Natural Resources Evaluation

Lem Turner Road (SR 115) Over Trout River Bridge Replacement
Bridge No. 720033
FM: 437437-2-22-01

Duval County, Florida

FINAL
September 2021

Prepared by:
Environmental Resource Solutions
A Division of SES Energy Services LLC

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

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1.0 EXECUTIVE SUMMARY

The Florida Department of Transportation, District 2 (FDOT) proposes improvements to a ±0.6-mile portion of State Road (SR) 115 (Lem Turner Road) from north of Trout River Boulevard to south of Broward Road. Within the study area, SR 115 is a four-lane urban minor arterial. The current bridge is a four-lane undivided facility with a total length of 742 feet. The proposed permanent replacement bridge will include four 11-foot travel lanes, a 7-foot median, and a 10-foot shared use path on each side. Two alternatives (Alternative 1 and Alternative 2) are associated with this project and involve the construction of a temporary bridge in order to accommodate traffic during construction. Both alternatives will require the acquisition of Temporary Construction Easements (TCEs) outside of the existing right-of-way (ROW). Alternative 2 also requires the acquisition of minor ROW. Both alternatives share the same permanent bridge footprint and design but differ in the location of the temporary bridge and associated required TCEs and/or acquired ROW. Alternative 1 involves constructing the temporary bridge on the western side of the existing structure, while Alternative 2 involves constructing the temporary bridge on the eastern side. The overall capacity of the of the SR 115 bridge crossing will not change. The current bridge structure was constructed in 1957 and is considered structurally deficient by FDOT and will need replacement due to deteriorating conditions.

Listed Species, Protected Species, and Other Species That May Have Regulatory Significance

A total of 20 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. An effects determination has been made for all species that may occur within the project study area.

No adverse effect is anticipated for four state-listed plant species (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. This species is also a candidate species for federal listing, and a federal effects determination will be made for this species if it becomes federally-listed prior to project construction. **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**, is 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 wetland mitigation plan. Continued agency coordination will occur during permitting to address final determination of impacts, implementation of protection measures, and mitigation if necessary.

The monarch butterfly is a candidate species for federal listing. It was not observed but has been given a low probability of occurrence. An effect determination will be made for this species if it becomes listed before the project is constructed. No bald eagle nests are located near the project study area. No bats were directly observed under the Trout River bridge. Staining, varying from light to heavy, was observed on the vertical faces of some bridge piers and pier caps, but bat presence could not be verified.

Wetlands

An estimated 0.344 acre of wetlands exists within the current ROW. Approximately 0.004 and 0.088 acres of additional wetlands are estimated to occur within the proposed TCEs and/or acquired ROW for Alternative 1 and Alternative 2, respectively. At this time, it is assumed that all wetlands within the existing ROW and

proposed alternatives may be permanently impacted, and that all impacts would require mitigation. Impacts will be incurred to wetlands in St Johns River Water Management District (SJRWMD) Drainage Basin 4. It is estimated that 0.29 mitigation credits will be required for impacts to wetlands within the existing ROW and approximately 0.01 and 0.08 additional mitigation credits will be required for impacts to wetlands within Alternative 1 and Alternative 2, respectively.

The Trout River waterbody comprises 2.754 acres within the existing ROW; however, only a small portion is likely to be impacted from riprap deposition and/or other fill based on current engineering and bridge replacement design standards. It is estimated that 0.066 acre of jurisdictional tidal waters will be impacted within the existing ROW. An additional 0.003 acre of jurisdictional tidal waters occur within Alternative 2. Alternative 1 does not include any additional tidal waters. It is estimated that 0.06 mitigation credits will be required for impacts to surface waters within the existing ROW and approximately 0.01 additional mitigation credits will be required for impacts to surface waters within Alternative 2.

The total estimated impacts to wetlands and surface waters in the existing ROW and each alternative, and the potential mitigation requirements, are summarized below. Wetland and surface water impact acreages and mitigation requirements are subject to change and will be finalized during the permitting process. FDOT will provide appropriate mitigation to satisfy final mitigation needs.

Alternatives	Tidal Wetlands and Waters (acres)	Saltwater Functional Loss Units
*Alternative 1	0.414 (0.41 acre within existing ROW and 0.004 acre within TCEs)	0.36
*Alternative 2	0.501 (0.41 acre within existing ROW and 0.091 acre within TCEs/new ROW)	0.44
**Note: Alternative acres and functional loss units include the existing ROW* *Source: UMAM Summary Sheets, Appendix C.*		

See **Section 5.0** for further information on wetland impacts and mitigation.

