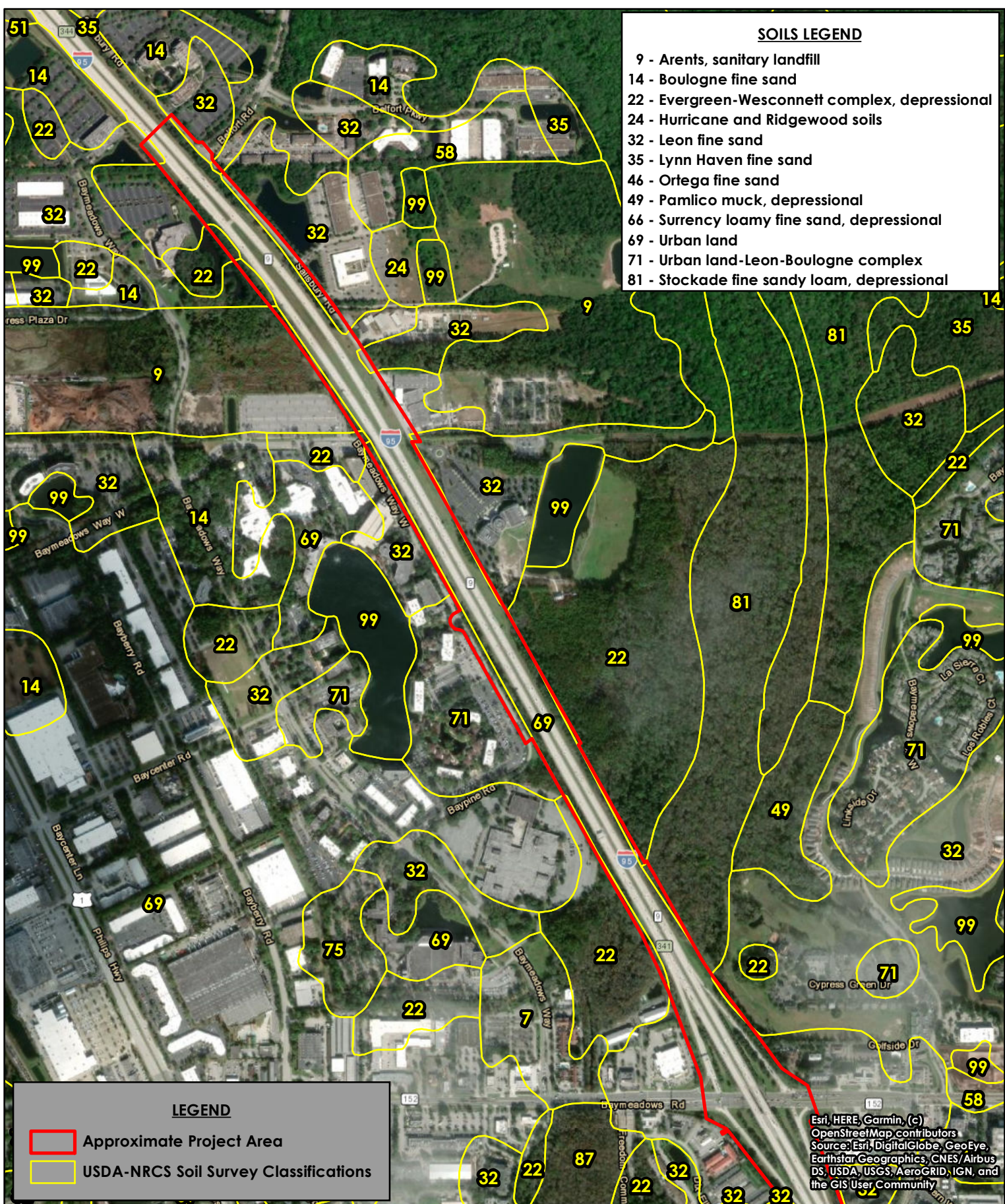
By: NEE

**I-95 From I-295 to SR 202 (Butler)**  
**FIN 435577-1**  
**Soils Map Key**  
**Duval County, Florida**

Project No.:	20103
Exhibit No.:	5-Key
Date:	7-13-20
Rev. Date:	







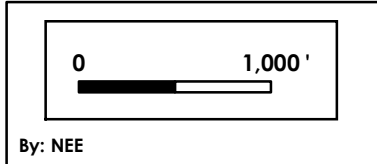
**SOILS LEGEND**

- 9 - Arents, sanitary landfill
- 14 - Boulogne fine sand
- 22 - Evergreen-Wesconnett complex, depressional
- 24 - Hurricane and Ridgewood soils
- 32 - Leon fine sand
- 35 - Lynn Haven fine sand
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- 49 - Pamlico muck, depressional
- 66 - Surrency loamy fine sand, depressional
- 69 - Urban land
- 71 - Urban land-Leon-Boulogne complex
- 81 - Stockade fine sandy loam, depressional

**LEGEND**

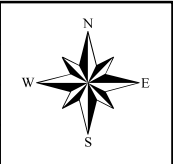
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	USDA-NRCS Soil Survey Classifications

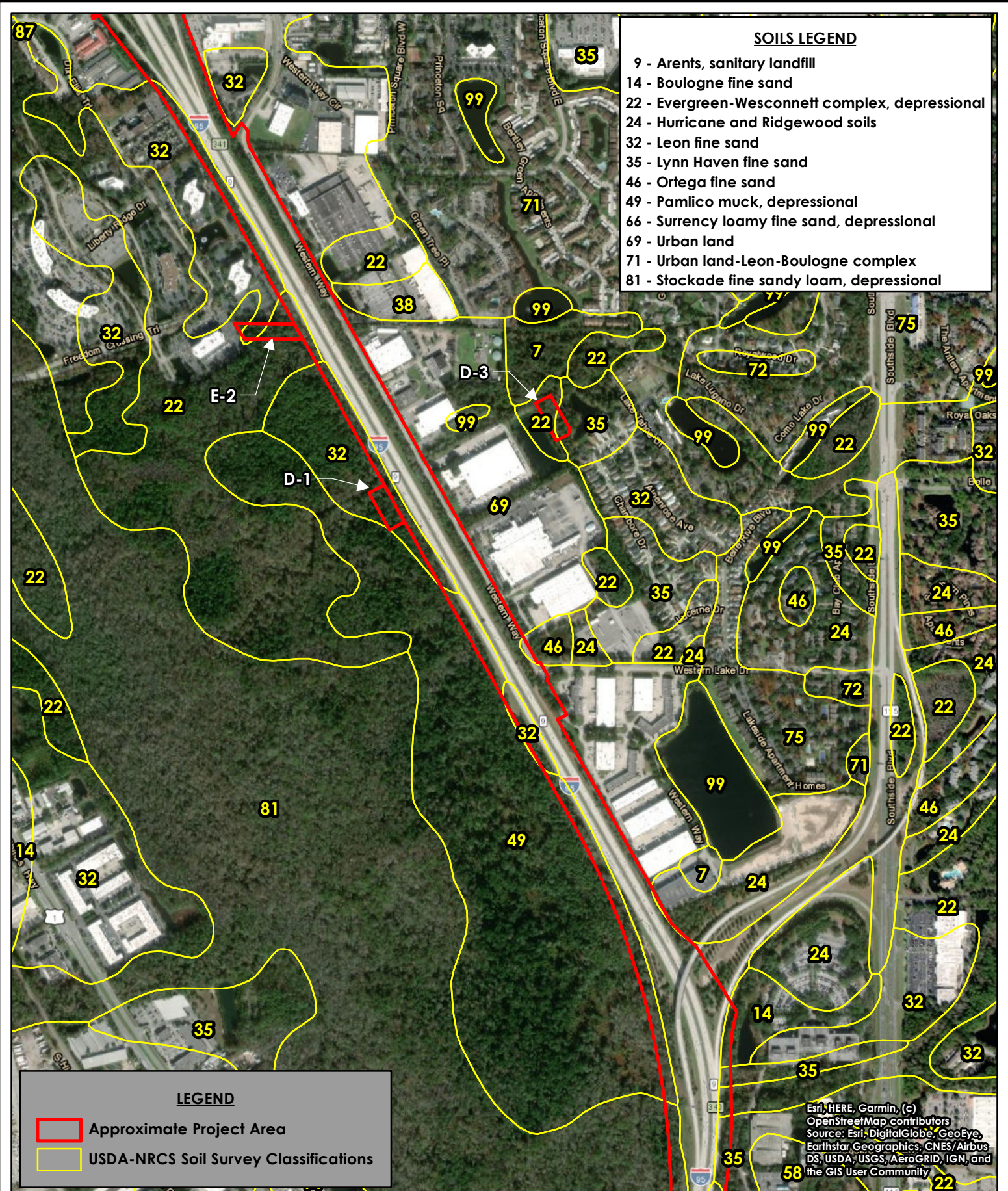
Esri, HERE, Garmin, (c)  
 OpenStreetMap contributors  
 Source: Esri, DigitalGlobe, GeoEye,  
 Earthstar Geographics, CNES/Airbus  
 DS, USDA, USGS, AeroGRID, IGN, and  
 the GIS User Community



