

<b>Technical Memorandum</b>	
RE: Lem Turner Road (SR 115) Over Trout River Bridge Replacement Bridge No: 720033 FM: 437437-2-22-01 Natural Resources Evaluation Addendum Technical Memorandum - FINAL	SER Job No.: 21092.02
To: Keith Travis, P.E., Parsons	
From: Ken Ceglady, ESL	Date: August 24, 2023

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

## **INTRODUCTION**

### **Project Overview**

The Florida Department of Transportation, District 2 (FDOT) is conducting a Project Development and Environment (PD&E) study in compliance with the National Environmental Policy Act (NEPA) for the replacement of the State Road (SR) 115 (Lem Turner Road) bridge (Bridge #720033) over the Trout River in Duval County. As part of this study, a Natural Resources Evaluation (NRE) was finalized in September 2021 that covered two build alternatives (Alternatives 1 and 2). Since then, a third alternative (Alternative 3) has been developed and selected as the recommended alternative. Alternative 3 is the subject of this NRE Technical Memorandum that serves as an addendum to the original NRE. The project study area for Alternative 3 extends from north of Woodland Avenue to south of Date Street. Within the project study area, SR 115 is a four-lane urban minor arterial. The existing bridge and Lem Turner Road on the south approach to the bridge is a four-lane undivided facility; it is a four-lane divided facility on the north approach. The total length of the bridge is 742 feet. The general project location is shown on **Figure 1** below. For more information regarding the location of the bridge in Duval County, see **Exhibit 1 (Appendix A)**.



Figure 1. Approximate project limits.

Trout River is a navigable tidal waterway with a channel depth of 22 feet under the existing bridge. This bridge provides a 40 foot navigational horizontal clearance and a 17.9 foot vertical clearance. The existing bridge was constructed in 1957 and is currently considered structurally deficient. The bridge structure has undergone several renovations to extend its service life, including a fender replacement in 2005, the installment of pile jackets as part of a cathodic protection in 2012, and the installation of cross brace struts to stabilize the bridge piers in 2021 that had been compromised due to scour. Despite these renovations, the bridge is still in need of replacement.

The proposed project is identified in the Efficient Transportation Decision Making (ETDM) system as Project #14449 entitled "Lem Turner Road (SR 115) over Trout River Bridge Replacement." The purpose of this

Technical Memorandum is to document the potential impacts of an additional build alternative (Alternative 3) on federally-listed and candidate species, state-listed species, wetlands, and Essential Fish Habitat (EFH).

## **Alternatives**

### *No-Build Alternative*

The No-Build Alternative would require closing the bridge due to its deteriorating condition and structural deficiencies. This closure would result in a division of the communities north and south of the bridge and would create a surface road detour distance of approximately 7.5 miles to the east and 8.8 miles to the west.

### *Build Alternative 1*

Build Alternative 1 would replace the existing bridge along the existing alignment with a temporary bridge placed to the west. Build Alternative 1 would require Temporary Construction Easements (TCEs), which would impact five residential parcels along the south end of the bridge to accommodate the temporary bridge. There would be no anticipated impacts to the existing structures located on these parcels. Build Alternative 1 did not include specific locations for new stormwater ponds.

### *Build Alternative 2*

Build Alternative 2 would replace the existing bridge along the existing alignment with a temporary bridge placed to the east. Build Alternative 2 would require the acquisition of new permanent right-of-way (ROW) that would impact two residential parcels (including one existing structure) in the southeastern quadrant of the bridge, and a TCE on the north end that would impact one parcel. Build Alternative 2 did not include specific locations for new stormwater ponds.

### *Build Alternative 3*

New bridge replacement concepts were developed based on a typical section that includes four 11 foot travel lanes, a 7 foot median, and a 10 foot shared use path on each side with a 45 mph design speed. The new bridge would maintain navigational clearances, continue to accommodate four lanes of traffic, and would include pedestrian and bicycle accommodations. This concept also includes the development of two stormwater ponds in the southeastern (Pond 1) and northwestern (Pond 2) quadrants of the existing bridge.

Build Alternative 3 was developed and is now considered the recommended alternative. This alternative would involve the construction of a new bridge offset to the east of the existing bridge. Construction would be completed in phases where the new bridge would be partially constructed east of the existing bridge allowing three lanes of traffic and pedestrian walkway to be maintained on the new bridge structure while the existing bridge structure is demolished. Subsequent phases would construct the remainder of the new bridge to the proposed full typical section and restore all four lanes of traffic. Alternative 3 does not involve a temporary bridge.

The project study area for Alternative 3 was provided by Parsons (the project engineer) in 2023 and includes the existing bridge (which would be eventually demolished), two new stormwater ponds, the footprint of the

proposed realigned bridge, and the TCE that would be necessary to accomplish the proposed work. The footprints of Alternatives 1 and 2, and the estimated impacts incurred by these alternatives, were the subject of the 2021 NRE. This Technical Memorandum serves as an addendum to the 2021 NRE; it presents the estimated impacts of Alternative 3. The impacts of Alternatives 1 and 2 are briefly summarized in the conclusion of this Technical Memorandum to allow comparison with the new Alternative 3.

## EXISTING CONDITIONS

Prior to the initiation of field investigations, 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 boundaries of jurisdictional wetlands and waterways 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. The majority of the jurisdictional wetland boundaries within Alternative 3 were flagged and mapped for the original NRE in June 2021. A short section of additional river edge in the southeastern quadrant of the bridge (whose boundary is largely defined by a residential seawall) was aerially interpreted for this study. The boundaries between vegetated wetlands and open surface waters were also aerially interpreted. Because none of the wetlands or other surface waters have been surveyed or verified by the regulatory agencies, all wetland and surface water boundaries and acreages given in this Technical Memorandum are considered estimates and would be finalized during the permitting process. The habitat types (land cover/land use) which occur within the project study area are depicted on **Exhibit 2A** and **2B (Appendix A)** and described in detail below.

The majority of the project study area consists of existing maintained ROW including travel lanes, road shoulders, mowed and maintained grassy areas, and sidewalks. The only wetlands and waters within the project study area are the Trout River and its associated saltmarsh edges. The project study area contains limited areas of adjacent forested uplands, commercial developments, and residences. The project study area is further described below.

### Special Designations

*Florida Aquatic Preserves, National Wildlife Refuges, Outstanding Florida Waters, Wild and Scenic Rivers, Rivers Listed on the National Rivers Inventory, and Habitat Areas of Particular Concern*

**Exhibit 3 (Appendix A)** shows the Aquatic Preserves, National Wildlife Refuges and Outstanding Florida Waters in the region. This map indicates that none of these resources occur within the project study area. In addition, there are no National Wildlife Refuges, Wild and Scenic Rivers within the project study area. Therefore, the project will not affect any of these resources. For a discussion of Habitat Areas of Particular Concern, see the Essential Fish Habitat section of this report.

### *Critical Habitat*

Critical Habitat has been designated for three species in the coastal Duval County region: North Atlantic right whale (*Eubalaena glacialis*), piping plover (*Charadrius melodus*), and West Indian manatee (*Trichechus manatus*). The St. Johns River and portions of some of its tributaries are considered Designated Critical

Habitat for the manatee, including the portion of the Trout River within the project study area (**Exhibit 3; Appendix A**). All wildlife protection measures at the time of construction will be followed, including those protecting manatees during in-water work. The Protected Species and Habitat Section of this report provides additional information regarding Critical Habitats.

### *Conservation Easements*

Recorded Conservation Easements (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 St. Johns River Water Management District (SJRWMD). Note that this search may not have identified all CEs that may be affected by this project. Based on the SJRWMD data, no conservation easements appear to extend into the project study area. The closest mapped CE lies approximately 400 feet east of the project area, immediately south of a large stormwater pond located adjacent to Broward Road. The easement was recorded on February 27, 2009, in Duval County Official Records Book 14811, Page 274. The boundary of this CE is not likely to extend into the existing ROW of SR 115 nor be affected by the project. Additional work, including boundary location by a licensed surveyor and/or legal research into the status of easements, would be necessary to determine if any other recorded conservation easements would be impacted by the proposed project.

The boundary of the nearest CEs and other public lands depicted on **Exhibit 4 (Appendix A)** are approximate, however, none appear to fall within the boundary of the project study area or in the immediate vicinity. If CEs are verified to occur within the project study area, further research would be necessary to determine their status and what implications they would have on the project. If CEs are to be released as a part of the proposed action, additional mitigation costs would be required to recover the cost of removing a CE over encumbered wetlands.

### **Land cover/Use**

All habitats and land use 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 2A and 2B (Appendix A)**.

## *Uplands*

### Residential, Medium Density (FLUCFCS Code 120)

This classification describes the residential areas within the proposed TCEs and/or acquired ROW south of the Trout River on both sides of SR 115. These areas contain single family home structures and associated landscaping.

### Commercial and Services (FLUCFCS Code 140)

The northeastern quadrant of the project study area includes a small portion of one commercial property.

### Live Oak (FLUCFCS Code 427)

This classification is used to describe the low-quality remnant roadside edges of forested uplands on the northern and southern banks of the Trout River. Dominant species include live oak (*Quercus virginiana*), saw palmetto (*Serenoa repens*), and red cedar (*Juniperus virginiana*).

### Roads and Highways (FLUCFCS Code 814)

This classification describes the majority of the project study area and consists of paved and mowed areas of the existing SR 115 ROW and intersections.

## *Wetlands and Other Surface Waters*

### Streams and Waterways (FLUCFCS Code 510)

#### Cowardin E1UB3 (Riverine, Tidal, Unconsolidated Bottom, Mud)

This classification is used to describe the open water of the Trout River. The Trout River is a tributary of the St. Johns River and is subject to the ebb and flow of the tide. It is brackish in character.

### Saltwater Marshes (FLUCFCS Code 642)

#### Cowardin E2EM1 (Estuarine, Intertidal, Emergent, Persistent)

Vegetated wetlands along the northern and southern edges of the river are classified as saltmarsh. Dominant vegetation consists of cordgrasses (*Spartina alternifolia* and *S. bakeri*), sawgrass (*Cladium jamaicense*), marshelder (*Iva frutescens*), and false indigo (*Amorpha fruticosa*). This wetland habitat within the project study area is highly disturbed and was observed to contain large amounts of roadside trash during the June 2021 site visit .

## *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).

- (29) Kureb fine sand
- (38) Mascotte fine sand
- (66) Surrency loamy fine sand, depressional
- (68) Tisonia mucky peat, very frequently flooded
- (69) Urban land

(72) Urban land-Ortega-Kershaw complex  
(99) Water

## Hydrological Features

In general, wetlands within the project study area drain into the Trout River, which flows east into the St Johns River. The entire project study area is located within the Northern St. Johns River & Northern Coastal (4) basin as mapped by SJRWMD.

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.)

## PROTECTED SPECIES AND HABITAT

This project study area was evaluated for impacts to wildlife and habitat resources, including federally- and state-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) and Chapter 68A-27 F.A.C. This Technical Memorandum contains information pertaining to all federally-listed species, candidate and proposed species 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 Technical Memorandum.

## Methods

Literature reviews, database searches, agency coordination, recent aerial photographs, and field investigations were conducted to identify listed species and habitat potentially occurring within the project study area. Field investigations were conducted on June 24 and 28, 2021 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. Effect determinations were made for all listed species using effect determination keys and/or professional judgement.

## Survey Results

This report addresses federally-listed and candidate species as regulated by the U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration (NOAA) and National Marine Fisheries Service (NMFS), and state-listed species as regulated by the Florida Fish and Wildlife Conservation Commission (FWC) and the Florida Department of Agriculture and Consumer Services (FDACS; for state-

listed plants). 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/gotocity.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 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 89 listed species are known to occur in Duval County. Of these, 21 were determined to have some probability of occurrence within the project study area based on the presence of suitable habitat and observations.

These 21 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.

Effect determinations were made for each listed species based on the current understanding of the proposed project and its effects. These determinations were made using effect determination keys, where appropriate, and reasonable scientific judgement. Effect determinations were not made for candidate or proposed species for listing; effect determinations, and consultation, if necessary, will be made for these species if they are listed when the project is scheduled for construction.

**Table 1** summarizes the potential habitat availability and probability of occurrence for 21 listed species that may occur within the project area. Any listed species that were encountered during the field inspection were marked as observed on the table below. No listed species were encountered during the field investigations in June 2021. Documented occurrences of wood storks, nesting locations, Core Foraging Areas (CFAs), and wading bird rookeries are depicted on **Exhibit 6 (Appendix A)**. Documented occurrences of protected fauna near the project study area are depicted on **Exhibit 7A and 7B (Appendix A)**.