The SR 115 bridge crossing over Trout River has existing permits from SJRWMD (General Permit 153282-2) and USACE (SAJ-2018-01204) that authorized the deposit of riprap along the channel bottom to provide scour protection to the existing bridge pilings. The SJRWMD General Permit expires on May 1, 2023, and the USACE Nationwide Permit expires on March 18, 2022. Work performed outside of authorized activities outlined in these permits will require additional permitting and agency consultation efforts.

Essential Fish Habitat

Essential Fish Habitat (EFH) comprises all wetlands and jurisdictional waters within the existing ROW and both the eastern and western alternatives. Permanent impacts to wetlands and waters considered EFH will require mitigation, and any required functional gain units will offset the loss of EFH. See **Section 6.0** for further information about EFH.

Conservation Easements

Based on regulatory conservation easement (CE) GIS shapefile information published by the SJRWMD, no conservation easements 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 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 neither 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, will be necessary to determine if any other recorded conservation easements will be impacted by the proposed project.

2.0 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) evaluation for the replacement of the State Road (SR) 115 (Lem Turner Road) bridge over the Trout River (bridge #720033) in Duval County. This report serves as the Natural Resources Evaluation (NRE) study required as part of the PD&E Study. The PD&E's project limits along SR 115 are from north of Trout River Boulevard to south of Broward Road. However, the project study area as defined for the NRE is somewhat longer, spanning 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 current bridge is a four-lane undivided facility with a total length of 742 feet. The general project location is shown in in the figure below. For more information regarding the location of the bridge in Duval County, see **Figure 1** below and **Exhibit 1** (**Appendix A**).

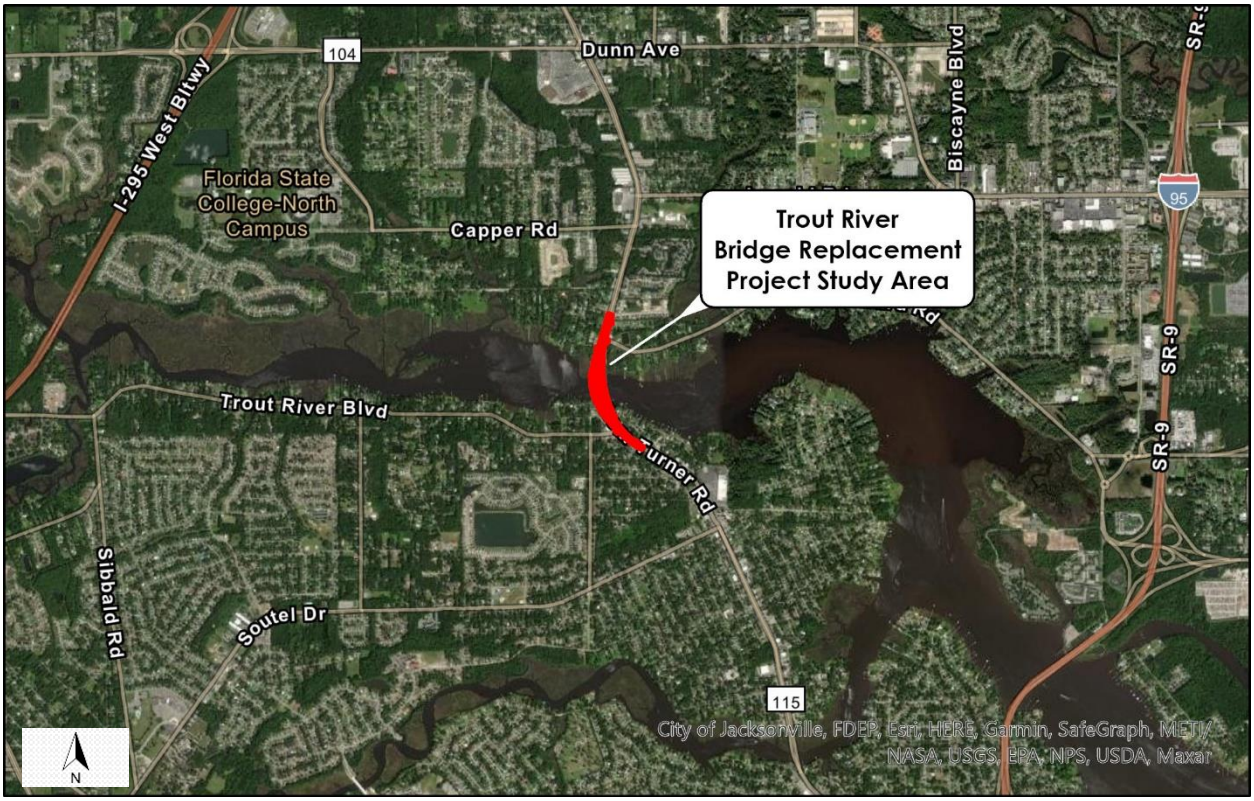

Figure 1. Location of the Lem Turner Road (SR 115) Trout River Bridge Replacement Project Area

The existing bridge was constructed in 1957 and has been found to be structurally deficient and in need of replacement. The proposed permanent replacement bridge will include four 11-foot travel lanes, a 7-foot median, and a 10-foot shared use path on each side. The permanent replacement bridge will be designed

with longer span lengths than the existing bridge resulting in fewer piles. Due to stability and constructability issues, proposed pile locations will be selected to avoid existing pile locations. A temporary bridge is proposed to accommodate traffic during construction. The temporary bridge would have two 11-foot travel lanes and a 5-foot sidewalk.