**I-95 From I-295 to SR 202 (Butler)**  
**FIN 435577-1**  
**Soils Map A**  
**Duval County, Florida**

Project No.:	20103
Exhibit No.:	5-A
Date:	7-13-20
Rev. Date:	

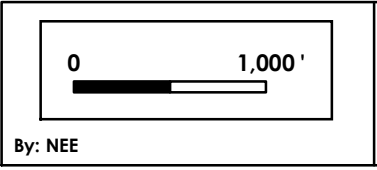




SOILS LEGEND	
9	- Arents, sanitary landfill
14	- Boulogne fine sand
22	- Evergreen-Wesconnett complex, depressional
24	- Hurricane and Ridgewood soils
32	- Leon fine sand
35	- Lynn Haven fine sand
46	- Ortega fine sand
49	- Pamlico muck, depressional
66	- Surrency loamy fine sand, depressional
69	- Urban land
71	- Urban land-Leon-Boulogne complex
81	- Stockade fine sandy loam, depressional

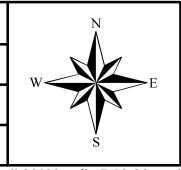
LEGEND	
	Approximate Project Area
	USDA-NRCS Soil Survey Classifications

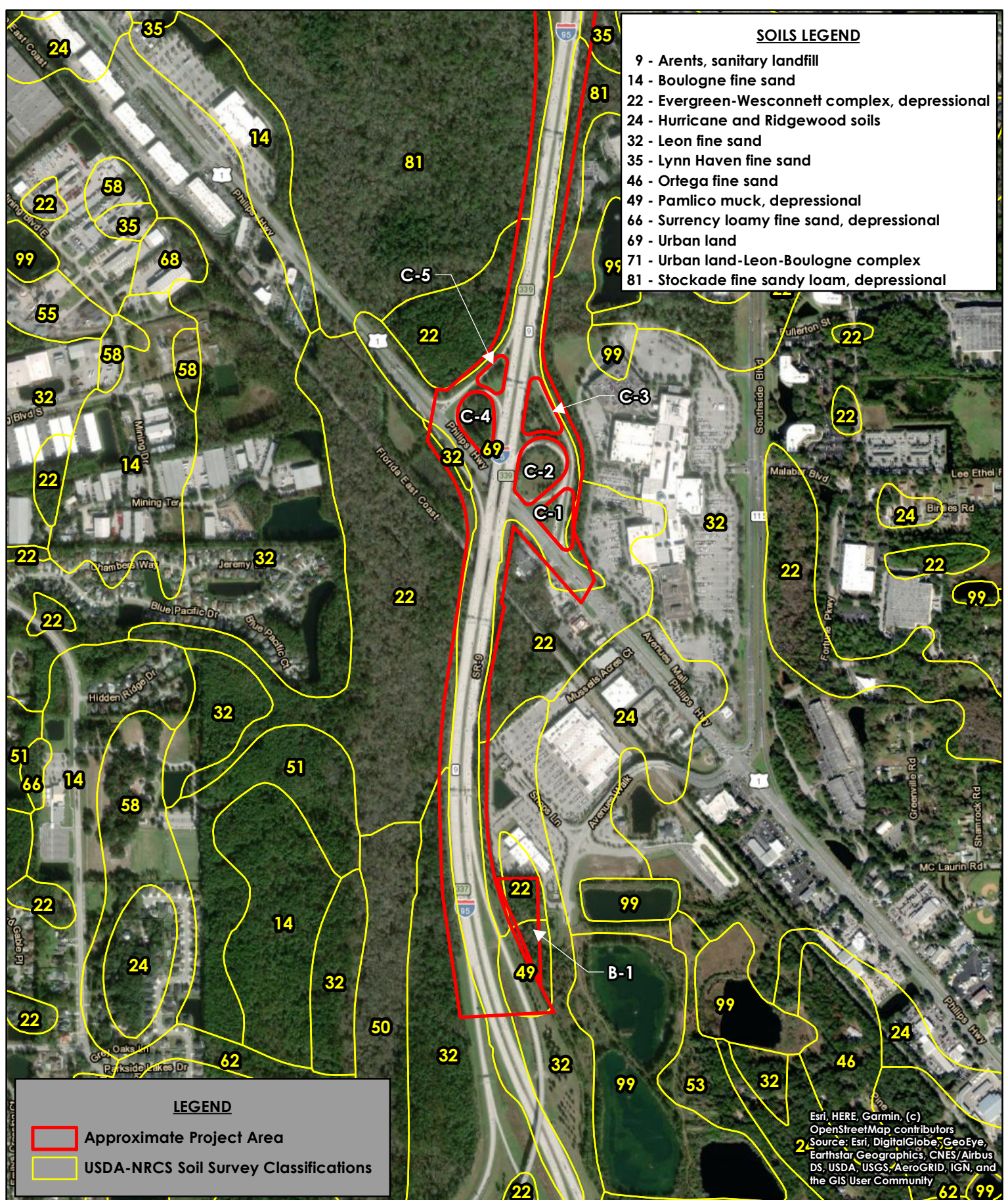
Esri, HERE, Garmin, (c) OpenStreetMap contributors, Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



I-95 From I-295 to SR 202 (Butler)  
 FIN 435577-1  
 Soils Map B  
 Duval County, Florida

Project No.:	20103
Exhibit No.:	5-B
Date:	7-13-20
Rev. Date:	





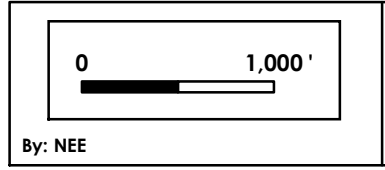
**SOILS LEGEND**

- 9 - Arents, sanitary landfill
- 14 - Boulogne fine sand
- 22 - Evergreen-Wesconnett complex, depressional
- 24 - Hurricane and Ridgewood soils
- 32 - Leon fine sand
- 35 - Lynn Haven fine sand
- 46 - Ortega fine sand
- 49 - Pamlico muck, depressional
- 66 - Surrency loamy fine sand, depressional
- 69 - Urban land
- 71 - Urban land-Leon-Boulogne complex
- 81 - Stockade fine sandy loam, depressional

**LEGEND**

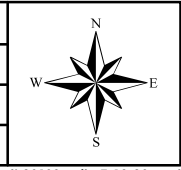
- Approximate Project Area
- USDA-NRCS Soil Survey Classifications

Esri, HERE, Garmin, (c) OpenStreetMap contributors, Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

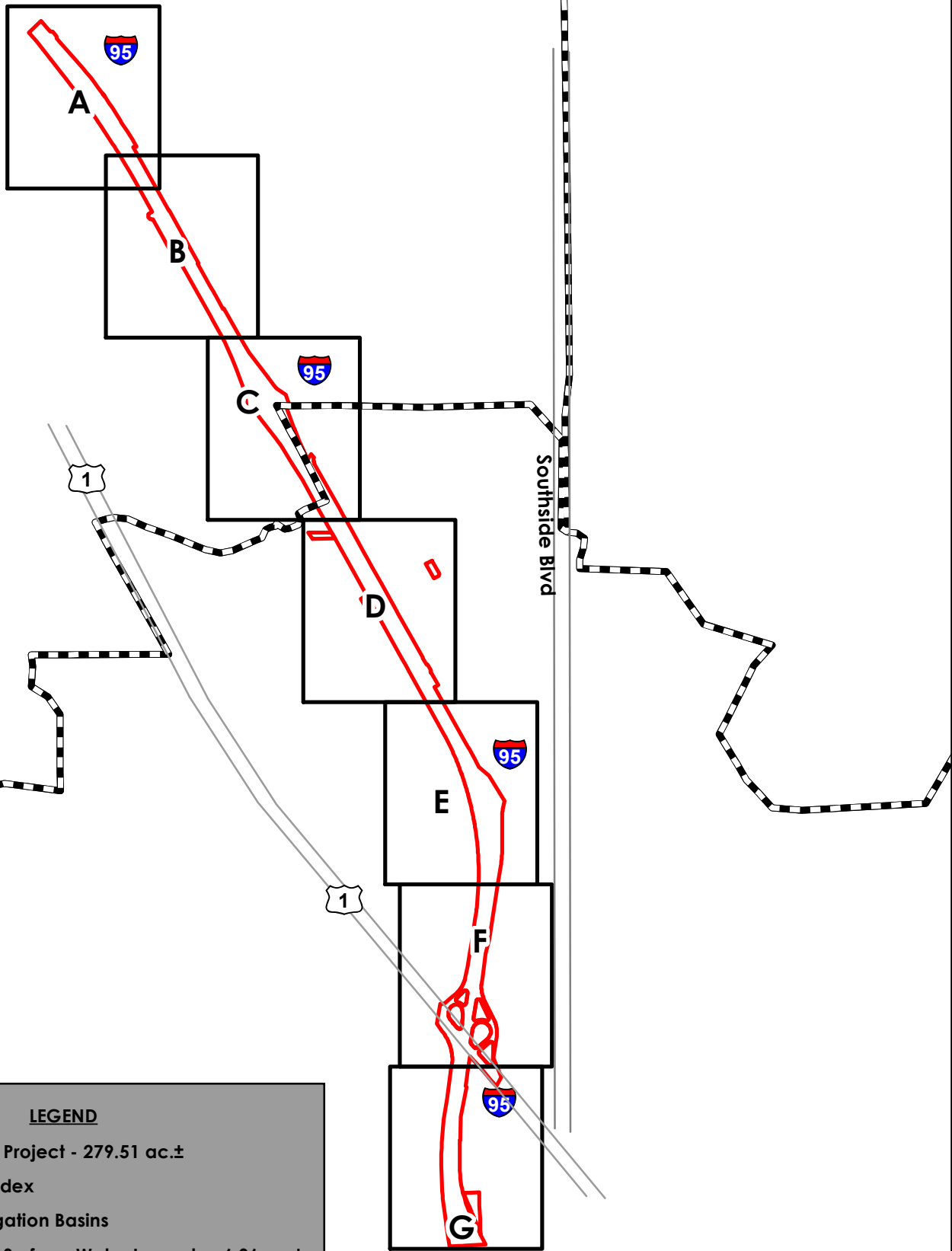


**I-95 From I-295 to SR 202 (Butler)**  
**FIN 435577-1**  
**Soils Map C**  
**Duval County, Florida**

Project No.:	20103
Exhibit No.:	5-C
Date:	7-13-20
Rev. Date:	