<b>Table 1. Federally-listed, Candidate, and Proposed Species for Listing and State-listed Species That May Occur in the Project Study Area</b>						
<b>Scientific Name</b>	<b>Common Name</b>	<b>Federal Status</b>	<b>State Status</b>	<b>Habitat Present Within Project Study Area(s)</b>	<b>Probability of Occurrence</b>	<b>Effects Determination</b>
<b>Plants and Lichens</b>						
<i>Gonolobus suberosus</i> (= <i>Matelea gonocarpus</i> )	Anglepod Milkvine	N	ST	Disturbed roadside forest edges along the banks of the Trout River provide marginally suitable habitat.	Low	NAEA
<i>Opuntia stricta</i>	Erect Pricklypear	N	ST	Disturbed roadside forest edges along the banks of the Trout River provide marginally suitable habitat.	Low	NAEA
<i>Zephyranthes atamasca</i> var. <i>atamasca</i>	Rainlily	N	ST	Grassy maintained areas along the roadside provide potentially suitable habitat.	Low	NAEA
<i>Zephyranthes atamasca</i> var. <i>treatiae</i>	Treat's Rainlily	N	ST	Grassy maintained areas along the roadside provide potentially suitable habitat.	Low	NAEA
<b>Insects</b>						
<i>Danaus plexippus</i>	Monarch Butterfly	C	N	Milkweeds for breeding were not observed, but grassy road shoulders may periodically produce wildflowers that could be used by adults for foraging.	Low	-
<b>Fish</b>						
<i>Acipenser brevirostrum</i> **	Shortnose Sturgeon	E	FE	The portion of the Trout River that occurs in the project area may be marginally suitable.	Low	NLAA

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<b>Table 1. Federally-listed, Candidate, and Proposed Species for Listing and State-listed Species That May Occur in the Project Study Area</b>						
<b>Scientific Name</b>	<b>Common Name</b>	<b>Federal Status</b>	<b>State Status</b>	<b>Habitat Present Within Project Study Area(s)</b>	<b>Probability of Occurrence</b>	<b>Effects Determination</b>
<i>Acipenser oxyrinchus oxyrinchus*</i>	Atlantic Sturgeon	E	FE	The portion of the Trout River that occurs in the project area may be marginally suitable.	Low	NLAA
<i>Pristis pectinata</i>	Smalltooth Sawfish	E	FE	The portion of the Trout River that occurs in the project area may be marginally suitable.	Low	NLAA
<b>Reptiles</b>						
<i>Caretta caretta</i>	Loggerhead Sea Turtle	T	FT	The portion of the Trout River that occurs in the project area may be suitable.	Moderate	NLAA
<i>Chelonia mydas</i>	Green Sea Turtle	T	FT	The portion of the Trout River that occurs in the project area may be suitable.	Moderate	NLAA
<i>Drymarchon corais couperi*</i>	Eastern Indigo Snake	T	FT	On-site and adjacent habitats and land uses represent extremely marginal potential habitats.	Low	NLAA
<i>Gopherus polyphemus*</i>	Gopher Tortoise	N	ST	Edges of ROW along adjacent private properties may provide marginally suitable habitat.	Low	NAEA
<i>Lepidochelys kempii*</i>	Kemp's Ridley Sea Turtle	E	FE	The portion of the Trout River that occurs in the project area may be marginally suitable.	Low	NLAA
<b>Birds</b>						
<i>Cistothorus palustris griseus**</i>	Worthington's Marsh Wren	N	ST	Saltmarsh areas along the northern and southern portions of the SR 115 Bridge crossing over the Trout River may provide marginal foraging habitat.	Low	NAEA
<i>Egretta caerulea**</i>	Little Blue Heron	N	ST	Saltmarshes along the edges of the	High	NAEA

<b>Table 1. Federally-listed, Candidate, and Proposed Species for Listing and State-listed Species That May Occur in the Project Study Area</b>						
<b>Scientific Name</b>	<b>Common Name</b>	<b>Federal Status</b>	<b>State Status</b>	<b>Habitat Present Within Project Study Area(s)</b>	<b>Probability of Occurrence</b>	<b>Effects Determination</b>
				Trout River provide suitable foraging habitat.		
<i>Egretta tricolor</i> **	Tricolored Heron	N	ST	Saltmarshes along the edges of the Trout River provide suitable foraging habitat.	High	NAEA
<i>Laterallus jamaicensis jamaicensis</i>	Eastern Black Rail	T	FT	Saltmarshes along the edges of the Trout River provide suitable foraging habitat.	Low	NLAA
<i>Mycteria americana</i>	Wood Stork	T	FT	Saltmarshes along the edges of the Trout River provide suitable foraging habitat.	High	NLAA
<i>Platalea ajaja</i> **	Roseate Spoonbill	N	ST	Saltmarshes along the edges of the Trout River provide suitable foraging habitat.	High	NAEA
<b>Mammals</b>						
<i>Perimyotis subflavus</i>	Tricolored Bat	PE	N	Culverts, trees with dense Spanish moss, and other structures may provide suitable habitat for this species.	Low	-
<i>Trichechus manatus</i> **	West Indian Manatee	T/CH	FT	The portion of the Trout River in the project study area is accessible to manatees and is Designated Critical Habitat for the species.	High	NLAA
<b>Legal Status and Notes</b>						
<b>Federally-listed Species (FWS)</b>						
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.						
PE = Proposed endangered						
PT = Proposed threatened.						

Table 1. Federally-listed, Candidate, and Proposed Species for Listing and State-listed Species That May Occur in the Project Study Area						
Scientific Name	Common Name	Federal Status	State Status	Habitat Present Within Project Study Area(s)	Probability of Occurrence	Effects Determination
<p><b>N</b> = Not federally-listed.            * = This species is included in a FWS Recovery Plan.            Recovery plans can be found at: <a href="https://www.fws.gov/endangered/species/recovery-plans.html">https://www.fws.gov/endangered/species/recovery-plans.html</a>  <b>State-listed Species</b>  <b>SAT</b> = Listed as threatened for similarity of appearance.  <b>SSC</b> = Species of Special Concern.  <b>SE</b> = State endangered.  <b>ST</b> = 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.  <b>FE</b> = Federally endangered: species federally listed as being in danger of extinction throughout all or a significant portion of its range.  <b>FT</b> = 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>  <b>Effect Determinations</b>  <b>NAEA</b> = No adverse effect anticipated  <b>NLAA</b> = May affect, not likely to adversely affect            Note that effect determinations are not made for candidate or proposed species for listing.</p>						

### 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 investigations. Only federally-listed species are afforded protection under the ESA at this time. The ESA is administered by USFWS and NMFS to provide protection of imperiled species and their habitat. Section 7 of the ESA requires federal agencies to consult with USFWS 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.

#### Listed Plants

In June 2021, the project study area was inspected by an experienced botanist to identify potential habitat for listed plant species and to positively identify any species visible at the time.

No federally-listed plant species are known to occur in Duval County. Based upon preliminary data analysis and the June 2021 field investigations, a total of four state-listed plant species (anglepod milkvine, erect pricklypear, rainlily, and Treat’s rainlily) were determined to have some probability of occurrence in the project study area. The characteristic leaves of the anglepod milkvine may be hard to discern. The two species of rainlily have inconspicuous leaves and are best located when flowers are present, and they may not have been flowering at the time of the site investigations. The erect prickly pear is common in dry coastal habitats and individual plants (including single stem segments) may be present but obscured by other vegetation. All of the listed plants that may occur were given a low probability of occurrence and none were observed in the project study area during the site investigations. If these species do occur within the project area, potential impacts to individual plants will not affect the species as a whole. Therefore, **no adverse effect is anticipated** for state-listed plant species.

*Listed Wildlife Species*

FISH

**Shortnose Sturgeon** (*Acipenser brevirostrum*) – The shortnose sturgeon is a state- and federally-endangered species that may occur in Duval County. Individuals of this species spend much of their adult life in estuary systems and tend to limit their time in marine systems (NOAA, 2023a). This species moves upstream into freshwater river systems away from saltwater to spawn during the springtime (January-April) (NOAA, 2023a). After spawning, adults and juveniles of this species move back downstream into brackish systems, where they feed on invertebrates such as insects, crustaceans, worms, and mollusks (NOAA, 2023a). A single specimen was found in the St. Johns River by FWC during extensive sampling of the river in 2002 and 2003; subsequent sampling by a different group in 2014 and 2015 found no shortnose sturgeon (NOAA, 2023a). For these reasons, the shortnose sturgeon has been given a low probability of occurrence in the project study area. During in-water work, it is expected that the applicant will be required to adhere to *NOAA's Measures for Reducing Entrapment Risk to Protected Species* and *NOAA's Protected Species Construction Conditions*, *NOAA Fisheries Southeast Regional Office* (2021). Therefore, this project **may affect, but is not likely to adversely affect** this species.

**Atlantic Sturgeon** (*Acipenser oxyrinchus oxyrinchus*) – The Atlantic sturgeon is a state- and federally-endangered species that may occur in Duval County. Individuals of this species spend their adult lives in deeper marine waters in the winter and move upstream to freshwater systems to spawn (NOAA, 2023b). After spawning in the summer months, adults and subadults then move into the downstream brackish systems to feed on benthic invertebrates such as crustaceans, worms, and mollusks, and bottom-dwelling fish, such as sand lance (NOAA, 2023b). A study published in 2018 reported that one individual was captured in the St. Johns River in July 2015 but found no evidence of a well-established population (Fox, et al., 2018a). Recent studies have documented a small but consistent population of resident and migratory Atlantic sturgeon in the St. Marys River, Georgia, the second-most southern river in their historical range (Fox, et al., 2018b). For these reasons, the Atlantic sturgeon has been given a low probability of occurrence in the project study area. During in-water work, it is expected that the applicant will be required to adhere to *NOAA's Measures for Reducing Entrapment Risk to Protected Species* and *NOAA's Protected Species Construction Conditions*, *NOAA Fisheries Southeast Regional Office* (2021). Therefore, this project **may affect, but is not likely to adversely affect** this species.

**Smalltooth Sawfish** (*Pristis pectinata*) – This federally-endangered species occurs in Florida's shallow coastal waters. Limited GIS data provided by FDOT shows the closest documented occurrences of the smalltooth sawfish approximately 12 miles to the northeast in the Nassau River system. Typically, this species is restricted to Southwest Florida and is unlikely to occur in Northeast Florida. Because known occurrences and preferred habitat of this species is over five miles from the SR 115 Trout River bridge crossing, this species has been given a low probability of occurrence, and work within this bridge crossing **may affect, but is not likely to adversely affect** this species. The project will adhere to the most current protection measures at the time of construction for any in-water work.

## REPTILES

**Sea Turtles** – Three species of sea turtles may occur in or near the Trout River bridge crossing: the **loggerhead sea turtle** (*Caretta caretta*; federally-threatened), **green sea turtle** (*Chelonia mydas*; federally-threatened), and **Kemp’s ridley sea turtle** (*Lepidochelys kempii*; federally-endangered). Of these species, the loggerhead and green sea turtles are more likely to occur (moderate probability) than the Kemp’s ridley (low probability). The closest documented sea turtle stranding was a loggerhead turtle 2.6 miles downstream of the project study area. Sea turtles may occur in Trout River, but no nesting habitat exists in the project study area. Therefore, only in-water work could potentially impact free-swimming individual sea turtles. For in-water work, it is expected that the applicant will be required to adhere to NOAA’s *Measures for Reducing Entrapment Risk to Protected Species* and NOAA’s *Protected Species Construction Conditions*, NOAA Fisheries Southeast Regional Office (2021) and implement the most current agency protection measures should this species be present at the time of project construction. Therefore, this project **may affect, but is not likely to adversely affect**, these species.

**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 investigations, no gopher tortoises or highly suitable habitat were observed in the project study area. While these preliminary investigations do not 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 site investigations, the species has been given a low probability of occurrence. The construction of the project is not expected to impact any potentially occupied gopher tortoise burrows. If any are observed during the design and permitting phases of this project, a formal survey and relocation will be carried out in accordance with FWC regulations. Therefore, **no adverse effect is anticipated** for this 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). The project study area contains no xeric habitats and no potentially occupied gopher tortoise burrows were observed. However, the project study area contains marginally suitable foraging habitats, and may contain other refugia that the snakes may temporarily inhabit. Therefore, the indigo snake has been given a low probability of occurrence. The April 2013 version of the USFWS’ *Eastern Indigo Snake Programmatic Effect Determination Key* is valid for all of Florida, exclusive of the part within the USFWS’ South Florida field office’s jurisdiction where a 2017 version is to be used. The current project is within the area where the 2013 key is valid. The 2013 Effects Determination Key was used to determine this project’s potential effect on the indigo snake as given below:

- 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 proposed plan to replace the Trout River bridge known as Alternative 3 will not affect more than 25 acres of potential eastern indigo snake habitat or more than 25 potentially occupied gopher tortoise burrows. In addition, FDOT will implement the most current agency protection measures during project construction and will excavate any affected active and inactive gopher tortoise burrows in accordance with FWC and USFWS requirements. Therefore, it is expected that implementation of the project **may affect, but is not likely to adversely affect**, the eastern indigo snake. Further consultation is not required.