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

2.1 Build Alternatives

Preliminary screening of alternatives considered four primary options to maintain traffic during construction (phased construction using the existing bridge to maintain traffic on a portion of the existing bridge, closing the bridge with a detour, bridge on new alignment, and a temporary bridge). Due to the structurally deficient, scour critical condition of the existing bridge, phased construction using the existing bridge to maintain traffic during the bridge replacement was ruled out as a feasible option. Closing the bridge would result in a detour of approximately 9.5 miles (16 minutes) to the west via I-295, or 7.7 miles (13 minutes) to the east via I-95. Constructing the proposed bridge along new alignment (while maintaining traffic on the existing alignment) would result in the greatest impact to the surrounding environment and right-of-way. The construction of a temporary bridge would replace the existing bridge along the existing alignment with a temporary 2-lane Acrow bridge (with a sidewalk) to maintain traffic during construction. The construction of a temporary bridge represents the most favorable option of the above considered due to its limited impact on pedestrian and vehicular traffic, as well as the surrounding environment.

A temporary bridge is proposed to accommodate traffic during construction and will require the acquisition of Temporary Construction Easements (TCEs) and/or additional right-of-way (ROW). Two alternatives (Alternative 1 and Alternative 2) are associated with this project and involve the construction of the new bridge, as well as a temporary bridge in order to accommodate traffic during construction. Both alternatives will require the acquisition of a TCEs outside of the existing ROW. Alternative 2 also requires the acquisition of minor ROW.

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 TCEs, which impacts five residential parcels along the south end of the bridge to accommodate the temporary bridge. There are no anticipated impacts to the existing structures located on these parcels.

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 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.

The footprints of the two build alternatives and existing ROW are depicted on **Exhibit 2** (**Appendix A**). The combined areas of the existing ROW and the footprints of the two alternatives comprise the overall project study area. The potential impacts of each alternative on natural resources are discussed separately in this report when appropriate.

3.0 EXISTING CONDITIONS

Prior to the initiation of field work, existing conditions were evaluated utilizing various resources, including, but not limited to, recent aerial photographs from ArcGIS Online and soil survey mapping published by the U.S. Department of Agriculture - Natural Resources Conservation Service (USDA-NRCS). The project study area was defined as the proposed limits of construction (LOC) of the project provided by Parsons, the project engineer. Field investigations were conducted on June 24 and 28, 2021. 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 and its subsequent addendums as part of a previously proposed bridge repair project, and those boundaries were used to represent the approximate boundaries for the current study. 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 report are considered estimates and will be finalized during the permitting process. The habitat types (land cover/land use) which occur within the project study area are depicted on **Exhibit 2** (**Appendix A**) and described in detail below.

The majority of the project study area consists of existing, maintained ROW that includes existing travel lanes, road shoulders, mowed and maintained grass, and sidewalks. The only wetlands and waters within the project study area are the Trout River and its associated saltmarsh edges. The remaining project study area consists of ROW, forested uplands, and both commercial and residential developments. The study area is further described in **Section 3.2**.

3.1 Special Designations

3.1.1 Essential Fish Habitat

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

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

> **Waters** – aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate;
> **Substrate** – sediment, hard bottom, structures underlying the waters, and associated biological communities;
> **Necessary** – the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and
> **Spawning, breeding, feeding, or growth to maturity** – stages representing a species' full life cycle.

The project study area was evaluated for impacts to EFH in accordance with FDOT PD&E Manual Part 2, Chapter 17, Essential Fish Habitat (2020). In inland areas, it is generally understood that EFH is limited to portions of waterways that are subject to the ebb and flow of the tide, regardless of their salinity. The Trout

River and its associated saltmarsh edges (together comprising all of the wetlands and waters in the project study area) are tidally influenced and considered EFH. See **Section 6.0** for more information.

3.1.2 Florida Aquatic Preserves

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

3.1.3 National Wildlife Refuge System

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

3.1.4 Outstanding Florida Waters

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

3.1.5 Critical Habitat

Critical Habitat has been designated for three species in the coastal Duval County region: 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 Trout River bridge replacement project study area (**Exhibit 3**; **Appendix A**). All wildlife protection measures current at the time of construction will be followed, including those protecting manatees during in-water work. **Section 4.2** of this report provides additional information regarding Critical Habitats.