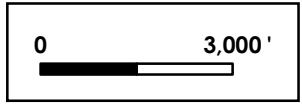


**Exhibit 6 – Wetland/Surface Waters Impact Maps**



**LEGEND**

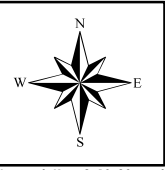
- Approximate Project - 279.51 ac.±
- Detail Map Index
- SJRWMD Mitigation Basins
- Approximate Surface Water Impacts - 6.96 ac.±
- Approximate Wetland Impacts - 30.38 ac.±

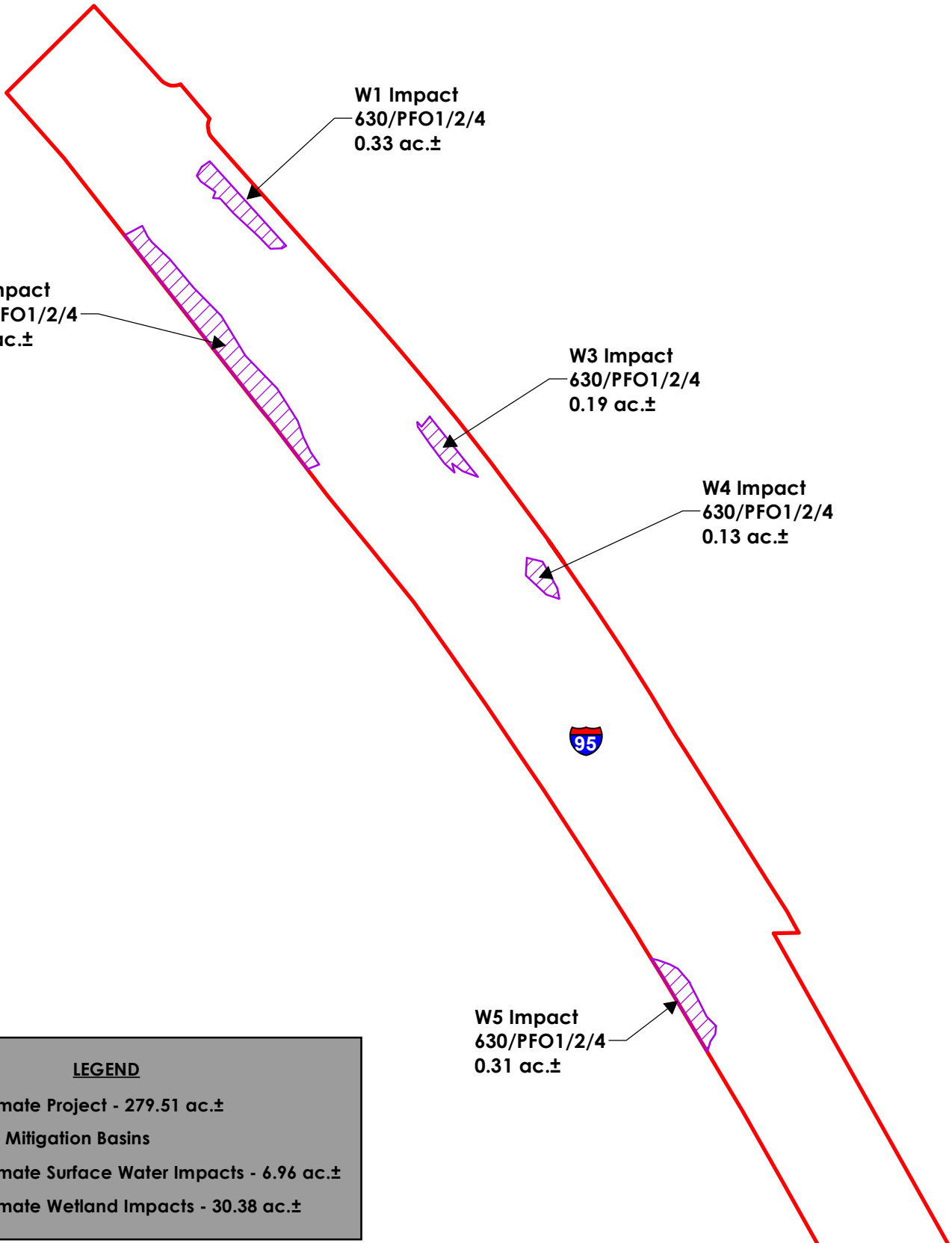


By: NEE





**I-95 From I-295 to SR 202 (Butler)  
FIN 435577-1  
Wetland/Surface Waters Impact Map**

Project No.:	20103
Exhibit No.:	6-Key
Date:	7-13-20
Rev. Date:	





**LEGEND**

-  Approximate Project - 279.51 ac.±
-  SJRWMD Mitigation Basins
-  Approximate Surface Water Impacts - 6.96 ac.±
-  Approximate Wetland Impacts - 30.38 ac.±



By: NEE

**I-95 From I-295 to SR 202 (Butler)  
FIN 435577-1  
Wetland/Surface Waters Impact Map A**

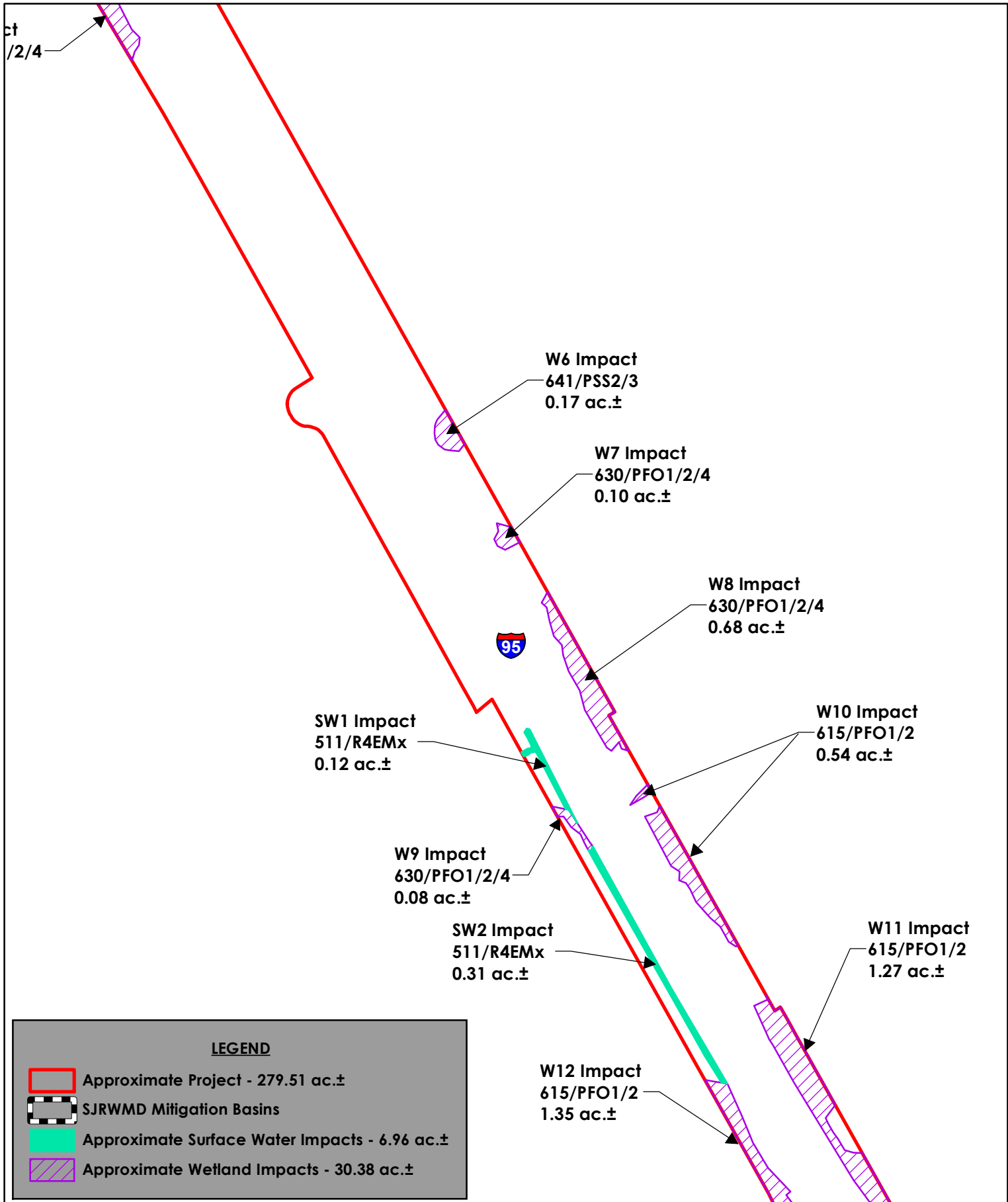
Project No.: 20103

Exhibit No.: 6-A

Date: 7-13-20

Rev. Date:





**LEGEND**

- Approximate Project - 279.51 ac.±
- SJRWMD Mitigation Basins
- Approximate Surface Water Impacts - 6.96 ac.±
- Approximate Wetland Impacts - 30.38 ac.±



By: NEE

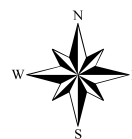
**I-95 From I-295 to SR 202 (Butler)  
FIN 435577-1  
Wetland/Surface Waters Impact Map B**

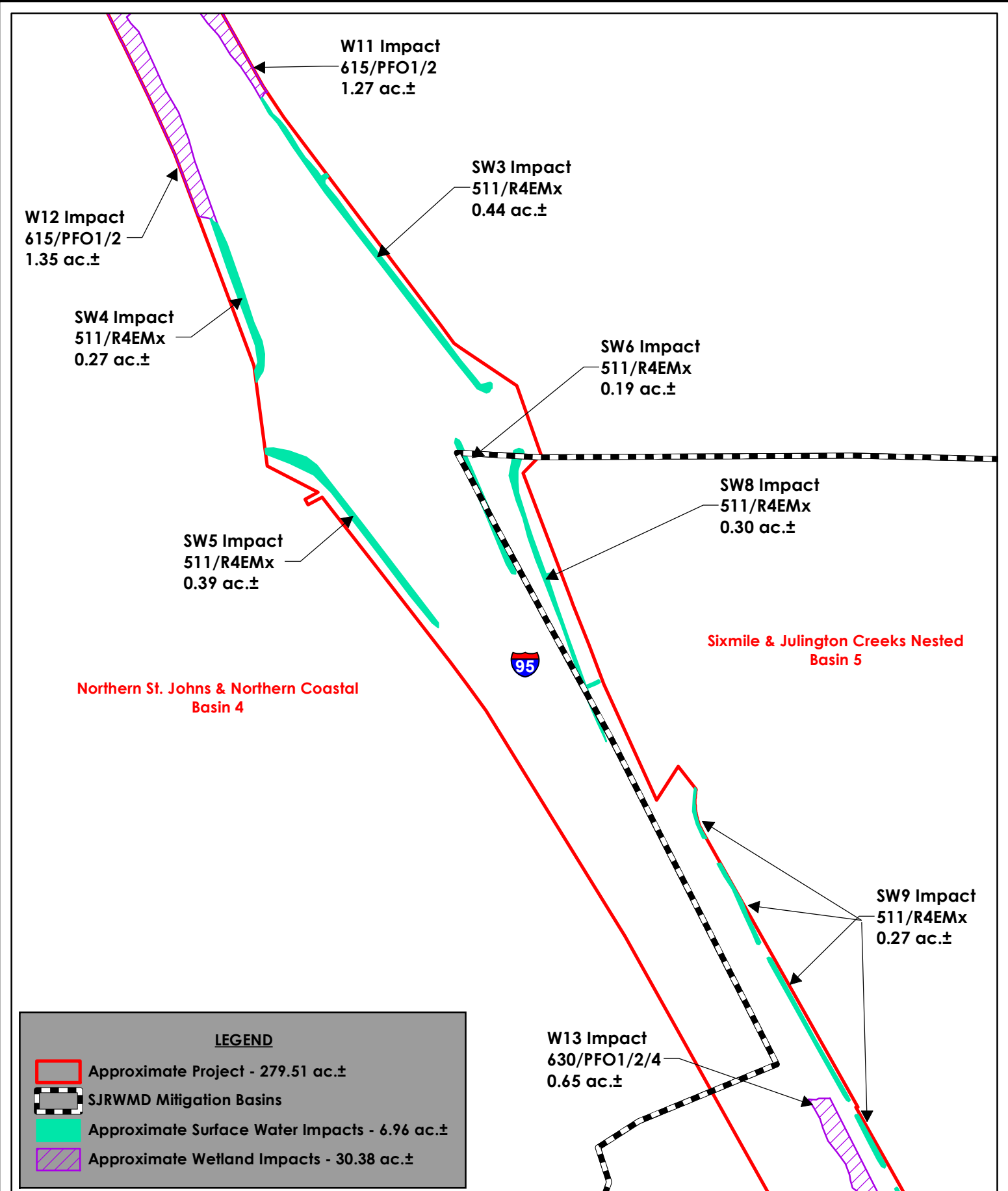
Project No.: 20103

Exhibit No.: 6-B

Date: 7-13-20

Rev. Date:

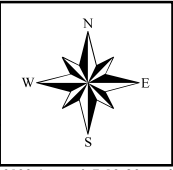




By: NEE

**I-95 From I-295 to SR 202 (Butler)**  
**FIN 435577-1**  
**Wetland/Surface Waters Impact Map C**

Project No.:	20103
Exhibit No.:	6-C
Date:	7-13-20
Rev. Date:	





W13 Impact  
630/PFO1/2/4  
0.65 ac.±

SW10 Impact  
511/R4EMx  
0.09 ac.±

E-2

W14 Impact  
617/PFO1  
1.79 ac.±

W16 Impact  
615/PFO1/2  
0.82 ac.±

SW11 Impact  
510/R3UB3x  
0.02 ac.±

D-3

SW12 Impact  
510/R3UB3x  
0.06 ac.±

W15 Impact  
630/PFO1/2/4  
0.16 ac.±


D-1

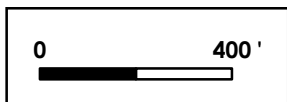


W17 Impact  
630/PFO1/2/4  
0.24 ac.±

W18 Impact  
630/PFO1/2/4  
0.62 ac.±

**LEGEND**

-  Approximate Project - 279.51 ac.±
-  SJRWMD Mitigation Basins
-  Approximate Surface Water Impacts - 6.96 ac.±
-  Approximate Wetland Impacts - 30.38 ac.±



By: NEE

I-95 From I-295 to SR 202 (Butler)  
FIN 435577-1  
Wetland/Surface Waters Impact Map D

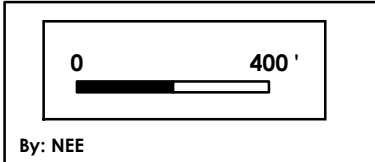
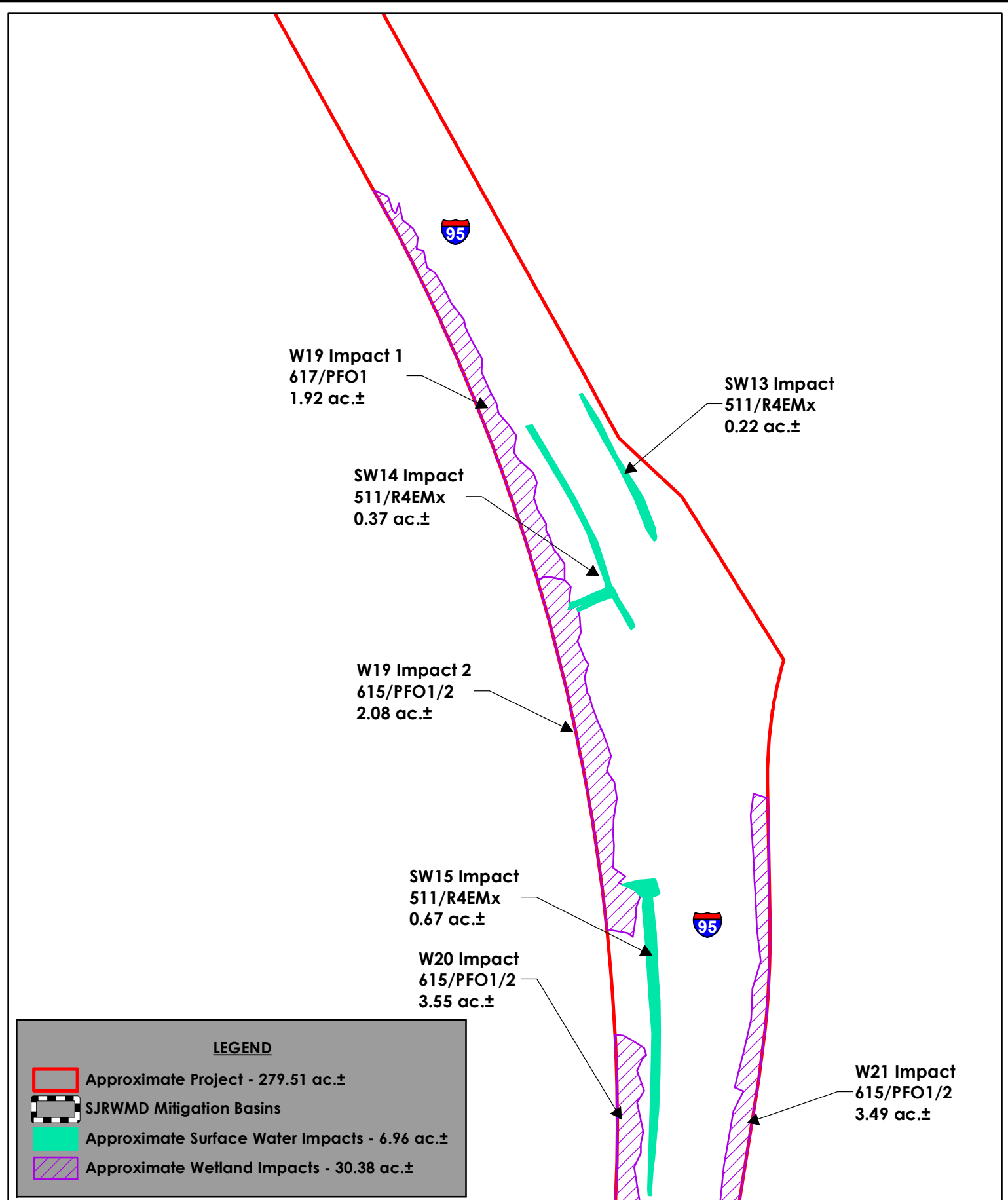
Project No.: 20103