## BIRDS

**Worthington's Marsh Wren** (*Cistothorus palustris griseus*) – This state-threatened species inhabits saltmarshes dominated by tall saltmarsh grass, especially *Spartina alterniflora*. Worthington's marsh wren is the local resident subspecies of *C. palustris*, but during the winter months other non-listed migrant subspecies of marsh wren may also occur in North Florida saltmarshes. Local species typically begin nesting in March/April in large colonies. Saltmarsh habitat in the project study area is marginally suitable for this species because it is limited in size and quality due to its roadside and suburban location. Therefore, this species has been given a low probability of occurrence and **no adverse effect is anticipated** to this species.

**Wading Birds** – The **little blue heron** (*Egretta caerulea*), **tricolored heron** (*Egretta tricolor*), and **roseate spoonbill** (*Platalea ajaja*) are listed as state-threatened species. All these bird species have a high probability of occurrence in the project study area's saltmarshes, because they could utilize the shallow water for foraging. These species are unlikely to utilize these areas for nesting due to adjacent development and lack of suitable nesting trees over water. Typically, these species nest in colonies, which are tracked and documented by USFWS. The nearest documented wading bird rookery is approximately 12.7 miles east of the project study area and was last documented as active in the 1980s FWC survey (**Appendix A; Exhibit 6**). These species are highly mobile, so if any individuals are present during construction, they can easily leave the area if disturbed. No listed wading birds were observed during the site investigations. Therefore, **no adverse effect is anticipated** for these state-listed wading birds.

**Eastern Black Rail** (*Laterallus jamaicensis jamaicensis*) – The eastern black rail was recently federally listed as a threatened species. While it may occasionally be found in freshwater wetland habitats, like the Worthington's marsh wren, it prefers the dense cover of tall saltmarsh grass. This species can be found year-round in preferred habitats along the northeastern coast of Florida, with nesting season typically being between March and August in this region (Watts, 2016). The saltmarshes in the project study area are disturbed, located in a developed area, and do not provide the secluded habitat that the rail prefers. Therefore, this species has been given a low probability of occurrence, and construction activities associated with this project **may affect, but is not likely to adversely affect** this species.

**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 foraging 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. USFWS 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 6 (Appendix A)**, the project study area is located within the CFA of one or two documented active wood stork colonies, the nearest of which is located approximately 3.0 miles southeast of the project study area. No wood storks were observed during field investigations, and this species has been given a high probability of occurrence. The saltmarshes in the project area are likely to be considered SFH. The open water of the Trout River is too deep to serve as SFH. Alternative 3 is expected to impact a total of 0.746 acre of saltmarsh. The project’s potential effect on wood storks was evaluated using the USACE/USFWS *Effect Determination Key for the Wood Stork in Central and North Peninsular Florida (2008)*.

- 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 Clean Water Act (CWA) section 404(b)(1) guidelines.....”NLAA”

Since Alternative 3 is expected to affect more than 0.5 acre of saltmarsh, wetland mitigation will be provided that will offset the loss of SFH and the project **may affect, but is not likely to adversely affect**, the wood stork. If mitigation is provided, no further consultation regarding this species is likely to be required.

## MAMMALS

**West Indian Manatee (*Trichechus manatus*)** – The West Indian manatee is listed as federally-threatened species and afforded protection under the ESA and the Marine Mammal Protection Act of 1972, as amended. Manatees forage, rest, and mate along the shallow coastal waters of Florida, brackish bays and estuaries, and freshwater rivers and springs. Manatees are herbivores, and typically eat turtle grass (*Thalassia testudinum*), manatee grass (*Syringodium filiforme*), Cuban shoal grass (*Halodule wrightii*), and cordgrass

(*Spartina* spp.). Critical habitat has been established for the West Indian manatee within the project area, (**Appendix A; Exhibit 3**).

No West Indian manatees were observed on-site during field investigations. The Trout River is accessible to manatees, and the portion of the river included in the project study area is within the Designated Critical Habitat for the species. Several manatee mortality locations are documented close to the project study area (**Appendix A; Exhibit 7B**). Manatees have been given a high probability of occurrence in the project study area. The project's potential effect on manatees was evaluated using *The Corps of Engineers, Jacksonville District and the State of Florida Effect Determination Key for the Manatee in Florida* (April 2013) as follows:

- A. Project is located in waters accessible to manatees **or** directly or indirectly affects manatees.....(go to B)
- B. Project is other than the activities listed above .....(go to C)
- C. Project is not located in an Important Manatee Area (IMA) .....(go to G)
- G. Project does not provide new access for watercraft, e.g., bulkheads, seawalls, riprap, maintenance dredging, boardwalks and/or the maintenance (repair or rehabilitation) of currently serviceable watercraft access structures provided all of the following are met: (1) the number of slips is not increased; (2) the number of existing slips is not in question; and (3) the improvements do not allow increased watercraft usage ..... (go to N)
- N. Project impacts to submerged aquatic vegetation, emergent vegetation or mangrove will have beneficial, insignificant, discountable or no effects on the manatee .....(go to O)
- O. Project proponent **elects** to follow standard manatee conditions for in-water work and requirements, as appropriate for the proposed activity, prescribed on the maps .....(go to P)
- P. If project is other than repair or rehabilitation of a multi-slip facility, a new multi-slip facility, residential dock facility, shoreline stabilization, or dredging, and does not provide new access for watercraft or improve an existing access to allow increased watercraft usage, the determination of “*May affect, not likely to adversely affect*” is appropriate and no further consultation with the Service is necessary.

The portion of Trout River within the project study area is accessible to manatees and contains emergent saltmarsh vegetation they may feed on. Work on the SR 115 bridge replacement may involve impacts to saltmarsh habitat. Impacts to this resource, like all other wetland types, are expected to be avoided and minimized to the maximum extent practicable, and any unavoidable impacts will be offset by appropriate mitigation (as detailed below). FDOT maintains that the avoidance/minimization/mitigation of saltmarsh impacts will result in the project having insignificant or discountable effects on saltmarsh and designated manatee critical habitat. In addition, FDOT will implement the USFWS' *Standard Manatee Conditions for In-water Work* for any work in Trout River and wetland edges. Therefore, the replacement of the Trout River bridge **may affect, but is not likely to adversely affect**, the West Indian manatee and its critical habitat.

*Non-listed Protected Species and Additional Species That May be of Regulatory Significance*

**Monarch Butterfly** (*Danaus plexippus*) – This species was designated as a candidate species for federal listing by USFWS in December 2020. Adult individuals of this species may reside in Florida year-round, breed in the state, or pass through while migrating back and forth from breeding grounds in other states or from wintering sites in Mexico. Breeding females require milkweeds (genus *Asclepias*) to lay their eggs on, and the larvae must feed on these milkweeds. Adults, like many other species of butterflies, rely on many species

of wildflowers as nectar food sources. No milkweeds were observed in the project study area, and few on-site habitats would support the growth of significant numbers of any *Asclepias* species. Therefore, no portion of the project study area is expected to contain significant potential breeding areas for monarchs. However, areas of grassy and weedy vegetation are found on the roadside of SR 115 throughout the project study area, and these areas have some potential to produce a variety of wildflowers upon which wandering (non-breeding) adult monarchs may feed. No monarch butterflies were observed in the project study area during the site visit, but due to the potential for seasonal presence of wildflowers, this species has been given a low probability of occurrence. The construction of the project is not expected to permanently eliminate all open areas where wildflowers may grow, Therefore, the monarch is unlikely to be affected. An official effect determination will be made for this species if it becomes listed by the time the project is scheduled for construction.

**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 and the Migratory Bird Treaty Act of 1918 (MBTA), as amended. Bald eagles 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.

No bald eagles were observed within the project study area during field investigations. **Exhibit 7A (Appendix A)** depicts the locations of 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. The USFWS Florida Ecological Services Field Office in Jacksonville defines two buffer zones based on the distance from the central location of a nest and corresponding activity restrictions. The primary activity zone is 330 feet, and the secondary activity zone is 660 feet 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 0.5 mile east of the project corridor. Because no eagle nests occur within 660 feet of the project study area, no work restrictions related to bald eagle nests are anticipated.

**Bats** – The tricolored bat (*Perimyotis subflavus*) was recently proposed for listing as federally endangered (September 2022) in Duval County. It was not included in the original 2021 NRE. In the Southeast, this is an uncommon species that is most likely to utilize culverts during the colder months and trees with dense Spanish moss (*Tillandsia usneoides*) in the warmer months. This species is rare in Florida and has been given a low probability of occurrence in the project study area. No other federally- or state-listed species of bats are known to occur in Duval County.

FWC regulates work that affects colonies of non-listed bats that may exist 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 investigations for the presence of bat colonies were conducted for accessible and visible portions of the northern and southern ends of the SR 115 bridge crossing. 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*). The most common species to utilize culverts is the Southern myotis (*Myotis austroriparius*). Portions of the underside of the SR 115 bridge that were visible from the ends of the bridge approaches on the southern and northern edges of the river were visibly inspected on June 28, 2021. A moderate amount of staining was observed in

some places, but it was not evident that this was positive indications of bat occupation. Water was observed leaking through from the bridge deck, and pigeons were observed roosting on horizontal surfaces. Both of these factors could cause or contribute to the observed staining. No direct observations of bats were made. The underside of the SR 115 bridge may represent suitable habitat for bats; however, 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, and all potentially occupied areas 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 adhere to the most current agency bat exclusion measures during construction activities.

### **Conceptual Mitigation (Listed Species)**

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

### **Agency Coordination (Listed Species)**

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

### **Conclusions (Listed Species)**

A total of 21 species that are federally-listed, candidates or proposed for federal listing, and/or state-listed were determined to have some probability of occurrence in the project study area.

A total of 10 federally-listed species were given some probability of occurrence within the project study area. The shortnose sturgeon, Atlantic sturgeon, smalltooth sawfish, eastern indigo snake, Kemp's ridley sea turtle, and eastern black rail are all given a low probability of occurrence. The loggerhead and green sea turtles were both given a moderate probability of occurrence. The wood stork and West Indian manatee were given a high probability of occurrence. It is anticipated that impacts to saltmarshes and areas of suitable foraging habitat will be minimized and offset by mitigation, and that USFWS will determine that in-water work and/or wetland impacts **may affect, but is not likely to adversely affect**, the above federally-listed species. Continued agency coordination will occur during permitting to address final determination of impacts, implementation of species-specific protection measures, and mitigation if necessary. The project will have **no effect** on species that are determined to have no probability of occurrence.

A total of 9 state-listed species were given some probability of occurrence within the project area. The anglepod milkvine, erect pricklypear, rainlily, Treat's rainlily, gopher tortoise, and Worthington's marsh wren were given a low probability of occurrence. The roseate spoonbill, little blue heron, and tricolored heron were given a high probability of occurrence. **No adverse effect is anticipated** for any of the state-listed species above that have some probability of occurring in the project area. **No effect is anticipated** for state-listed species that have no probability of occurrence within the project study area.

## **Non-listed Species That May Have Regulatory Implications**

No adult or juvenile monarch butterflies were observed during field investigations. The project study area is unlikely to contain milkweeds that could support breeding of the species. The tricolored bat was recently proposed for listing as federally endangered (September 2022). This bat species is unlikely to occur due to rarity and is not highly likely to use large structures such as the Trout River bridge. No clear evidence of bat occupation was observed when the visible portions of the undersides of the bridge approaches on the southern and northern edges of the river were inspected on June 28, 2021. Both the monarch butterfly and the tricolored bat have been given a low probability of occurrence in the project study area. An effect determination will be made for these species if they become federally listed before the project is constructed. No active bald eagle nests are located near enough to place work restrictions on the project. FDOT adherence to several implementation measures and project commitments regarding plant and wildlife species are outlined in the original NRE and summarized in the conclusion of this Technical Memorandum.

## **WETLANDS AND SURFACE WATERS**

### **Methodology**

The extent and types of wetlands in the project study area were documented in accordance with Executive Order 11990, Protection of Wetlands, dated May 24, 1977 and the FDOT PD&E Manual Part 2, Chapter 9 (2020). Wetlands were identified through the review of available literature, GIS data, and field investigation. The following sources were reviewed prior to conducting the field investigation:

- USFWS National Wetlands Inventory Maps,
- Soil Survey of Duval County, Florida (1989),
- True color aerial photography (2021), and
- Permits issued in 2018 by SJRWMD (General Permit 153282-2, expired May 1, 2023) and USACE (SAJ-2018-01204, expired March 18, 2022) for a bridge maintenance project.