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

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

3.1.7 Habitat Areas of Particular Concern

Information regarding Habitat Areas of Particular Concern (HAPCs) is obtained using the NMFS online EFH Mapper Tool. This tool is only intended for areas waterward of the coastline; therefore, this tool is not appropriate for this project. See **Section 6.0** of this report for more details.

3.1.8 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 identify 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 west 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 neither 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, will be necessary to determine if any other recorded conservation easements will be impacted by the proposed project.

The boundary of the nearest CEs and other public lands depicted on **Exhibit 4** 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 over parts of the project study area, further research will be necessary to determine their status and what implications they will have on the project. If CEs are to be released as a part of the proposed action, additional mitigation costs will be required to recover the cost of removing a CE over encumbered wetlands.

3.2 Land Cover/Use

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

Uplands

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 project study area (Alternative 1) includes a small portion of one business.

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 contains large amounts of roadside trash. The proposed bridge replacement may involve impacts to the vegetated wetlands near the northern and southern river edges.

3.3 Soils

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

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

3.4 Hydrologic 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.)

4.0 PROTECTED SPECIES AND HABITAT

This project 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 report contains information pertaining to all federally-listed species, candidates for federal listing, and state-listed species that may occur within the project study area. Unless otherwise noted, all are collectively referred to as "listed species" in this report.

4.1 Methods

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

The assessment of potential impacts to listed species began with the identification of suitable habitat. Field investigations were conducted on June 24 and 28, 2021. The survey was conducted by trained biologists using visual and aural methods. Listed wildlife species were identified by burrows, scat, shed skins, tracks, sightings, and/or their distinctive calls. The probability of occurrence of each species is discussed below. Effect determinations were made for all federally- and state-listed species using effect determination keys and/or professional judgement.

4.2 Survey Results

4.2.1 Literature Search

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

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

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

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

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

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

A complete list of all federally- and state-listed plant and wildlife species that are documented as occurring in Duval County is included in **Appendix B**. A total of 86 listed species are known to occur in Duval County. Of these, 20 were determined to have some probability of occurrence within the project study area based on the presence of suitable habitat and observations. Environmental Resource Solutions (ERS) determined that due to the close similarities between the two studied build alternatives and existing ROW, there is no difference in the listed species that may occur, or in the probability of their occurrence. The combined areas of the existing ROW and two alternatives comprise the overall project study area and is analyzed for listed species in its entirety. These 20 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. Due to the close similarity between the two build alternatives, there is no difference in the effect determinations for any species that may occur. Effect determinations were not made for candidate species; 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 within the project area for those listed species that may occur. No listed species were encountered during the field inspection. 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**).

Table 1. Federally-listed and Candidate Species and State-listed Species That May Occur in the Project Study Area

Scientific Name	Common Name	Federal Status	State Status	Preferred Habitat	Habitat Present Within Project Study Area(s)	Probability of Occurrence
Plants and Lichens						
Gonolobus suberosus (= Matelea gonocarpus)	Anglepod Milkvine	N	ST	Hammocks	Disturbed roadside forest edges along the banks of the Trout River provide marginally suitable habitat.	Low

Table 1. Federally-listed and Candidate Species and State-listed Species That May Occur in the Project Study Area						
Scientific Name	**Common Name**	**Federal Status**	**State Status**	**Preferred Habitat**	**Habitat Present Within Project Study Area(s)**	**Probability of Occurrence**
Opuntia stricta	Erect Pricklypear	N	ST	Dunes, coastal scrub, maritime hammock edges, and coastal ruderal areas	Disturbed roadside forest edges along the banks of the Trout River provide marginally suitable habitat.	Low
Zephyranthes atamasca var. *atamasca*	Rainlily	N	ST	Swamps, floodplains, wet prairies, and wet roadsides	Grassy maintained areas along the roadside provide potentially suitable habitat.	Low
Zephyranthes atamasca var. *treatiae*	Treat's Rainlily	N	ST	Swamps, floodplains, wet prairies and wet roadsides	Grassy maintained areas along the roadside provide potentially suitable habitat.	Low
Insects						
Danaus plexippus	Monarch Butterfly	C	N	Breeding females lay eggs on *Asclepias* 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	Milkweeds for breeding were not observed, but grassy road shoulders may periodically produce wildflowers that could be used by adults for foraging.	Low
Fish						
*Acipenser brevirostrum***	Shortnose Sturgeon	E	FE	Large rivers and coastal waterways; Formerly bred in the Ocklawaha River before the Rodman Dam was constructed	The portion of the Trout River that occurs in the project area may be marginally suitable.	Low
*Acipenser oxyrinchus oxyrinchus**	Atlantic Sturgeon	E	FE	Atlantic Ocean and portions of large river systems	The portion of the Trout River that occurs in the project area may be marginally suitable.	Low
Pristis pectinata	Smalltooth Sawfish	E	FE	Open sea, estuaries, bays, and river mouths	The portion of the Trout River that occurs in the project area may be marginally suitable.	Low