Exhibit No.: 6-D

Date: 7-13-20

Rev. Date:





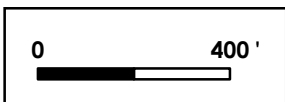
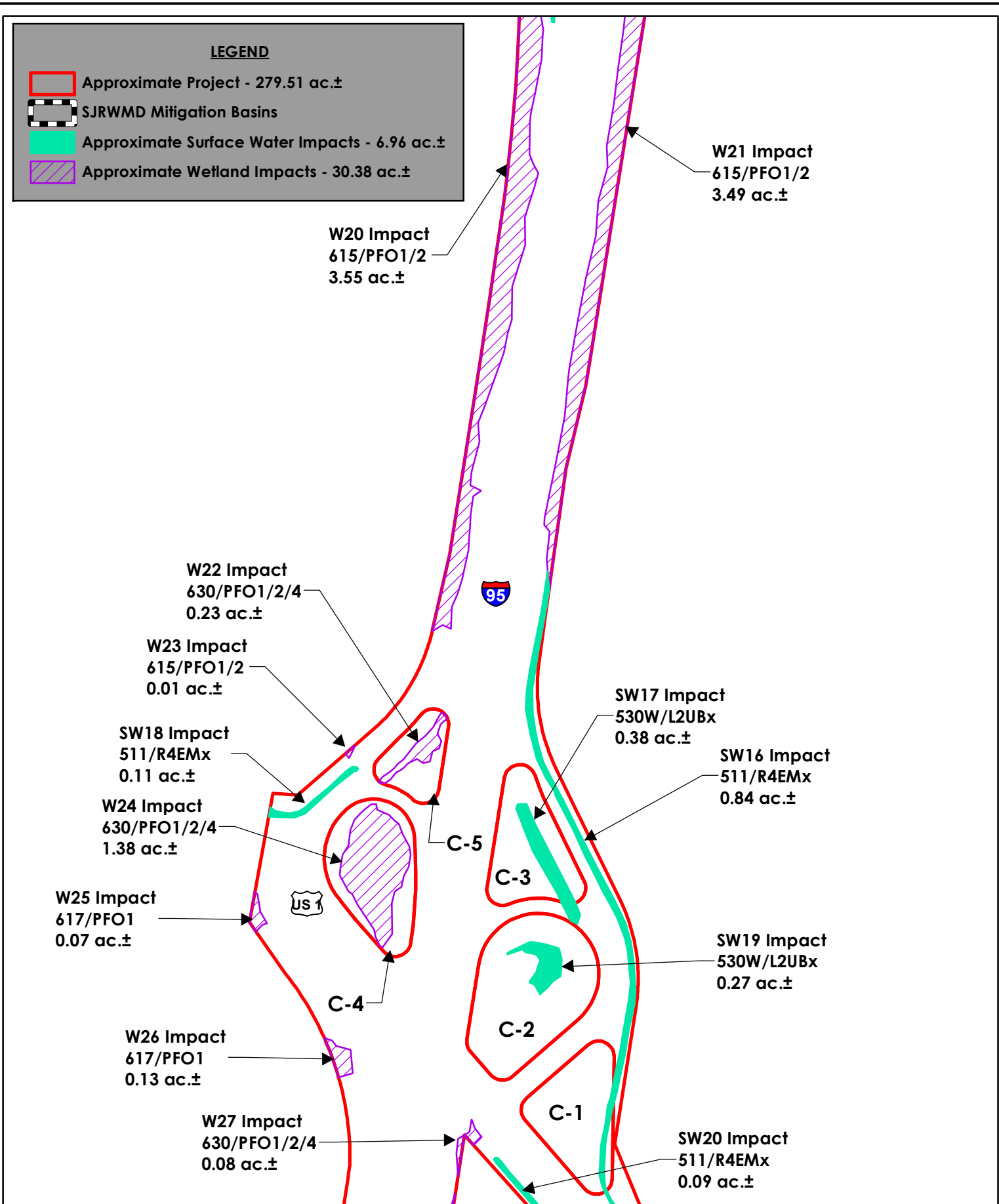
I-95 From I-295 to SR 202 (Butler)  
FIN 435577-1  
Wetland/Surface Waters Impact Map E

Project No.:	20103
Exhibit No.:	6-E
Date:	7-13-20
Rev. Date:	



**LEGEND**

-  Approximate Project - 279.51 ac.±
-  SJRWMD Mitigation Basins
-  Approximate Surface Water Impacts - 6.96 ac.±
-  Approximate Wetland Impacts - 30.38 ac.±



By: NEE

**I-95 From I-295 to SR 202 (Butler)  
FIN 435577-1  
Wetland/Surface Waters Impact Map F**

Project No.: 20103

Exhibit No.: 6-F

Date: 7-13-20

Rev. Date:



W28 Impact  
617/PFO1  
0.01 ac.±

SW16 Impact  
511/R4EMx  
0.84 ac.±

W29 Impact  
630/PFO1/2/4  
0.11 ac.±

SW21 Impact  
511/R4EMx  
0.06 ac.±

W30 Impact  
630/PFO1/2/4  
1.23 ac.±

SW22 Impact  
511/R4EMx  
0.4 ac.±





W31 Impact  
617/PFO1  
2.72 ac.±

B-1

W32 Impact  
630/PFO1/2/4  
2.81 ac.±

SW23 Impact  
530W/L2UBx  
0.96 ac.±

**LEGEND**

-  Approximate Project - 279.51 ac.±
-  SJRWMD Mitigation Basins
-  Approximate Surface Water Impacts - 6.96 ac.±
-  Approximate Wetland Impacts - 30.38 ac.±



I-95 From I-295 to SR 202 (Butler)  
FIN 435577-1  
Wetland/Surface Waters Impact Map G

Project No.:	20103
Exhibit No.:	6-G
Date:	7-13-20
Rev. Date:	