The field investigations were completed on June 24 and 28, 2021 to identify the presence of wetland vegetation, hydrologic indicators, and soil indicators as part of the original NRE. The field investigation was supported by definitions and guidelines contained in:

- FDOT's FLUCFCS Handbook (1999),
- Cowardin System (1979),
- USACE Wetland Delineation Manual (1987),
- USACE Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0, November 2010),
- Florida Wetlands Delineation Manual (Gilbert, et al., 1995), and
- Several field guides.

The jurisdictional limits of wetlands within the project study area were delineated in accordance with Chapter 62-340, F.A.C., and the USACE 1987 Manual and Regional Supplement. All wetland and surface water boundaries and acreages given in this report are considered estimates and will be finalized during the permitting process.

**Results**

Wetlands and waterways identified within the project study area are depicted on **Exhibit 2A** and **2B (Appendix A)** and are assumed to be jurisdictional by SJRWMD and USACE. Wetland and surface water impacts are depicted on **Exhibit 8 (Appendix A)**. The project study area contains an estimated total of 0.746 acre of wetlands and 3.252 acres of surface waters. The 0.746 acre of wetlands are along the northern and southern edges of the river and are classified as saltmarsh. Dominant vegetation consists of cordgrasses (*Spartina alternifolia* and *S. bakeri*), sawgrass (*Cladium jamaicense*), marshelder (*Iva frutescens*), and false indigo (*Amorpha fruticosa*). This wetland habitat within the project study area is highly disturbed and contained large amounts of roadside trash during the June 2021 investigations. The 3.252 acres of surface waters are the open water of the Trout River. The Trout River is a tributary of the St. Johns River and is subject to the ebb and flow of the tide. It is brackish in character.

Avoidance and minimization of wetland and waterway impacts will be considered to the maximum extent practicable throughout all phases of development. For this Technical Memorandum, it is assumed that all jurisdictional wetlands within the project study area would be impacted by Alternative 3, although actual impacts may be less.

Based on preliminary design and estimated jurisdictional wetland boundaries, it is assumed that Alternative 3 will impact all wetlands (0.746 acre) and a portion of the surface waters (0.497 acre) within the project study area. The Uniform Mitigation Assessment Methodology (UMAM) was used to estimate the amount of mitigation required to offset impacts to wetlands. The UMAM Summary Sheets for Alternative 3 are included in **Appendix C**. Functional loss incurred is calculated by multiplying the UMAM score by the acreage of the wetland or jurisdictional water impact. **Table 2** summarizes the estimated wetland impacts and estimated functional losses associated with the project.

<b>Table 2. Alternative 3 Summary of Estimated Wetland Impact Acreage and Functional Loss</b>			
<b>Wetland and Water Type</b>	<b>Impact Acreage</b>	<b>UMAM Score</b>	<b>Functional Loss<sup>1</sup></b>
642 / E2EM1	0.746	0.83	0.42
510 / E1UB3	0.497	0.53	0.60
<b>Totals</b>	<b>1.243</b>	<b>-</b>	<b>1.02</b>
<sup>1</sup> Source: UMAM Summary Sheet, <b>Appendix C</b> .			

UMAM scores will be re-evaluated at the time of permitting based on the final design plans. Depending on the source of wetland mitigation credits that are available when the project is being permitted, FDOT may utilize credits scored using the Wetland Rapid Assessment Procedure (WRAP) rather than UMAM. In that event, wetland impacts would be scored using WRAP. Functional losses and credit requirements calculated using WRAP are expected to be similar to those calculated using UMAM.

### **Conceptual Wetland Mitigation**

Functional loss of wetlands and waterways is offset by purchasing or generating an equal amount of functional gain. Permanent impacts to both tidal wetlands and waterways (Saltmarshes, Streams and Waterways, respectively) will require tidal saltmarsh mitigation credits. It is estimated that SJRWMD and USACE will require up to 1.02 units of saltmarsh functional gain to offset wetland and surface water impacts that may be incurred by the construction of Alternative 3. The precise amount and type of mitigation required would be identified and negotiated with all applicable regulatory agencies before the project enters the design/permitting phase.

Wetland impacts would be mitigated pursuant to Section 373.4137, Florida Statute (F.S.), to satisfy all mitigation requirements of Part IV of Chapter 373, F.S., and 33 U.S.C.§1344. FDOT would evaluate various strategies to fulfill mitigation needs for wetland impacts resulting from the construction of the proposed project. These strategies may include purchasing mitigation credits from approved mitigation banks serving the area in which the project is located. At the time this Technical Memorandum was prepared, the North Florida Saltwater Marsh Mitigation Bank was the only commercially available source of tidal saltmarsh credits serving the project area. Alternatively, FDOT may elect to propose the use of saltmarsh credits from their own San Sebastian saltmarsh creation area. 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.

The project study area does not contain existing stormwater management facilities. However, should stormwater management facilities be developed within the project study area, impacts to upland-cut ditches and stormwater ponds are not likely to require mitigation from SJRWMD. 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 should these features be added to the project area prior to the implementation of this project. A detailed evaluation of potential impacts to these surface waters for Alternative 3 is not included in this Technical Memorandum.

### **Secondary and Cumulative Impacts**

Secondary impacts may include increased noise, light penetration, and wildlife mortality beyond the limits of construction of a project. Secondary impacts vary from project to project, and the amount and extent of secondary impacts (if any) can only be determined during the permitting process. If secondary impacts are determined to be incurred, additional mitigation may be required. The size, extent, and loss of function to adjacent wetlands would be determined during permitting and would vary based on surrounding land use, proposed work, and other factors.

Cumulative impacts are not assessed 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 basin in which the impacts are incurred. Therefore, cumulative impacts are not expected.

## **Permits Required (Wetlands and Water Quality)**

Impacts to wetlands and waters within the project study area would require an Individual Environmental Resource Permit from SJRWMD. In addition, impacts to wetlands and waterways will either be regulated by USACE at the federal level or FDEP at the state level. The Navigable Waters Protection Rule, which went into effect on 22 June 2020, identifies four categories of waters that are federally regulated under the Clean Water Act: (1) 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. Based on these definitions and the USACE Retained Waters Map, all wetlands and waters within the project study area are considered “retained waters” and USACE will retain permitting authority under Section 404 of the CWA. Permit coverage for USACE is anticipated to be under Nationwide Permit (NWP) 3 (Maintenance Activities), NWP 15 (U.S. Coast Guard Approved Bridges), or an Individual Permit. Should federal jurisdiction of wetlands be considered not retained by USACE, jurisdiction would fall to FDEP. Other agencies, including the USFWS, USEPA, and the FWC, review and comment on wetland permit applications.

Pursuant to 40 CFR parts 122 and 124, any project that results in the clearing of one or more acres of land would require a National Pollutant Discharge Elimination System (NPDES) permit from the FDEP. In association with this permit, a Stormwater Pollution Prevention Plan (SWPPP), implemented during the construction of the project, would also be required. The primary functions of the NPDES requirements are to ensure that sediment and erosion are controlled during construction of the project and that offsite resources are not impacted.

## **Agency Coordination (Wetlands)**

Agency coordination would be conducted, if necessary, throughout the design and permitting phases of the project.

## **Conclusions (Wetlands)**

The project study area contains an estimated total of 0.746 acre of saltmarsh wetlands and 3.252 acres of open water. An estimated total of 0.746 acre of saltmarsh wetlands and 0.497 acre of open water would be impacted by the construction of Alternative 3. For the purposes of this Technical Memorandum, it is assumed that all wetlands and surface waters within the project study area are jurisdictional and impacts would require permits and mitigation through SJRWMD and USACE. It is estimated that up to 1.02 units of saltmarsh functional gain would be required to offset wetland and surface water impacts through mitigation. Wetland impact acreages and mitigation requirements would be finalized during the permitting process and FDOT would provide appropriate mitigation to satisfy final mitigation needs.

A Wetlands Finding was made in accordance with Executive Order 11990. It is as follows:

Wetland impacts are expected to be minor and will be finalized during the permitting process. The proposed action will include all practicable measures to minimize harm to wetlands. Wetland impacts which could result from the construction of this project would 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. Therefore, the proposed project is expected to have no significant impacts to wetlands and other surface waters.

## 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.

EFH is defined in the MSFCMA as "...those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." The 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.

## Methodology and Results

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, and that in such tidal waters EFH extends up to the mean high water line (MHWL) of the system. Tidal action pushes water upstream into freshwater systems, and these tidal pulses extend beyond the reach of saline waters and plants adapted to saline or brackish conditions. Therefore, EFH consists of saline, brackish, and freshwater tidal waters. The Trout River and its associated saltmarsh edges (together comprising all the wetlands and waters in the project study area) are tidally influenced and considered EFH. As summarized in Table 2 of this report, a total of 1.243 acres of wetlands and waters (and therefore EFH) are expected to be impacted by this project.

Information regarding Habitat Areas of Particular Concern (HAPCs) was obtained using the NMFS online EFH Mapper Tool. This tool indicated that EFH-HAPCs for three species of penaeid shrimp (white [*Litopenaeus setiferus*], pink [*Farfantepenaeus duorarum*], and brown [*Farfantepenaeus aztecus*] shrimp) can be found in this portion of the Trout River. These species are not federally- or state-listed as threatened or endangered and are not currently subjected to overfishing. These species are managed by the South Atlantic Fishery Management Council (SAFMC), established through the MSFCMA. These species are also managed by the SAFCM under the Shrimp Fishery Management Plan (November 2020). This management plan provides recreational and commercial harvesting guidelines for these species. In-water work is expected

to be a part of the proposed project; however, the proposed project will not result in additional harvesting of these species, or the development of infrastructure that would support the shrimp fishery industry. FDOT would coordinate with NMFS as needed prior to construction to ensure these species of penaeid shrimp would not be affected by the project.

### **Potential Impacts and Mitigation (Conceptual)**

USACE and NMFS are expected to require mitigation for all permanent impacts to EFH. Mitigation for the permanent loss (fill) of saline or brackish EFH is achieved through saltmarsh functional gain. The 1.243 acres of wetlands and waters expected to be impacted (**Table 2**), count as EFH value loss, which may be offset by the purchase of 1.02 saltmarsh credits from a saltmarsh mitigation bank serving the project area. During the permitting phase of the project, FDOT would coordinate with NMFS to determine the preferred method of offsetting the loss of EFH values.

Three SAFMC-managed species of penaeid shrimp (white, pink, and brown) are known to occur in the Trout River. Work in the Trout River is expected to be a part of the proposed project. However, in-water work would not result in additional harvesting of these species, or the development of infrastructure that would support the take of these species. FDOT would coordinate with NMFS as needed prior to construction to ensure these species would not be affected by the project or to determine the preferred methods to offset potential impacts to these species.

### **Agency Coordination (EFH)**

FDOT would coordinate with NMFS and USACE (as necessary) to address EFH and HAPC issues, impacts, and mitigation plans during the design and permitting phases of the project.

### **Conclusions (EFH)**

All wetlands and tidal waters within the project study area are EFH. Approximately 1.243 acres of EFH is expected to be impacted by Alternative 3, requiring approximately 1.02 units of saltmarsh functional gain. FDOT will provide saltmarsh mitigation functional gain to offset the loss of EFH as required. Therefore, all impacts to EFH are expected to be offset. During the permitting phase, FDOT would coordinate with NMFS to determine the preferred method to mitigate for the loss of EFH values and regarding the three managed species of shrimp that can be found in the Trout River.

### **CONCLUSION**

FDOT is conducting a PD&E study in compliance with NEPA for the replacement of the SR 115 (Lem Turner Road) bridge over the Trout River (bridge #720033) in Duval County. As part of this study, an NRE study was finalized in September 2021 that covered two build alternatives (Alternatives 1 and 2). Build Alternative 1 would replace the existing bridge along the existing alignment with a temporary bridge placed to the west. Build Alternative 2 would replace the existing bridge along the existing alignment with a temporary bridge placed to the east.

Since then, an additional alternative, Alternative 3, was developed and selected as the recommended alternative. Alternative 3 is the subject of this NRE Technical Memorandum that serves as an addendum to the original NRE. Alternative 3 would construct a new bridge offset to the east of the existing bridge. Construction would be completed in phases where the new bridge would be partially constructed east of the existing bridge allowing three lanes of traffic and pedestrian walkway to be maintained on the new bridge structure while the existing bridge structure is demolished. Subsequent phases would construct the remainder of the new bridge to the proposed full typical section and restore all four lanes of traffic. Alternative 3 does not involve a temporary bridge.