Table 1. Federally-listed and Candidate Species and State-listed Species That May Occur in the Project Study Area						
Scientific Name	**Common Name**	**Federal Status**	**State Status**	**Preferred Habitat**	**Habitat Present Within Project Study Area(s)**	**Probability of Occurrence**
Reptiles						
Caretta caretta	Loggerhead Sea Turtle	T	FT	Open sea, bays, lagoons, creeks; beaches for nesting	The portion of the Trout River that occurs in the project area may be suitable.	Moderate
Chelonia mydas	Green Sea Turtle	T	FT	Open sea, inshore bays, tidal creeks; beaches for nesting	The portion of the Trout River that occurs in the project area may be suitable.	Moderate
*Drymarchon corais couperi**	Eastern Indigo Snake	T	FT	Linked to xeric habitats and gopher tortoise burrows, but also uses other natural habitats such as mesic uplands, swamps, and freshwater marshes as foraging habitat	On-site and adjacent habitats and land uses represent extremely marginal potential habitats.	Low
*Gopherus polyphemus**	Gopher Tortoise	C	ST	Sandhills, scrub, dry flatwoods, dry ruderal areas	Edges of ROW along adjacent private properties may provide marginally suitable habitat.	Low
*Lepidochelys kempii**	Kemp's Ridley Sea Turtle	E	FE	Open sea, bays, lagoons, inlets; beaches for nesting	The portion of the Trout River that occurs in the project area may be marginally suitable.	Low
Birds						
*Cistothorus palustris griseus***	Worthington's Marsh Wren	N	ST	Tidal marshes dominated by cordgrass	Saltmarsh areas along the northern and southern portions of the SR 115 Bridge crossing over the Trout River may provide marginal foraging habitat.	Low
*Egretta caerulea***	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	Saltmarshes along the edges of the Trout River provide suitable foraging habitat.	High
*Egretta tricolor***	Tricolored Heron	N	ST	Forages in a wide variety of freshwater, brackish,	Saltmarshes along the edges of the	High

Table 1. Federally-listed and Candidate Species and State-listed Species That May Occur in the Project Study Area						
Scientific Name	**Common Name**	**Federal Status**	**State Status**	**Preferred Habitat**	**Habitat Present Within Project Study Area(s)**	**Probability of Occurrence**
				and saline wetlands and waterways, including ponds and ditches; Prefers coastal habitats, Nests in mixed colonies in flooded trees or shrubs or on islands	Trout River provide suitable foraging habitat.	
Laterallus jamaicensis jamaicensis	Eastern Black Rail	T	FT	Primarily occurs in tidal saltmarsh, but can also occur in freshwater wetlands, coastal prairies, and grassy fields	Saltmarshes along the edges of the Trout River provide suitable foraging habitat.	Low
Mycteria americana	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	Saltmarshes along the edges of the Trout River provide suitable foraging habitat.	High
*Platalea ajaja***	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	Saltmarshes along the edges of the Trout River provide suitable foraging habitat.	High
Mammals						
*Trichechus manatus***	West Indian Manatee	T/CH	FT	Estuaries, tidal rivers, springs, and spring runs	The portion of the Trout River in the project study area is accessible to manatees and is Designated Critical Habitat for the species.	High

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.

Table 1. Federally-listed and Candidate Species and State-listed Species That May Occur in the Project Study Area						
Scientific Name	**Common Name**	**Federal Status**	**State Status**	**Preferred Habitat**	**Habitat Present Within Project Study Area(s)**	**Probability of Occurrence**

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: species listed by the state that are likely to become endangered within the foreseeable future throughout all or a significant portion of its range.
FE = Federally endangered: species federally listed as being in danger of extinction throughout all or a significant portion of its range.
FT = Federally threatened: species federally listed as likely to become endangered within the foreseeable future throughout all or a significant portion of its range.
****** = FWC has developed a draft or final Permitting Guidelines document for this species. Permitting guidelines can be found at: https://myfwc.com/wildlifehabitats/wildlife/species-guidelines/

4.2.2 Listed Species That May Occur in the Project Study Area

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

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

The project study area was inspected by an experienced botanist during the field investigations conducted in June 2021 to identify potential habitat for listed plant species and to positively identify any species visible at the time.