By: NEE

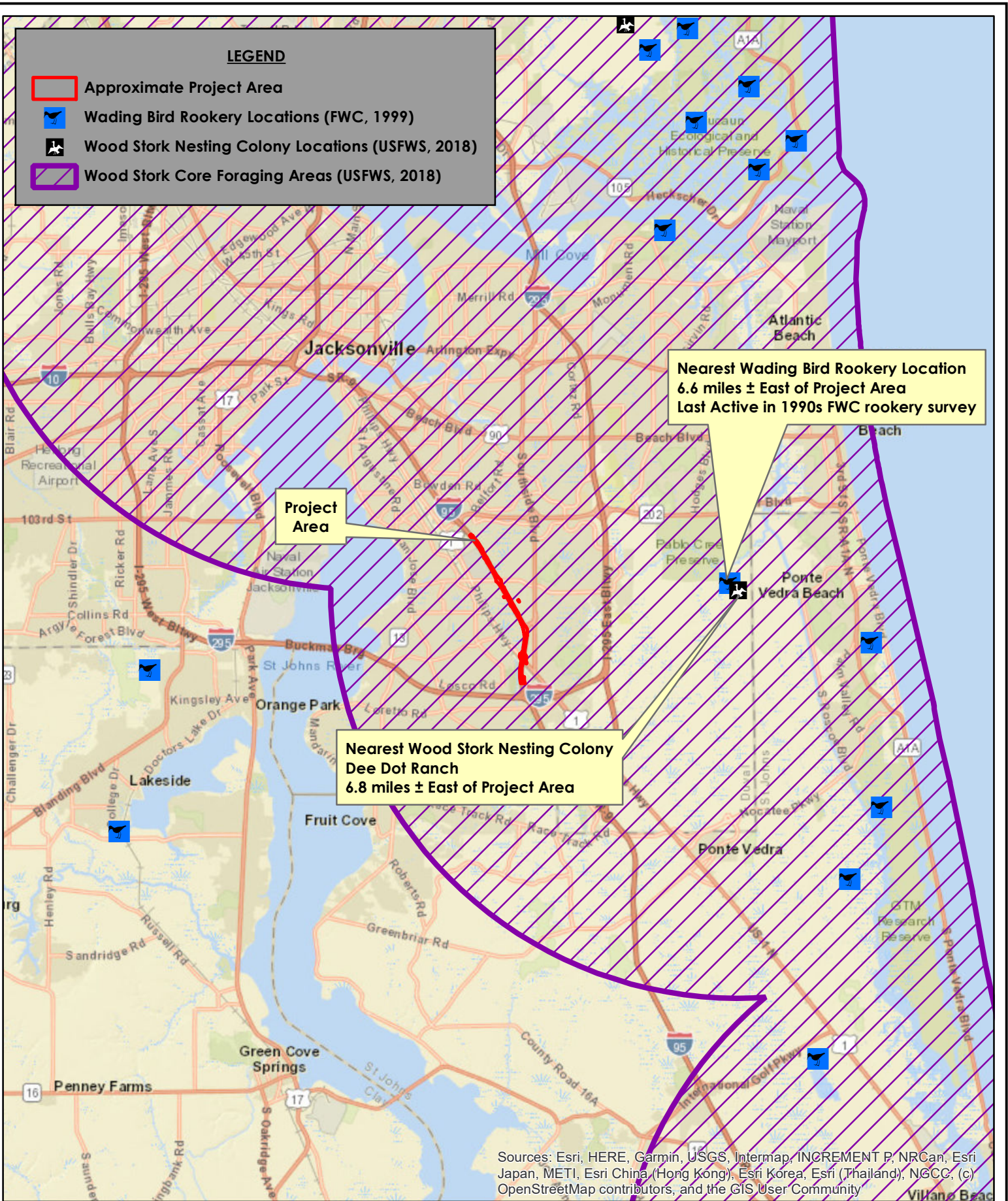
Source: ArcGIS Online Imagery

X:\2020\20103\Graphics\mxd\20103\_Impact\_7-13-20.mxd

**Exhibit 7 – Documented Occurrences of Wading Bird Rookeries  
and Wood Stork Occurrences / CFAs**

**LEGEND**

-  Approximate Project Area
-  Wading Bird Rookery Locations (FWC, 1999)
-  Wood Stork Nesting Colony Locations (USFWS, 2018)
-  Wood Stork Core Foraging Areas (USFWS, 2018)



**Project Area**

**Nearest Wading Bird Rookery Location**  
6.6 miles ± East of Project Area  
Last Active in 1990s FWC rookery survey

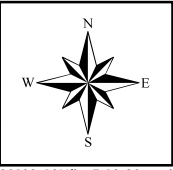
**Nearest Wood Stork Nesting Colony**  
Dee Dot Ranch  
6.8 miles ± East of Project Area

Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NCCO, (c) OpenStreetMap contributors, and the GIS User Community



**I-95 From I-295 to SR 202 (Butler)**  
**FIN 435577-1**  
**Documented Occurrences of Wading Bird Rookeries and Wood Stork Nesting Colonies/CFAs**

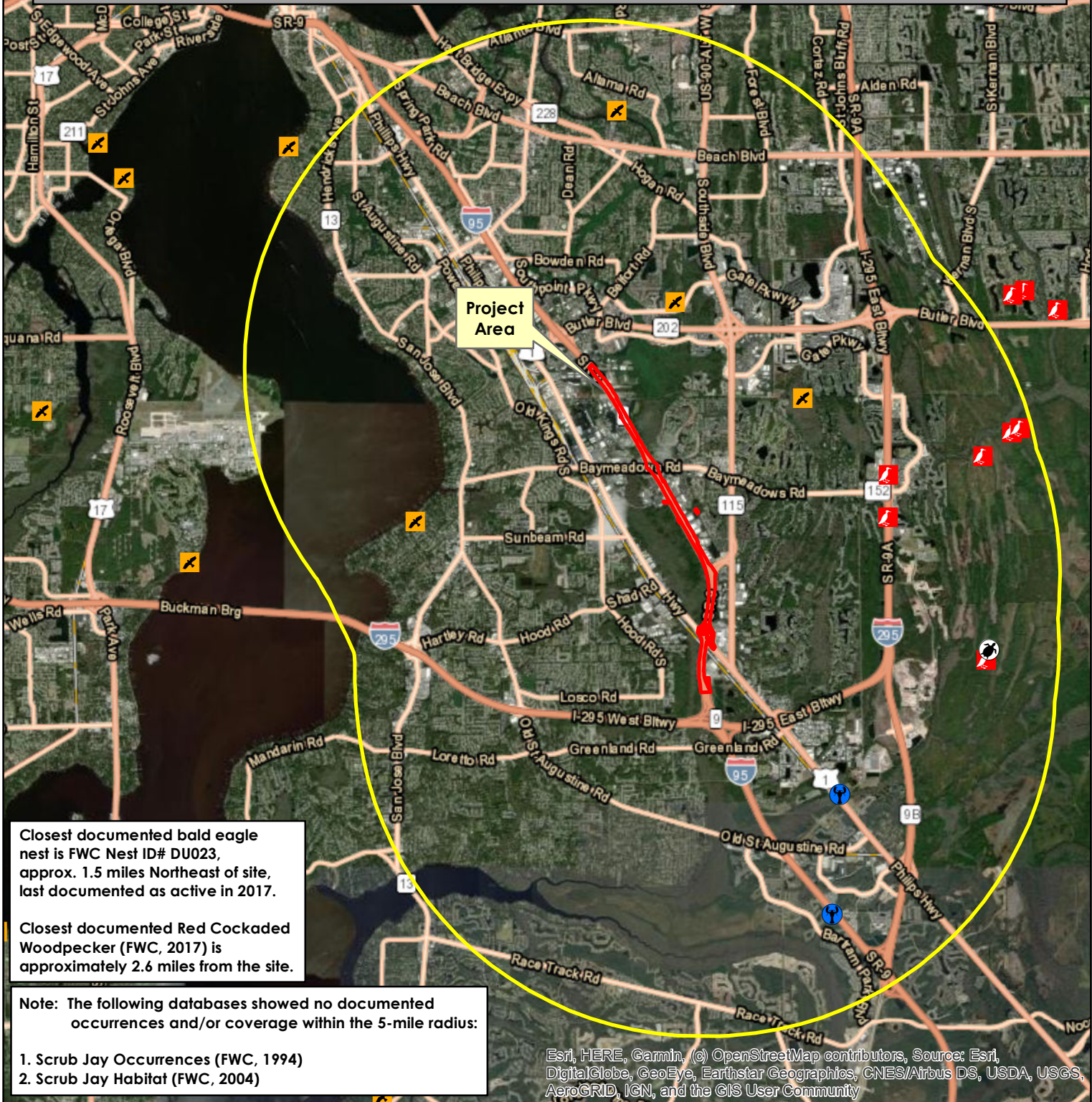
Project No.:	20103
Exhibit No.:	7
Date:	7-13-20
Rev. Date:	



**Exhibit 8 – Documented Occurrences of Protected Wildlife Within 5 Miles**

**LEGEND**

- Approximate Project Area
- 5 Mile Radius of Project Area
- ✂ Bald Eagle Nest Locations (FWC, 2017)
- ♂ Red Cockaded Woodpecker Occurrences (FWC, 2017)
- ♁ FNAI Occurrences of Protected Wildlife (May 2018)  
(Documented Observation Date; Distance from Site)
- ♁ Black Creek Crayfish (2009; 2.4 Miles)
- ♁ Gopher Tortoise (1987-Pre; 4.0 Miles)



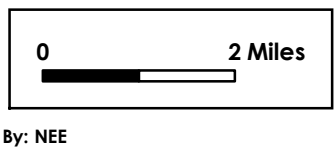
Closest documented bald eagle nest is FWC Nest ID# DU023, approx. 1.5 miles Northeast of site, last documented as active in 2017.

Closest documented Red Cockaded Woodpecker (FWC, 2017) is approximately 2.6 miles from the site.