Alternative 3 occurs in the same landscape and would potentially affect the same environmental resources as Alternatives 1 and 2 that were studied in the original 2021 NRE. Alternative 3 differs from the two previous alternatives in that a temporary bridge is not used, the existing bridge would be used to maintain traffic during construction, the permanent replacement bridge would be offset to the east, and specific stormwater ponds have been included in the design. The offset new structure results in somewhat more impacts to wetlands, jurisdictional surface waters, wood stork SFH, and EFH, and consequently there is somewhat more mitigation required. **Table 4** summarizes the potential effects to natural resources resulting from each of the three alternatives.

<b>Table 4. Comparison of the Potential Natural Resource Effects by Alternative</b>			
<b>Alternative</b>	<b>CEs</b>	<b>Wood Stork SFH</b>	<b>Tidal Wetlands and Waterways/EFH</b>
Alternative 1	No CEs likely to be affected	0.348 acre of saltmarsh (SFH) may be impacted	A total of 0.414 acre occurs and may require up to 0.36 units of saltmarsh functional gain.
Alternative 2	No CEs likely to be affected	0.432 acre of saltmarsh (SFH) may be impacted	A total of 0.501 acre occurs and may require up to 0.44 units of saltmarsh functional gain.
Alternative 3	No CEs likely to be affected	0.746 acre of saltmarsh (SFH) may be impacted	A total of 1.243 acres occurs and may require up to 1.02 units of saltmarsh functional gain.

Build Alternative 3 is estimated to impact more wood stork SFH, wetlands, waters, and EFH than either Build Alternatives 1 or 2. Although the preliminary design for Build Alternative 3 includes two new stormwater pond sites (design features that were not specifically included in either Build Alternatives 1 or 2), the increase in impacts is not due to the inclusion of the pond sites. Rather it is due to the fact that Build Alternative 3 involves shifting the replacement bridge to the east, where the new permanent structure will impact the saltmarsh located in the northeastern quadrant of the project study area.

Based on regulatory conservation easement GIS shapefile information published by the SJRWMD, no CEs appear to extend into the project study area. The closest mapped CE lies west of the project area, immediately south of a large stormwater pond. The easement was recorded on February 27, 2009, in Duval County Official Records Book 14811, Page 274. The boundary of this CE is not likely to extend into the existing ROW of SR 115 but should be confirmed by analysis of the legal description in the recorded document. This CE is not likely to be affected by the project. Additional work, including boundary location by a licensed surveyor and/or legal research into the status of easements, will be necessary to determine if any other recorded conservation easements will be impacted by the proposed project.

A total of 21 species that are federally-listed, candidates for federal listing, and/or state-listed were determined to have some probability of occurrence in the project study area of Alternative 3.

**No adverse effect is anticipated** for four state-listed plant species (the anglepod milkvine, erect pricklypear, rainlily, and Treat's rainlily) that may be found within the project study area. **No adverse effect is anticipated** for the state-listed gopher tortoise. **No adverse effect is anticipated** for the state-listed Worthington's marsh wren, little blue heron, tricolored heron, and roseate spoonbill. A federal effects determination of **may affect, but is not likely to adversely affect**, was given to the federally-listed shortnose sturgeon, Atlantic sturgeon, smalltooth sawfish, eastern indigo snake, Kemp's ridley sea turtle, loggerhead sea turtle, green sea turtle, eastern black rail, wood stork and West Indian manatee. Any impacts to above listed species' habitat will be offset by the project's wetland mitigation. Continued agency coordination would occur during permitting to address final determination of impacts, implementation of protection measures, and mitigation if necessary.

No adult or juvenile monarch butterflies were observed during field investigations. The project study area is unlikely to contain milkweeds that could support breeding of the species. The tricolored bat was recently proposed for listing as federally endangered (September 2022). This bat species is unlikely to occur due to rarity and is not highly likely to use large structures such as the Trout River bridge. No clear evidence of bat occupation was observed when the visible portions of the undersides of the bridge approaches on the southern and northern edges of the river were inspected on June 28, 2021. Both the monarch butterfly and the tricolored bat have been given a low probability of occurrence in the project study area. An effect determination will be made for these species if they become federally listed before the project is constructed. No active bald eagle nests are located near enough to place work restrictions on the project. FDOT adherence to several implementation measures and project commitments regarding plant and wildlife species are outlined in the original NRE and summarized in the conclusion of this Technical Memorandum.

A total of 0.746 acre of saltmarsh and 0.497 acre of open water is estimated to be impacted within the project study area. At the time of this Technical Memorandum, it was assumed that all wetlands may be permanently impacted and require mitigation. All wetlands and waters that may be impacted by the project are tidal and would require tidal saltmarsh functional gain units to offset impacts. It is estimated that up to 1.02 units of saltmarsh functional gain would be required to offset wetland and surface water impacts that may be incurred by Alternative 3. Wetland impact acreages and mitigation requirements will be finalized during the permitting process. FDOT will provide appropriate mitigation to satisfy final mitigation needs.

All wetlands and jurisdictional waters associated with Trout River are classified as EFH, and the placement of permanent fill in those systems would impact EFH. Any loss of EFH would be offset by the saltmarsh functional gain provided for the project's wetland impacts. Prior to construction activities, FDOT would coordinate with NMFS and USACE (as necessary) to address EFH issues, impacts, and mitigation plans during the design and permitting phases of the 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 and adhere to the most current protection measures for applicable species.

- 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 USFWS *Standard Protection Measures for the Eastern Indigo Snake* during the construction of the project.
- FDOT will adhere to the National Oceanic and Atmospheric Administration's (NOAA) *Measures for Reducing Entrapment Risk to Protected Species* and specific construction conditions for protected species for any in-water work.
- FDOT will adhere to the NOAA Southeast Regional Office *Protected Species Construction Conditions* for in-water work.
- FDOT will implement the USFWS' *Standard Manatee Conditions for In-water Work* for in-water work.
- FDOT will coordinate with NMFS as necessary regarding EFH during the design and permitting phases that involves potential EFH impact.
- If bats are present in bridges or culverts, FDOT will implement agency approved bat exclusion methods during project construction.

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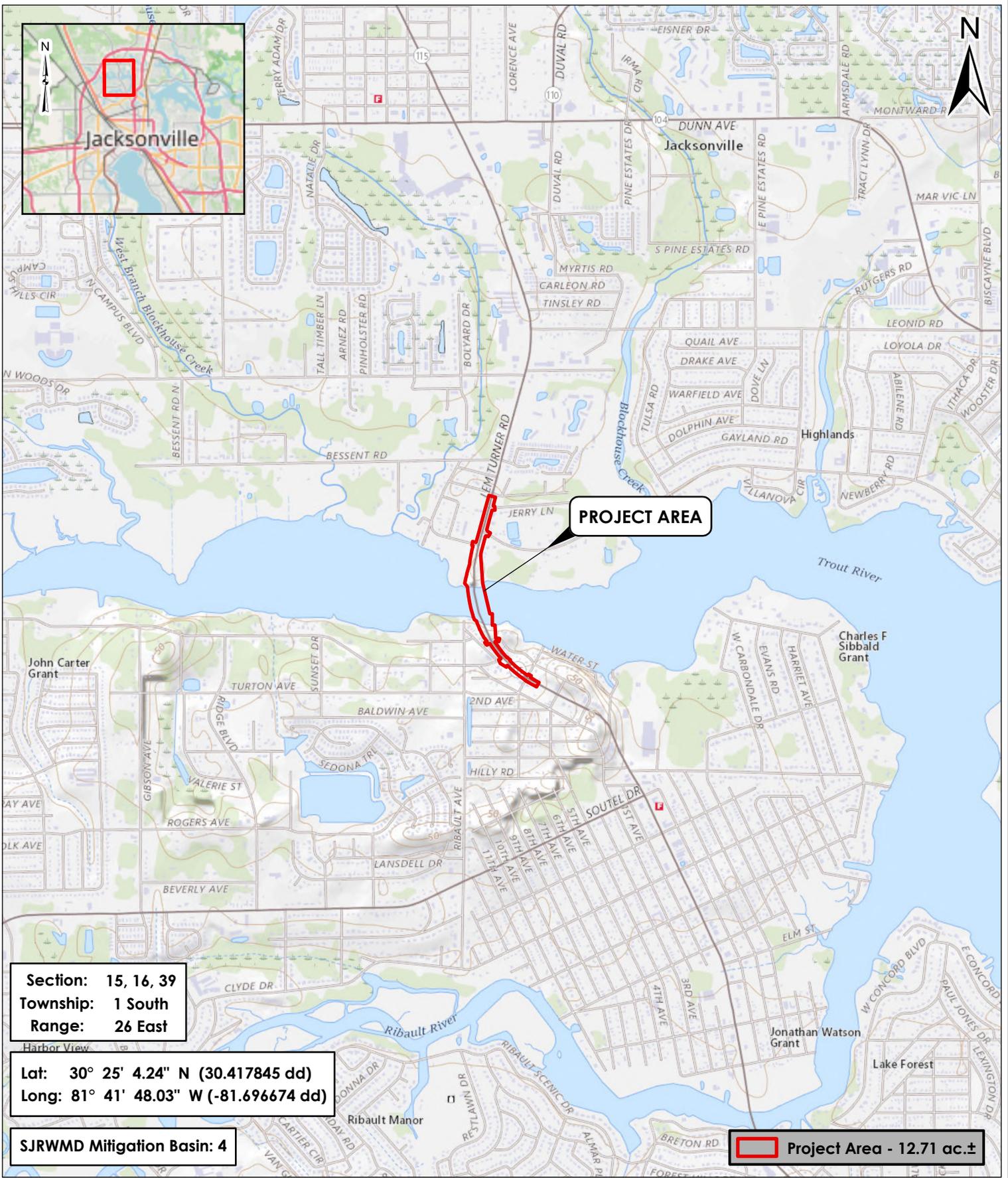
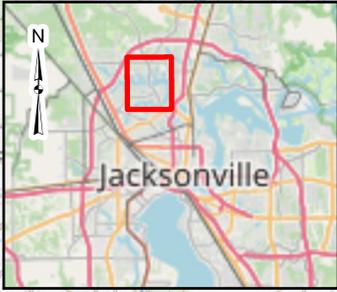
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USFWS-North Florida Ecological Services Office. April 2015. *Kemp's Ridley Sea Turtle* (*Lepidochelys kempii*).

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## **Appendix A – Exhibits**