Based upon the preliminary data analysis and the June 2021 field investigations, a total of four (anglepod milkvine, erect pricklypear, rainlily, and Treat's rainlily) state-listed plant species were determined to have some probability of occurrence in the project study area. The characteristic leaves of the anglepod milkvine may be overhead and hard to discern. The erect pricklypear is common in sunny dry coastal habitats. Finally, 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 inspection. All of the listed plants that may occur were given a low probability of occurrence and none were observed in the in the project study area during the site inspections. No federally-listed plant species are known to occur in Duval County. 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.

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

FISH

Shortnose Sturgeon (*Acipenser brevirostrum*) and **Atlantic Sturgeon** (*Acipenser oxyrinchus oxyrinchus*) – These federally-endangered sturgeon species are known to occur in the St. Johns River and its larger tributaries. Both species spawn in freshwater streams and live as adults closer to or in costal habitats. While highly unlikely due to the species' rarity in Northeast Florida, individuals may be found in the area. Sturgeons are unlikely to stray out of the main stem of the St. Johns River into the portion of the Trout River at the SR 115 crossing. Both of these species have been given a low probability of occurrence in the project study area. The replacement of the SR 115 bridge **may affect, but is not likely to adversely affect** these species. In-water work may include, but is not limited to, the construction of a temporary bridge to maintain traffic patterns, the replacement of existing pilings, and the construction of riprap on the northern and southern ends of the bridge. FDOT will follow the most current construction guidelines for 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** (*Caretta caretta*; federally threatened), **green** (*Chelonia mydas*; federally threatened), and **Kemp's ridley** (*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 2.1 miles from 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. The project will adhere to the most current protection measures at the time of construction for any in-water work. Therefore, work in and around the Trout River bridge crossing **may affect, but is not likely to adversely affect**, these three sea turtles.

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 project's effect on this species was determined by using the FWS' *Eastern Indigo Snake Programmatic Effect Determination Key* (updated August 2017) as follows:

A. Project is not located in open water or salt marsh……..…….go to B
B. Permit will be conditioned for use of the Service's *Standard Protection Measures For The Eastern Indigo Snake* during site preparation and project construction……..…….go to C

C. The project will impacts less than 25 acres of eastern indigo snake habitat (e.g. sandhill, scrub, pine flatwoods, pine rocklands, scrubby flatwoods, high pine, dry prairie, coastal prairie, mangrove swamps, tropical hardwood hammocks, hydric hammocks, edges of freshwater marshes, agricultural fields [including sugar cane fields and active, inactive, or abandon citrus groves], and coastal dunes)……..go to D
D. The project has no know holes, cavities, active or inactive gopher tortoise burrows, or other underground refugia where a snake could be buried, trapped, and/or injured during project activities…….NLAA

The replacement of the Trout River bridge will not affect more than 25 acres of xeric 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 FWS requirements. Therefore, it is expected that the construction of the project **may affect, but is not likely to adversely affect**, the eastern indigo snake. Further consultation is not required.

Gopher Tortoise (*Gopherus polyphemus*) – The gopher tortoise is a state-threatened, and candidate for federal-listing, species that inhabits xeric and mesic forests, fields, and disturbed areas. During the site inspection, no gopher tortoises or highly suitable habitat were observed in the project study area. While this preliminary inspection does 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 survey, 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 state-listed species.

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**.

State-listed Wading Birds – The **little blue heron** (*Egretta caerulea*), **tricolored heron** (*Egretta tricolor*), and **roseate spoonbill** (*Platalea ajaja*) are state-listed as threatened species. All of these bird species have a high probability of occurrence in the project study area's saltmarshes, where 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 FWS. The nearest documented wading bird rookery is approximately 6.6 miles east of the project study area and was last documented as active in the 1990s FWC survey (**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 inspection. 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 on 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 and 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. FWS designates CFAs for each documented wood stork colony by region. Duval County is within the North Florida region, which defines each CFA as a 13-mile radius surrounding the colony location. All wetlands and waterways within the 13-mile radius may be considered Suitable Foraging Habitat (SFH) for wood storks.

As noted on **Exhibit 6** (**Appendix A**), the entire project study area is located in the CFA of one or two documented active wood stork colonies, the nearest of which is located approximately 2.5 miles southeast of the project study area. No wood storks were observed during field investigation, 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 likely too deep to serve as SFH. The footprints of saltmarsh in the existing ROW in combination with either project Alternative 1 or Alternative 2 contain less than half an acre of saltmarsh (0.348 acre and 0.432 acre, respectively). While the precise amount is not exactly known, both alternatives are likely to impact saltmarsh habitat. The project's potential effect on wood storks was evaluated using the USACE/FWS *Effect Determination Key for the Wood Stork in Central and North Peninsular Florida (2008)*.