**Note:** The following databases showed no documented occurrences and/or coverage within the 5-mile radius:

1. Scrub Jay Occurrences (FWC, 1994)
2. Scrub Jay Habitat (FWC, 2004)

Esri, HERE, Garmin, (c) OpenStreetMap contributors, Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



**I-95 From I-295 to SR 202 (Butler)  
FIN 435577-1  
Documented Occurrences of  
Protected Wildlife Within 5 Miles**

Project No.:	20103
Exhibit No.:	8
Date:	7-13-20
Rev. Date:	





**APPENDIX B**  
**Federally-listed and candidate species and state-listed species –**  
**Duval County**

Federally-listed and candidate species and state-listed species – Duval County.				
Scientific Name	Common Name	Federal Status	State Status	Preferred Habitat
<b>Plants</b>				
<i>Agrimonia incisa</i>	Incised Groovebur	N	ST	Sandhills.
<i>Asarum arifolium</i> (= <i>Hexastylis arifolia</i> )	Little Brown Jug	N	ST	Shady hammocks, slopes, and wetland edges.
<i>Asclepias viridula</i>	Southern Milkweed	N	ST	Wet flatwoods and prairies, seepage slopes, pitcherplant bogs.
<i>Balduina atropurpurea</i>	Purple Honeycomb-head	N	SE	Wet pine flatwoods and savannahs, seepage slopes, bogs, and wet ditches.
<i>Calopogon multiflorus</i>	Many-flowered Grass-pink	N	ST	Longleaf pine savannahs and flatwoods.
<i>Calycanthus floridus</i>	Eastern Sweetshrub	N	SE	Mesic hammocks and stream banks.
<i>Calydorea caelestina</i>	Bartram's Ixia	N	SE	Wet to mesic flatwoods.
<i>Carex chapmannii</i>	Chapman's Sedge	N	ST	Swamps, hydric hammocks, seepage slopes, and mesic hammocks.
<i>Centrosema arenicola</i>	Pineland Butterfly Pea	N	SE	Sandhills, scrub, and scrubby flatwoods.
<i>Cleistesiosis divaricata</i>	Rosebud Orchid	N	SE	Wet flatwoods and bogs.
<i>Cleistesiosis oricamporum</i> (= <i>Cleistes bifaria</i> )	Fragrant Pogonia	N	SE	Wet flatwoods.
<i>Coelorachis tuberculosa</i>	Piedmont Jointgrass	N	ST	Margins or shallows of lakes and ponds.
<i>Ctenium floridanum</i>	Florida Toothache Grass	N	SE	Sandhills and other dry pinelands.
<i>Drosera intermedia</i>	Water Sundew	N	ST	Pond margins, bogs, and marshes.
<i>Forestiera godfreyi</i>	Godfrey's Swampprivet	N	SE	Upland hardwood forests with limestone near surface, often on slopes above lakes and rivers.
<i>Gonolobus suberosus</i> (= <i>Matelea gonocarpus</i> )	Angle Pod	N	ST	Hammocks.
<i>Hartwrightia floridana</i>	Hartwrightia	N	ST	Seepage slopes and burned wet pine flatwoods.
<i>Helianthus carnosus</i>	Lakeside Sunflower	N	SE	Wet flatwoods and prairies.
<i>Hexalectris spicata</i>	Spiked Crested Coralroot	N	SE	Calcareous hammocks and shell middens.
<i>Isoetes appalachiana</i>	Appalachian Quillwort	N	SE	Ephemeral woodland pools and swampy streams.
<i>Lantana depressa</i> var. <i>floridana</i>	Atlantic Coast Florida Lantana	N	SE	Stabilized dunes of Atlantic coast barrier islands
<i>Lilium catesbaei</i>	Pine Lily	N	ST	Pine savannahs, marshes, flatwoods, and bogs.
<i>Litsea aestivalis</i>	Pondspice	N	SE	Pond margins, cypress dome and swamp edges.
<i>Lobelia cardinalis</i>	Cardinalflower	N	ST	Swamps, riverbanks, and cypress domes.

Federally-listed and candidate species and state-listed species – Duval County.				
Scientific Name	Common Name	Federal Status	State Status	Preferred Habitat
<i>Matelea flavidula</i>	Yellow Carolina Milkvine	N	SE	Wooded slopes and bluff forests.
<i>Matelea floridana</i>	Florida Milkvine	N	SE	Hammocks.
<i>Mesadenus lucayanus</i> (= <i>Sprianthes polyantha</i> )	Florida Keys Ladies'-tresses	N	SE	Rock outcrops in mesic hammock, rockland hammock, maritime hammock.
<i>Myriopteris microphylla</i>	Southern Lip Fern	N	SE	Rock outcrops and shell mounds.
<i>Neottia bifolia</i>	Southern twayblade	N	ST	Bogs and swamps.
<i>Opuntia stricta</i>	Erect Pricklypear	N	ST	Dunes, coastal scrub, maritime hammock edges, and coastal ruderal areas.
<i>Orbexilum virgatum</i>	Pineland Leatherroot	N	SE	Pine flatwoods and savannahs, usually in moist soils.
<i>Orthochilus ecristatus</i> (= <i>Pteroglossaspis ecristata</i> )	Giant Orchid	N	ST	Sandhill, scrub, pine flatwoods, and pine rocklands.
<i>Pecluma plumula</i>	Plume Polypody	N	SE	Epiphytic on tree branches or on limestone in hammocks and swamps.
<i>Pecluma ptilota</i> var. <i>bourgeauana</i>	Comb Polypody	N	SE	Rockland hammocks and wet woods, often on tree bases and fallen logs.
<i>Peperomia humilis</i>	Terrestrial Peperomia	N	SE	Shell mounds and outcrops in mesic hammocks, coastal berms, and cypress swamps
<i>Pinguicula caerulea</i>	Blueflower Butterwort	N	ST	Marshes, swamp edges, and wet flatwoods.
<i>Pinguicula lutea</i>	Yellow Butterwort	N	ST	Sandy bogs and open wet flatwoods.
<i>Platanthera blephariglottis</i> var. <i>conspicua</i>	White Fringed Orchid	N	ST	Bogs, swamps, and marshes.
<i>Platanthera chapmanii</i>	Chapman's Fringed Orchid	N	SE	Bogs, swamps, and marshes.
<i>Platanthera ciliaris</i>	Yellow Fringed Orchid	N	ST	Bogs, swamps, and marshes.
<i>Platanthera cristata</i>	Crested Yellow Orchid	N	ST	Wet flatwoods and bogs.
<i>Platanthera flava</i>	Gypsy-spikes	N	ST	Prairies, marshes, and wet flatwoods.
<i>Platanthera integra</i>	Orange Reinorchid	N	SE	Wet flatwoods and bogs.
<i>Platanthera nivea</i>	Snowy Orchid	N	ST	Bogs, swamps, and marshes.
<i>Pogonia ophioglossoides</i>	Rose Pogonia	N	ST	Wet pine savannahs and flatwoods.
<i>Pycnanthemum floridanum</i>	Florida Mountainmint	N	ST	Sandhills, mesic forest and disturbed areas.
<i>Ruellia noctiflora</i>	Nightflowering Wild Petunia	N	SE	Wet flatwoods, seepage slopes, hydric hammock.
<i>Sarracenia minor</i>	Hooded Pitcherplant	N	ST	Wet flatwoods, swamps, marshes, and bogs.
<i>Schoenolirion croceum</i>	Yellow Sunnybell	N	SE	Wet pine flatwoods and bogs.
<i>Schwalbea americana</i>	Chaff-seed	E	FE	Fire-maintained longleaf pine savannahs, sandhills, flatwoods, and ecotones between sandhills and ponds.

Federally-listed and candidate species and state-listed species – Duval County.				
Scientific Name	Common Name	Federal Status	State Status	Preferred Habitat
				Semi-parasitic on roots of <i>Ilex glabra</i> , <i>Gaylussacia</i> , <i>Hypericum</i> , etc.
<i>Sideroxylon alachuense</i>	Silver buckthorn	N	SE	Upland hardwood forests around limestone sinks and on shell mounds.
<i>Spiranthes brevilabris</i>	Texas Ladies-Tresses	N	SE	Wet prairies and flatwoods.
<i>Spiranthes longilabris</i>	Longlip Ladies-tresses	N	ST	Wet prairies and flatwoods.
<i>Verbesina heterophylla</i>	Variable-leaf Crownbeard	N	SE	Mesic flatwoods and dry woods.
<i>Zephyranthes atamasca</i> var. <i>atamasca</i>	Rainlily	N	ST	Swamps, floodplains, wet prairies, and wet roadsides.
<i>Zephyranthes atamasca</i> var. <i>treatiae</i>	Treat's Rainlily	N	ST	Swamps, floodplains, wet prairies and wet roadsides.
<b>Crustaceans</b>				
<i>Procambarus pictus</i> **	Black Creek Crayfish	N	ST	Small high quality tannic streams.
<b>Fish</b>				
<i>Acipenser brevirostrum</i> **	Shortnose Sturgeon	E	FE	Large rivers and coastal waterways. Formerly bred in the Ocklawaha River before the Rodman Dam was constructed.
<i>Acipenser oxyrinchus oxyrinchus</i> *	Atlantic Sturgeon	E	FE	Atlantic Ocean and portions of large river systems.
<i>Pristis pectinata</i>	Smalltooth Sawfish	E	FE	Open sea, estuaries, bays, and river mouths.
<b>Amphibians</b>				
<i>Ambystoma cingulatum</i>	Frosted Flatwoods Salamander	T	FT	Flatwoods with wiregrass and interspersed wetlands; breeds in small ponds and seasonally flooded wetlands.
<b>Reptiles</b>				
<i>Caretta caretta</i>	Loggerhead Sea Turtle	T	FT	Open sea, bays, lagoons, creeks; beaches for nesting.
<i>Chelonia mydas</i>	Green Sea Turtle	T	FT	Open sea, inshore bays, tidal creeks; beaches for nesting.
<i>Dermochelys coriacea</i> *	Leatherback Sea Turtle	E	FE	Open sea; beaches for nesting.
<i>Drymarchon corais couperi</i> *	Eastern Indigo Snake	T	FT	Linked to xeric habitats and gopher tortoise burrows, but also uses other natural habitats such as swamps and freshwater marshes as foraging habitat.
<i>Eretmochelys imbricata</i> *	Hawksbill Sea Turtle	E	FE	Open sea, coastal lagoons and waterways, mangroves; beaches for nesting.
<i>Gopherus polyphemus</i> *	Gopher Tortoise	C	ST	Sandhills, scrub, dry flatwoods, dry ruderal areas.
<i>Lepidochelys kempii</i> *	Kemp's Ridley Sea Turtle	E	FE	Open sea, bays, lagoons, inlets; beaches for nesting.
<i>Pituophis melanoleucus</i> **	Pine Snake	N	ST	Sandhill, sand pine scrub and scrubby flatwoods.