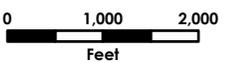
**PROJECT AREA**

**Section: 15, 16, 39**  
**Township: 1 South**  
**Range: 26 East**

**Lat: 30° 25' 4.24" N (30.417845 dd)**  
**Long: 81° 41' 48.03" W (-81.696674 dd)**

**SJRWMD Mitigation Basin: 4**

**Project Area - 12.71 ac.±**

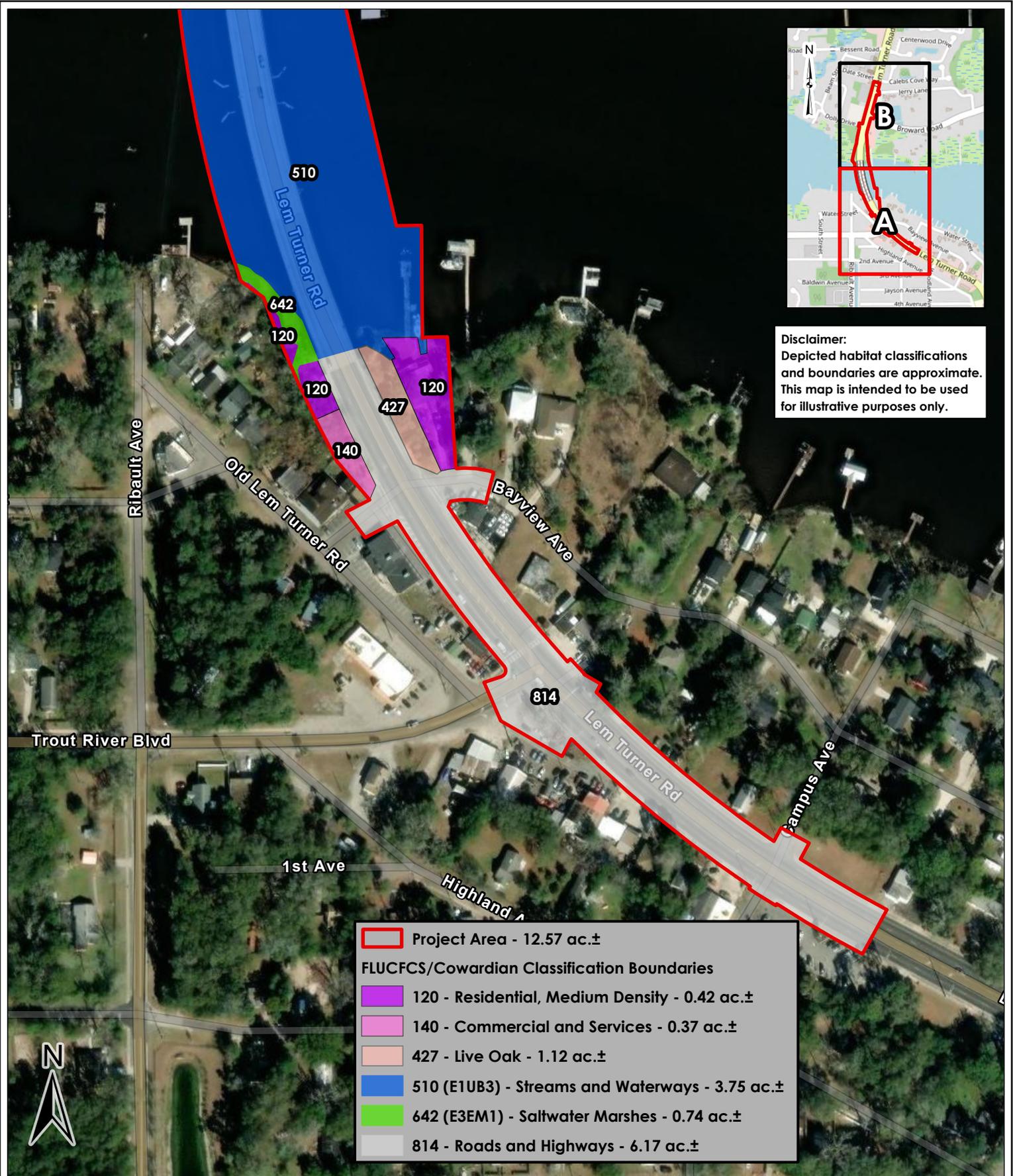


**USGS Topographic Map**

**SR 115 (Lem Turner) at Trout River Alternative 3**  
**FIN 437437-2-22-01**  
**Jacksonville, Duval County, Florida**

SES Project No:	<b>1G001.7668.0003.19</b>	
ERS Project No:	<b>21092.01</b>	Date: <b>Jun 2023</b>
Drawn By:	<b>DF</b>	<b>EXHIBIT NUMBER 1</b>
Reviewed By:	<b>KAC</b>	
Approved By:	<b>KAC</b>	

DATA SOURCE(S):  
 ESRI WMS - World Topography Basemap; Trout River, FL Quadrangle

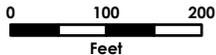


**Disclaimer:**  
 Depicted habitat classifications and boundaries are approximate. This map is intended to be used for illustrative purposes only.

**Project Area - 12.57 ac.±**

**FLUCFCS/Cowardin Classification Boundaries**

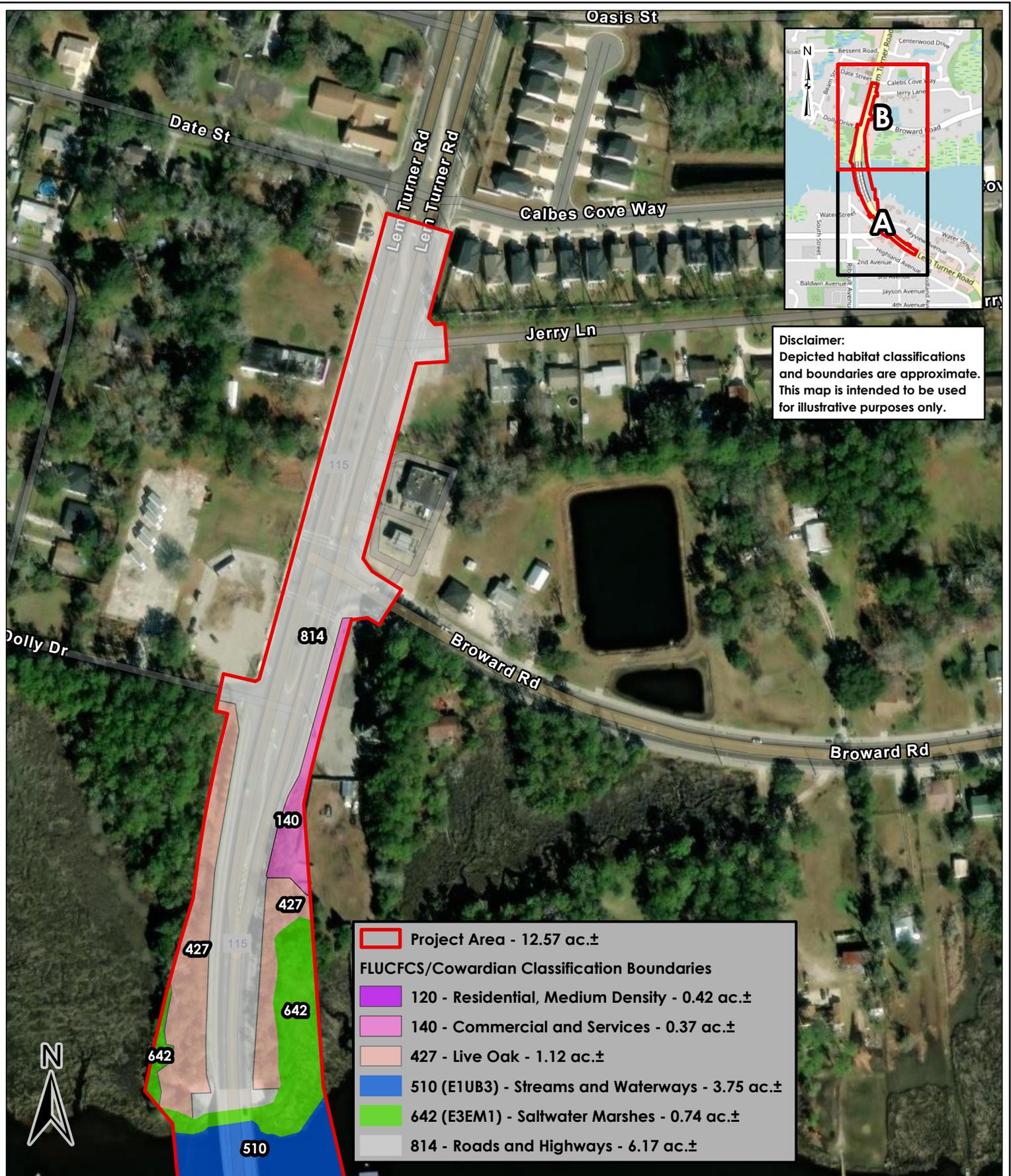
- 120 - Residential, Medium Density - 0.42 ac.±
- 140 - Commercial and Services - 0.37 ac.±
- 427 - Live Oak - 1.12 ac.±
- 510 (E1UB3) - Streams and Waterways - 3.75 ac.±
- 642 (E3EM1) - Saltwater Marshes - 0.74 ac.±
- 814 - Roads and Highways - 6.17 ac.±



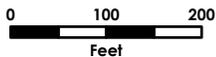
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 ESRI WMS - World Aerial Imagery; Florida Land Use, Cover, and Forms Classification System (FDOT, 1999)

<b>Habitat</b>	
<b>SR 115 (Lem Turner) at Trout River Alternative 3</b>	
<b>FIN 437437-2-22-01</b>	
Jacksonville, Duval County, Florida	

SES Project No:	<b>1G001.7668.0003.19</b>	
ERS Project No:	<b>21092.01</b>	Date: <b>Jun 2023</b>
Drawn By:	<b>DF</b>	<b>EXHIBIT NUMBER 2A</b>
Reviewed By:	<b>KAC</b>	
Approved By:	<b>KAC</b>	



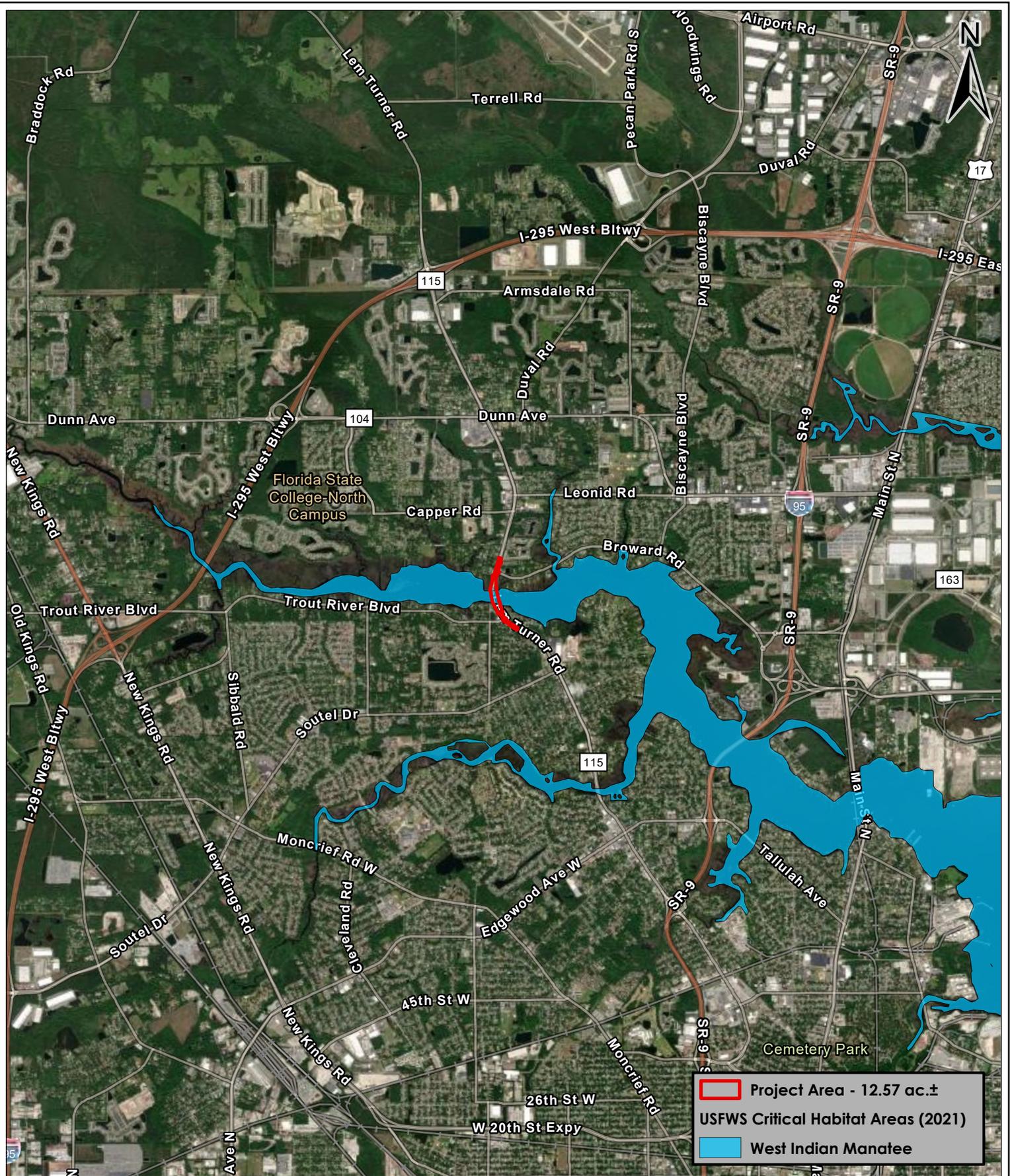
	Project Area - 12.57 ac.±
<b>FLUCFCS/Cowardian Classification Boundaries</b>	
	120 - Residential, Medium Density - 0.42 ac.±
	140 - Commercial and Services - 0.37 ac.±
	427 - Live Oak - 1.12 ac.±
	510 (E1UB3) - Streams and Waterways - 3.75 ac.±
	642 (E3EM1) - Saltwater Marshes - 0.74 ac.±
	814 - Roads and Highways - 6.17 ac.±



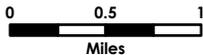
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<b>Habitat</b>	
<b>SR 115 (Lem Turner) at Trout River Alternative 3</b>	
<b>FIN 437437-2-22-01</b>	
Jacksonville, Duval County, Florida	

SES Project No:	<b>1G001.7668.0003.19</b>	
ERS Project No:	<b>21092.01</b>	Date: <b>Jun 2023</b>
Drawn By:	<b>DF</b>	<b>EXHIBIT NUMBER 2B</b>
Reviewed By:	<b>KAC</b>	
Approved By:	<b>KAC</b>	