If impacts to saltmarsh is less than one half acre, the effect determination proceeds as follows:

A. Project more than 2,500 feet from a colony site ……..……go to B
B. Project impacts SFH ……..……go to C
C. Project impacts to SFH are less than or equal to 0.5 ac. ……..……*"NLAA"*

If the project impacts more than 0.5 acre of saltmarsh, wetland mitigation will be provided that will offset the loss of SFH. Therefore, the evaluation proceeds as follows:

A. Project more than 2,500 feet from a colony site ……..……go to B
B. Project impacts SFH ……..……go to C
C. Project impacts to SFH are greater than or equal to 0.5 ac.……..……go to D
D. Project impacts to SFH are within the CFA of a colony site, or wood storks have been documented foraging on a project site outside the CFA ……..……..……..go to E

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

If the project impacts less than 0.5 acre of saltmarsh, the project **may affect, but is not likely to adversely affect**, the wood stork. If the project impacts 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. No further consultation regarding this species is required.

MAMMALS

West Indian Manatee (*Trichechus manatus*) – The West Indian manatee is federally listed as threatened 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 within the project study area is included in 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. Following *The Corps of Engineers, Jacksonville District and the State of Florida Effect Determination Key for the Manatee in Florida* (April 2013) a preliminary determination of "**may affect, not likely to adversely affect**" was reached 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 that 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 (see **Section 5.0** of this report). 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 most current agency construction conditions for this species. 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.

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

Monarch Butterfly (*Danaus plexippus*) – This species was recently designated as a candidate species for federal listing by FWS (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, has been given a low probability of occurrence. The construction of the project is not expected to permanently eliminate all of the 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 proposed 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 are large raptors that average 14 pounds with a wingspan of approximately 8 feet as adults. They are brown with white head and tail feathers and range across North America utilizing a variety of habitats including coastal areas, rivers, lakes, and other territories in proximity to their preferred food, fish. In Florida, there are over 1,000 documented nesting pairs of bald eagles.

No bald eagles were observed within the project study area during field investigations. **Exhibit 7A** (**Appendix A**) depicts the locations of the documented bald eagle nests within 5 miles. Although the bald eagle has been delisted, restrictions regarding work around their nests are still in place. These restrictions vary based on the time of year and distance from the nest. The USFWS Florida Ecological Services Field Offices (FO's) in Jacksonville defines two buffer zones from the central location of a nest that defines activity restrictions based on their distance, the primary and secondary zones. The primary activity zone is 330 feet, and the secondary activity zone is 660 feet from the central location of 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 0.7-mile (3,696-feet) southeast 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 - No federally- or state-listed species of bats are known to occur in Duval County. However, FWC regulates work that affects colonies of non-listed bats 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 inspections for the presence of bat colonies were conducted for accessible and visible portions of the northern and southern end 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*). All three of these are non-listed species, and there are no federally-listed species found in Duval County. 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.

4.3 Mitigation (Conceptual)

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

4.4 Agency Coordination (Listed Species)

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

4.5 Conclusions (Listed Species)

A total of 20 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. All species discussed in this report have the same probability of occurrence and the same effect determination for the project study area, regardless of alternative.

Federally-listed Species

A total of 10 federally-listed species are given some probability of occurrence within the project study area. The shortnose sturgeon, Atlantic sturgeon, smalltooth sawfish, eastern indigo snake, Kemp's ridley, and

eastern black rail are all given a low probability of occurrence. The loggerhead and green sea turtle are both given a moderate probability of occurrence. The wood stork and West Indian manatee are 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 FWS 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

State-listed Species

A total of 9 state-listed species are given some probability of occurrence throughout the project area. The anglepod milkvine, erect pricklypear, rainlily, Treat's rainlily, gopher tortoise, and Worthington's marsh wren are given a low probability of occurrence. The roseate spoonbill, little blue heron, and tricolored heron are 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

The monarch butterfly was not observed but has been given a low probability of occurrence in the project study area due to the presence of roadside wildflowers. A federal effect determination will be made for this species if it becomes federally-listed before the project is constructed.

FDOT will adhere to a number of implementation measures and project commitments regarding protected species. They are summarized below.

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 the SR 115 bridge for the presence of bats prior to construction.

Project Commitments:

- FDOT will implement the FWS *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 in-water work.
- FDOT will adhere to the NOAA Southeast Regional Office *Protected Species Construction Conditions* and *Vessel Strike Avoidance Measures* for in-water work.

- FDOT will implement the FWS' *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 of this project.
- If bats are present in bridges or culverts, FDOT will implement agency approved bat exclusion methods during project construction.