**Federally-listed and candidate species and state-listed species – Duval County.**

Scientific Name	Common Name	Federal Status	State Status	Preferred Habitat
<b>Birds</b>				
<i>Athene cunicularia floridana</i> **	Florida Burrowing Owl	N	ST	Open prairies with little vegetation.
<i>Calidris canutus rufa</i>	Red Knot	T	FT	Migratory in large flocks; requires beaches and shallow coastal waters for stopover feeding.
<i>Charadrius melodus</i> *	Piping Plover	T/CH	FT	Beaches, sandflats, and mudflats.
<i>Cistothorus palustris griseus</i> **	Worthington's Marsh Wren	N	ST	Tidal marshes dominated by cordgrass.
<i>Egretta caerulea</i> **	Little Blue Heron	N	ST	Forages in a wide variety of freshwater, brackish, and saline wetlands and waterways, including ponds and ditches. Prefers freshwater habitats. Nests in mixed colonies in flooded trees or shrubs or on islands.
<i>Egretta tricolor</i> **	Tricolored Heron	N	ST	Forages in a wide variety of freshwater, brackish, and saline wetlands and waterways, including ponds and ditches. Prefers coastal habitats. Nests in mixed colonies in flooded trees or shrubs or on islands.
<i>Falco sparverius paulus</i> **	Southeastern American Kestrel	N	ST	Upland pinelands (flatwoods, sandhills, pastures, and old fields). Requires open areas for foraging, and nest cavities (dead trees, nest boxes, etc.) for breeding.
<i>Haematopus palliatus</i>	American Oystercatcher	N	ST	Occurs in beaches, sandbars, spoil islands, shall rakes, salt march, and oyster reefs.
<i>Laterallus jamaicensis jamaicensis</i>	Eastern Black Rail	PT	N	Primarily occurs in tidal saltmarsh, but can also occur in freshwater wetlands, coastal prairies, and grassy fields.
<i>Mycteria americana</i>	Wood Stork	T	FT	Forages in a wide variety of freshwater and brackish wetlands and waterways, including ponds and ditches. Prefers waterbodies that have shallow or variable water levels to concentrate fish prey. Nests in colonies in flooded trees or on islands.
<i>Picoides borealis</i>	Red-cockaded Woodpecker	E	FE	High quality fire-maintained upland pine forest with mature pines with heart rot for nesting.
<i>Platalea ajaja</i> **	Roseate Spoonbill	N	ST	Forages in a wide variety of freshwater, brackish, and saline wetlands and waterways, including ponds and ditches. Prefers coastal habitats. Nests in mixed colonies in mangroves, willow heads, or spoil islands.
<i>Rynchops niger</i> **	Black Skimmer	N	ST	Estuaries, beaches, and sandbars.
<i>Sternula antillarum</i> **	Least Tern	N	ST	Coastal areas, including estuaries and bays.
<b>Mammals</b>				
<i>Eubalaena glacialis</i>	North Atlantic Right Whale	E	FE	Open ocean. Gives birth near the Atlantic shoreline between December and March.
<i>Trichechus manatus</i> **	West Indian Manatee	T/CH	FT	Estuaries, tidal rivers, springs, and spring runs.

**Legal Status and Notes**

**Federally-listed Species (FWS)**

**C** = Candidate species for which federal listing agencies have sufficient information on biological vulnerability and threats to support proposing to list the species as endangered or threatened.

**CH** = Critical Habitat has been designated in the county in which the project is located.

**E** = Endangered: species in danger of extinction throughout all or a significant portion of its range.

**T** = Threatened: species likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

**PT** = Proposed threatened.

**Federally-listed and candidate species and state-listed species – Duval County.**

Scientific Name	Common Name	Federal Status	State Status	Preferred Habitat
<p>N = Not federally-listed.                      * = This species is included in a FWS Recovery Plan.                      Recovery plans can be found at: <a href="https://ecos.fws.gov/ecp0/pub/speciesRecovery.jsp?sort=1">https://ecos.fws.gov/ecp0/pub/speciesRecovery.jsp?sort=1</a>  <b>State-listed Species</b>                      SAT = Listed as threatened for similarity of appearance.                      SSC = Species of Special Concern.                      SE = State endangered.                      ST = State threatened.                      FE = Federally endangered.                      FT = Federally threatened.                      ** = FWC has developed a draft or final Permitting Guidelines document for this species. Permitting guidelines can be found at:  <a href="https://myfwc.com/wildlifehabitats/wildlife/species-guidelines/">https://myfwc.com/wildlifehabitats/wildlife/species-guidelines/</a></p>				

**APPENDIX C**  
**UMAM Summary Sheets**

site: I-95 - Basin 4

date: 9/10/2020

20103

Impacts	Habitat Type	Location and Landscape Support		Water Environment		Community Structure		Acres	Functional Loss
		before	after	before	after	before	after		
	630/PFO1/2/4	5	0	6	0	6	0	2.950	1.67
	641/PEM1	5	0	5	0	5	0	0.170	0.09
	617/PFO1	5	0	7	0	7	0	0.000	0.00
	615/PFO1/2	5	0	8	0	8	0	3.160	2.21
		0	0	0	0	0	0	0.000	0.00
		0	0	0	0	0	0	0.000	0.00
		0	0	0	0	0	0	0.000	0.00
		0	0	0	0	0	0	0.000	0.00

Total Impact Acres	6.280	Total Creation Acres	0	Total Enhancement Provided	0	Upland Acres Provided	0
Total Functional Loss	3.97	Total Functional Gain Units	0.000				

Mitigation	Habitat Type	Location and Landscape Support		Water Environment		Community Structure		Time Lag	Risk Factor	Preservation Adjustment Factor	Relative Functional Gain	Acres Provided	Functional Gain Units
		before	after	before	after	before	after						
Preservation								1	1.00		0.0000		
1								1	1.00		0.0000		0.0000
2								1	1.00		0.0000		0.0000
3								1	1.00		0.0000		0.0000
4								1	1.00		0.0000		0.0000
5								1	1.00		0.0000		0.0000
creation													
1								1	1.00		0.0000		0.0000
2								1	1.00		0.0000		0.0000
uplands													
11				x	x	x		1	1.00		0.0000		0.0000
12				x	x	x		1	1.00		0.0000		0.0000
13				x	x	x		1	1.00		0.0000		0.0000
14				x	x	x		1	1.00		0.0000		0.0000
15				x	x	x		1	1.00		0.0000		0.0000



site: I-95 - Basin 5

date: 9/10/2020

20103

Impacts	Habitat Type	Location and Landscape Support		Water Environment		Community Structure		Acres	Functional Loss
		before	after	before	after	before	after		
	630/PFO1/2/4	5	0	6	0	6	0	7.510	4.26
	641/PEM1	5	0	5	0	5	0	0.000	0.00
	617/PFO1	5	0	7	0	7	0	6.640	4.21
	615/PFO1/2	5	0	8	0	8	0	9.950	6.97
		0	0	0	0	0	0	0.000	0.00
		0	0	0	0	0	0	0.000	0.00
		0	0	0	0	0	0	0.000	0.00
		0	0	0	0	0	0	0.000	0.00

<b>Total Impact Acres</b>	<b>24.100</b>	<b>Total Creation Acres</b>	<b>0</b>	<b>Total Enhancement Provided</b>	<b>0</b>	<b>Upland Acres Provided</b>	<b>0</b>
<b>Total Functional Loss</b>	<b>15.44</b>	<b>Total Functional Gain Units</b>	<b>0.000</b>				

Mitigation	Habitat Type	Location and Landscape Support		Water Environment		Community Structure		Time Lag	Risk Factor	Preservation Adjustment Factor	Relative Functional Gain	Acres Provided	Functional Gain Units
		before	after	before	after	before	after						
Preservation								1	1.00		0.0000		0.0000
1								1	1.00		0.0000		0.0000
2								1	1.00		0.0000		0.0000
3								1	1.00		0.0000		0.0000
4								1	1.00		0.0000		0.0000
5								1	1.00		0.0000		0.0000
creation													
1								1	1.00		0.0000		0.0000
2								1	1.00		0.0000		0.0000
uplands													
11				x	x	x		1	1.00		0.0000		0.0000
12				x	x	x		1	1.00		0.0000		0.0000
13				x	x	x		1	1.00		0.0000		0.0000
14				x	x	x		1	1.00		0.0000		0.0000
15				x	x	x		1	1.00		0.0000		0.0000