	Project Area - 12.57 ac.±
	USFWS Critical Habitat Areas (2021)
	West Indian Manatee



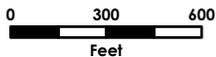
DATA SOURCE(S):  
 ESRI WMS - World Aerial Imagery; USFWS

### Aquatic Preserves, National Wildlife Refuges, Outstanding FL Waters, and Critical Habitats

**SR 115 (Lem Turner) at Trout River Alternative 3**  
**FIN 437437-2-22-01**

Jacksonville, Duval County, Florida

SES Project No:	1G001.7668.0003.19	
ERS Project No:	21092.01	Date: Jun 2023
Drawn By:	DF	EXHIBIT NUMBER <b>3</b>
Reviewed By:	KAC	
Approved By:	KAC	



DATA SOURCE(S):  
 ESRI WMS - World Aerial Imagery; FDEP;  
 SJRWMD

### Public Lands

**SR 115 (Lem Turner) at Trout River Alternative 3**  
**FIN 437437-2-22-01**

Jacksonville, Duval County, Florida

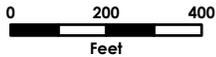
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ERS Project No:	21092.01	Date: Jun 2023
Drawn By:	DF	EXHIBIT NUMBER <b>4</b>
Reviewed By:	KAC	
Approved By:	KAC	



**SOILS LEGEND**

- 29 - Kureb fine sand
- 38 - Mascotte fine sand
- 66 - Surrency loamy fine sand, depressional
- 68 - Tisonia mucky peat, very frequently flooded
- 69 - Urban land
- 72 - Urban land-Ortega-Kershaw complex
- 99 - Water

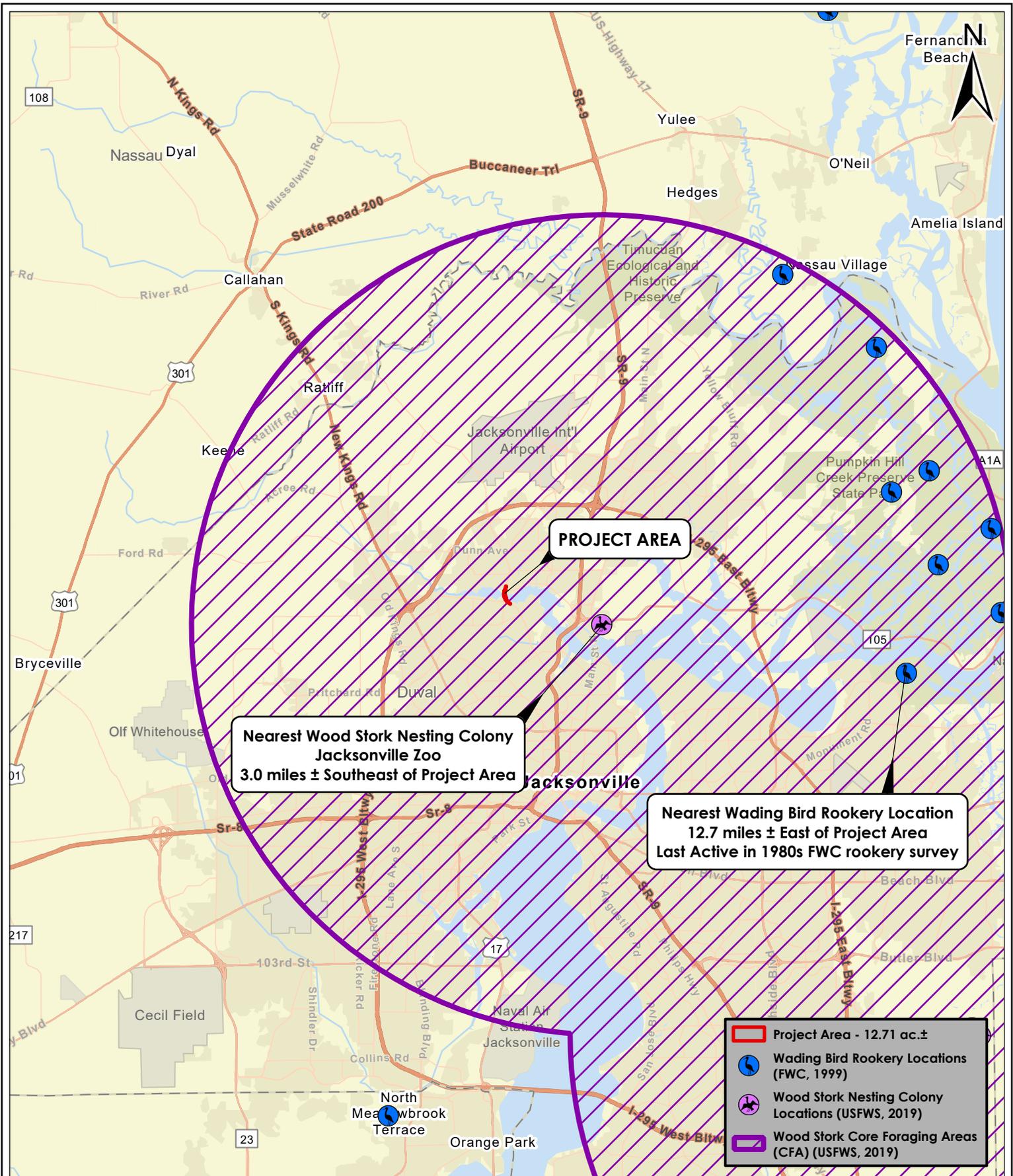
Project Area - 12.71 ac.±  
 USDA-NRCS Soil Survey Map Units



DATA SOURCE(S):  
 ESRI WMS - World Aerial Imagery; USDA-NRCS  
 Web Soil Survey

**Soils**  
**SR 115 (Lem Turner) at Trout River Alternative 3**  
**FIN 437437-2-22-01**  
 Jacksonville, Duval County, Florida

SES Project No: <b>1G001.7668.0003.19</b>	
ERS Project No: <b>21092.01</b>	Date: <b>Jun 2023</b>
Drawn By: <b>DF</b>	EXHIBIT NUMBER <span style="font-size: 2em; font-weight: bold;">5</span>
Reviewed By: <b>KAC</b>	
Approved By: <b>KAC</b>	



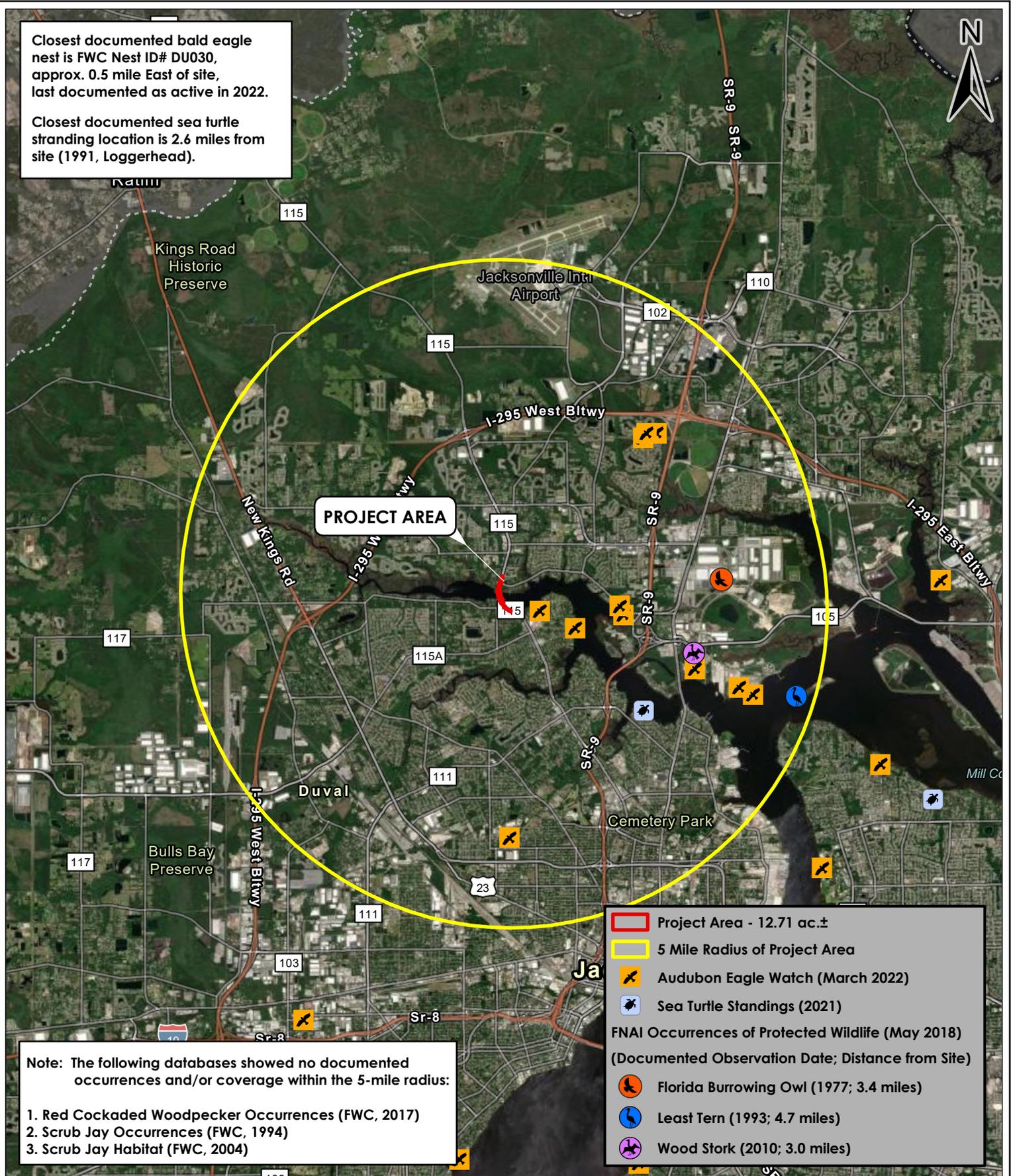
DATA SOURCE(S):  
ESRI WMS - World Street Map; USFWS; FWC

**Documented Occurrences of Wading Bird Rookeries  
and Wood Stork Nesting Colonies/CFA's**  
**SR 115 (Lem Turner) at Trout River Alternative 3**  
**FIN 437437-2-22-01**  
 Jacksonville, Duval County, Florida

SES Project No:	1G001.7668.0003.19	
ERS Project No:	21092.01	Date: Jun 2023
Drawn By:	DF	EXHIBIT NUMBER <b>6</b>
Reviewed By:	KAC	
Approved By:	KAC	

Closest documented bald eagle nest is FWC Nest ID# DU030, approx. 0.5 mile East of site, last documented as active in 2022.

Closest documented sea turtle stranding location is 2.6 miles from site (1991, Loggerhead).



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

1. Red Cockaded Woodpecker Occurrences (FWC, 2017)
2. Scrub Jay Occurrences (FWC, 1994)
3. Scrub Jay Habitat (FWC, 2004)

	Project Area - 12.71 ac.±
	5 Mile Radius of Project Area
	Audubon Eagle Watch (March 2022)
	Sea Turtle Standings (2021)
FNAI Occurrences of Protected Wildlife (May 2018)	
(Documented Observation Date; Distance from Site)	
	Florida Burrowing Owl (1977; 3.4 miles)
	Least Tern (1993; 4.7 miles)
	Wood Stork (2010; 3.0 miles)

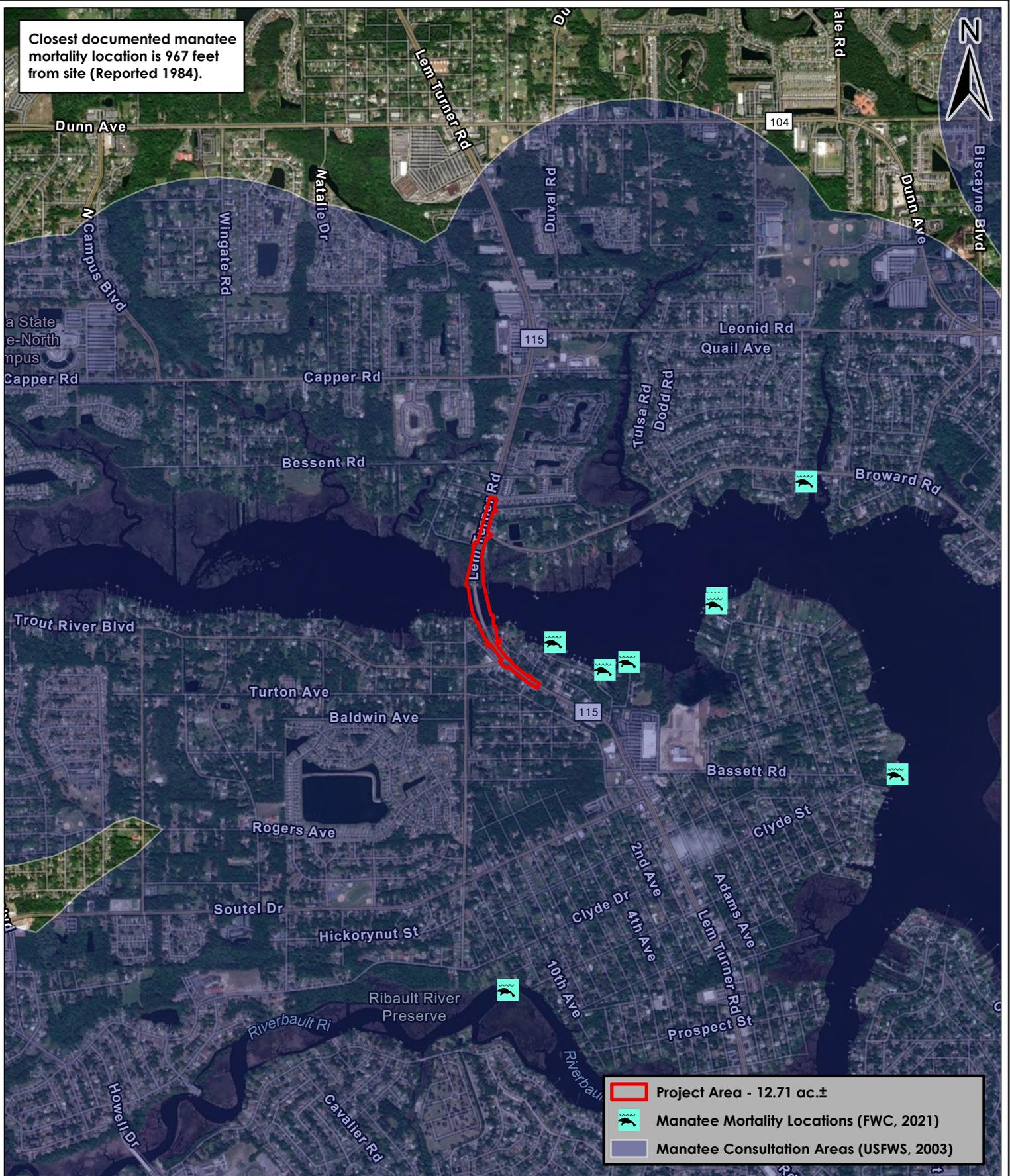


DATA SOURCE(S):  
 ESRI WMS - World Aerial Imagery; USFWS, FWC,  
 FNAI USGS

**Documented Occurrences of Protected  
 Wildlife Within 5 Miles**  
**SR 115 (Lem Turner) at Trout River Alternative 3**  
**FIN 437437-2-22-01**  
 Jacksonville, Duval County, Florida

SES Project No:	1G001.7668.0003.19	
ERS Project No:	21092.01	Date: Jun 2023
Drawn By:	DF	EXHIBIT NUMBER <b>7A</b>
Reviewed By:	KAC	
Approved By:	KAC	

Closest documented manatee mortality location is 967 feet from site (Reported 1984).



- Project Area - 12.71 ac.±
- Manatee Mortality Locations (FWC, 2021)
- Manatee Consultation Areas (USFWS, 2003)



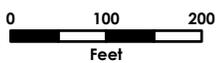
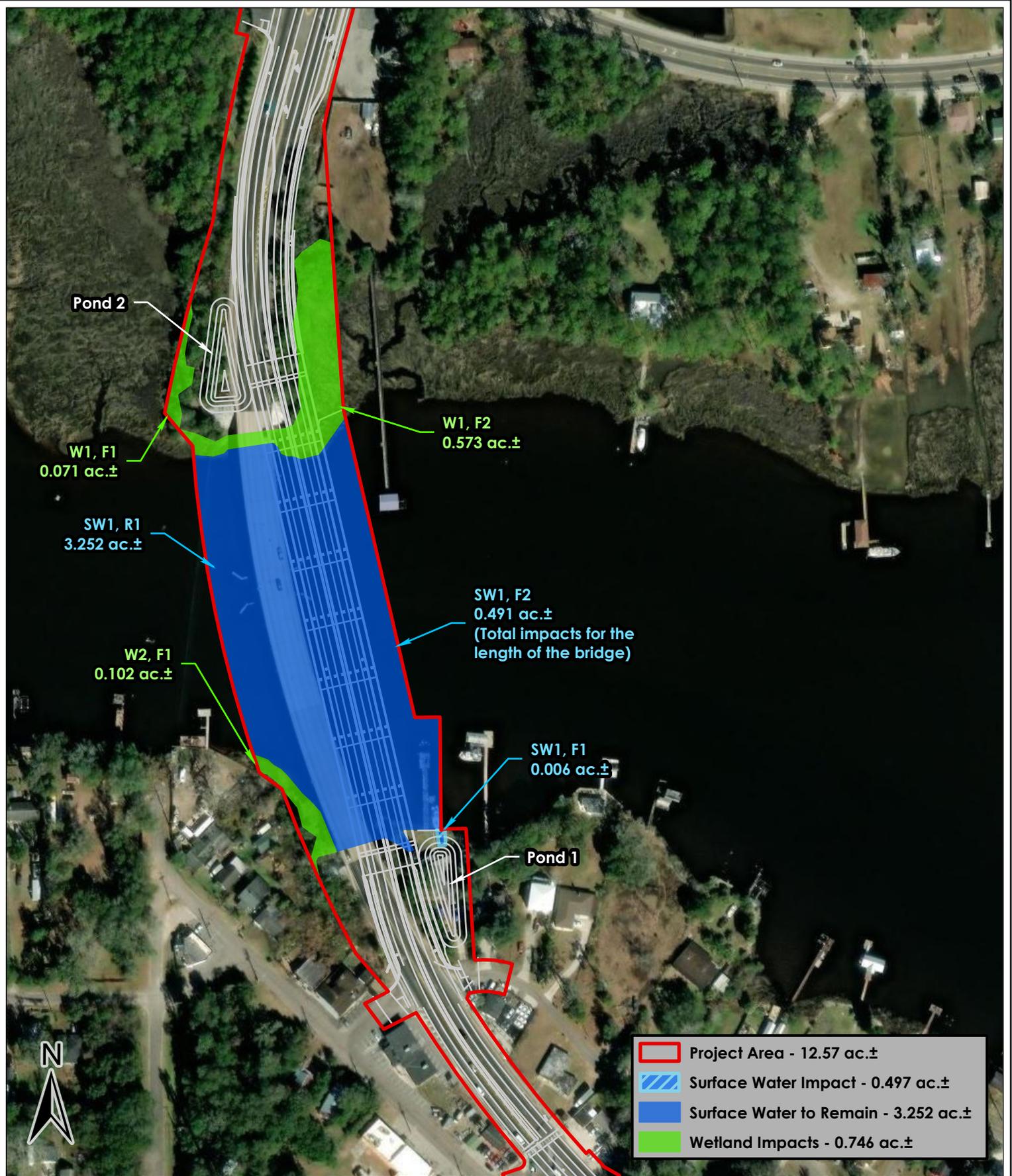
DATA SOURCE(S):  
ESRI WMS - World Aerial Imagery; USFWS, FWC

### Documented Occurrences of Manatees

**SR 115 (Lem Turner) at Trout River Alternative 3**  
**FIN 437437-2-22-01**

Jacksonville, Duval County, Florida

SES Project No:	1G001.7668.0003.19	
ERS Project No:	21092.01	Date: Jun 2023
Drawn By:	DF	EXHIBIT NUMBER <b>7B</b>
Reviewed By:	KAC	
Approved By:	KAC	



DATA SOURCE(S):  
ESRI WMS - World Aerial Imagery

### Wetlands and Surface Water Impacts

**SR 115 (Lem Turner) at Trout River Alternative 3**  
**FIN 437437-2-22-01**  
 Jacksonville, Duval County, Florida

SES Project No:	<b>1G001.7668.0003.19</b>	
ERS Project No:	<b>21092.01</b>	Date: <b>Jun 2023</b>
Drawn By:	<b>DF</b>	<b>EXHIBIT NUMBER 8</b>
Reviewed By:	<b>KAC</b>	
Approved By:	<b>KAC</b>	

**Appendix B – Federally-listed and Candidate Species and state-listed species – Duval County**

**Federally-listed, Candidate, and Proposed Species for Listing 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> )	Anglepod Milkvine	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.
<i>Matelea flavidula</i>	Yellow Carolina Milkvine	N	SE	Wooded slopes and bluff forests.
<i>Matelea floridana</i>	Florida Milkvine	N	SE	Hammocks.

**Federally-listed, Candidate, and Proposed Species for Listing and State-listed Species – Duval County.**

Scientific Name	Common Name	Federal Status	State Status	Preferred Habitat
<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	Seasonally flooded deciduous woodlands, often associated with <i>Sphagnum</i> .
<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 savannas, sandhills, flatwoods, and ecotones between sandhills and ponds. Semi-parasitic on roots of <i>Ilex glabra</i> , <i>Gaylussacia</i> , <i>Hypericum</i> , etc.
<i>Sideroxylon alachuense</i>	Silver buckthorn	N	SE	Floodplains and marsh edges.

Federally-listed, Candidate, and Proposed Species for Listing and State-listed Species – Duval County.				
Scientific Name	Common Name	Federal Status	State Status	Preferred Habitat
<i>Spiranthes breviflora</i>	Texas Ladies-Tresses	N	SE	Wet prairies and flatwoods.
<i>Spiranthes longiflora</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>Insects</b>				
<i>Danaus plexippus</i>	Monarch Butterfly	C	N	Breeding females lay eggs on <i>Asclepias</i> spp. (milkweeds) where the larvae develop; Non-breeding and breeding adults feed on many species of wildflowers, and so may occur in areas with high densities of wildflowers
<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/CH	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	N	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>Macrochelys suwanniensis</i>	Suwannee alligator snapping turtle	PT	PT	Confined to the Suwannee River basin, typically found in deeper rivers and tributaries.
<i>Pituophis melanoleucus</i> **	Pine Snake	N	ST	

**Federally-listed, Candidate, and Proposed Species for Listing and State-listed Species – Duval County.**

Scientific Name	Common Name	Federal Status	State Status	Preferred Habitat
				Sandhill, sand pine scrub and scrubby flatwoods.
<b>Birds</b>				
<i>Aphelocoma coerulescens</i> *	Florida Scrub-jay	T	FT	Fire-maintained scrub with scrub oaks and open areas.
<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	T	FT	Primarily occurs in tidal saltmarsh, but can also occur in freshwater wetlands, coastal prairies, and grassy fields.
<i>Leuconotopicus borealis</i> (= <i>Dryobates borealis</i> and <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>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>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>Perimyotis subflavus</i>	Tricolored Bat	PE	N	Commonly roost in culverts, caves, old mines, and other human structures during colder months. Roosts in leaves, recently deceased trees, Spanish moss, pine trees, and human structures during warmer months.

**Federally-listed, Candidate, and Proposed Species for Listing and State-listed Species – Duval County.**

Scientific Name	Common Name	Federal Status	State Status	Preferred Habitat
<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

**PE** = Proposed endangered

**N** = Not federally-listed.

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

Recovery plans can be found at: <https://www.fws.gov/endangered/species/recovery-plans.html>

**State-listed Species**

**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:

<https://myfwc.com/wildlifehabitats/wildlife/species-guidelines/>

## **Appendix C – UMAM**

site: **Lem Turner Road (SR 115) Over Trout River Bridge Replacement**

Date: **7.3.2023**

Alt 3	Habitat Type	Location and Landscape Support		Water Environment		Community Structure		Acres	Functional Loss	Rounded Functional Loss
		before	after	before	after	before	after			
<b>Impacts</b>										
Wet	642	7	0	9	0	9	0	0.497	0.4142	0.42
SW	510	7	0	9	0	0	0	0.746	0.5968	0.60
									0.0000	
									0.0000	
									0.0000	
									0.0000	
									0.0000	
									0.0000	
									0.0000	

**Total Impact**  
**Acres 1.24**  
 Each line is rounded up to the next hundredth.  
**Total Functional Loss 1.011**  
**Rounded Functional Loss 1.02**  
**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						
<b>Preservation</b>													
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
6								1	1.00		0.0000		0.0000
7								1	1.00		0.0000		0.0000
<b>creation</b>													
1								1	1.00		0.0000		0.0000
2								1	1.00		0.0000		0.0000
<b>uplands</b>													
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