5.0 WETLAND EVALUATION

5.1 Identification, Delineation, and Classification of Wetlands and Waters

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

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

Field investigations were completed on June 24 and 28, 2021. The boundaries of jurisdictional wetlands within the project study area were delineated in accordance with Chapter 62-340, F.A.C., and the USACE 1987 Manual and its subsequent addendums. The boundaries of the wetlands and waters in the project study area were delineated for a previously-proposed bridge repair project, and those boundaries were used to represent the approximate boundaries for the current study. Because none of the wetlands or other surface waters are considered verified by the regulatory agencies for this project, all wetland and surface water boundaries and acreages given in this report are considered estimates and will be finalized during the permitting process. The approximate boundaries of all wetlands and surface waters identified within the project study area are depicted on **Exhibit 2** (**Appendix A**)

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

At this time, it is assumed that all of the wetlands and waters within the project study area are jurisdictional and regulated by SJRWMD. The 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. Final jurisdictional determinations will be determined in conjunction with regulatory staff during the permitting process. Depending on the types of permits for which the project qualifies and the final temporary and permanent impact acreage, it is assumed that both agencies will require mitigation for impacts to all wetlands within the project study area.

5.2 Existing Wetlands and Other Surface Waters

All wetlands that occur within the project study area were identified and assessed for this report (**Appendix A**; **Exhibit 2**). A total of 0.436 acre of wetlands and 2.757 acres of surface waters are estimated to occur within the project study area. A total of approximately 0.344 acre of wetlands and 2.574 acres of surface waters exist within the current ROW. Approximately 0.004 and 0.088 acres of additional wetlands are estimated to occur within Alternative 1 and Alternative 2, respectively, and approximately 0.003-acre of additional open water occurs within Alternative 2. At this time, it is assumed that all of the wetlands in each alternative may be permanently impacted. Based on preliminary design information, it is estimated that only a small portion of the open water is likely to be impacted from riprap deposition and/or other fill. It is estimated that only approximately 0.066 acre of jurisdictional tidal waters will be impacted to construct Alternative 1, and approximately 0.069 acre to construct Alternative 2. The wetlands and surface waters that may be impacted by the project are saltwater tidal, requiring saltmarsh functional gain units to offset lost functions. See **Section 3.2** for a full description of the surface waters and wetlands identified in the project study area.

The project study area does not contain stormwater management facilities. However, should stormwater management facilities be developed within the project 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 is not included in this NRE.

All tidal wetlands and all waterways are assumed to be jurisdictional by SJRWMD and USACE.

5.3 Wetland Assessments

For the purposes of this evaluation, all wetlands within the study area boundary of each alternative include the existing ROW and are considered to be potential permanently impacted. Impacts to the open water areas of Trout River and expected to be minimal and limited to installation of new pilings and possible riprap at the bridge ends. As mentioned in Section 5.2 above, impacts in the open water are expected to be approximately 0.066 acre for Alternative 1, and approximately 0.069 acre for Alternative 2. Exact final wetland and surface water impacts will be determined after survey, agency verification of the wetland lines, and final design. Ultimately, wetland and surface water impacts are expected to be less than the total that exist within the project limits, as the roadway and bridge design over Trout River are finalized. In addition, some impacts will likely be temporary in nature rather than permanent or partial rather than total. In general, it is assumed that the saltmarsh located in each alternative and existing ROW will be permanently and/or temporarily impacted when the new permanent bridge is constructed, and the expected TCEs are established. While construction details are unknown at this time, impacts to the open water portions of Trout River are expected to be limited to minor temporary and/or permanent impacts. Open water activities that will be undertaken regardless of the selected alternative include, construction of a temporary bridge, the removal of the old bridge, the construction of the new permanent bridge, the removal of the temporary bridge, the removal and placement of pilings, and placement of riprap. All practicable measures will be taken during the design phase to avoid and minimize impacts to wetlands and waters. All wetlands within the project study area are depicted in **Exhibit 2** (**Appendix A**). It is assumed that all proposed impacts to wetlands and waterways may require mitigation. During the permitting process, final mitigation requirements will be determined.

The Uniform Mitigation Assessment Methodology (UMAM) was used to estimate the amount of mitigation required to offset impacts to wetlands. The UMAM Summary Sheets for the project's two alternatives are included in **Appendix C**. The estimated UMAM scores are shown in **Table 2**. These representative UMAM scores will be re-evaluated at the time of permitting based on the final design plans. **Tables 2 and 3** summarize the estimated wetland impacts and estimated functional losses associated with the project.

Table 2. Alternative 1 Summary of Estimated Wetland Impact Acreage and Functional Loss

Wetland and Water Type	Impact Acreage	UMAM Score	Functional Loss[1]
*642 / E2EM1	0.348 (*0.344 acre within existing ROW and 0.004 acre within TCEs*)	0.83	0.30
*510 / E1UB3	0.066 (*0.066 within existing ROW*)	0.80	0.06
Totals	**0.414**	**-**	**0.36**

**Note: Alternative acres and functional gain units include the existing ROW*
[1]Source: UMAM Summary Sheets, **Appendix C**.

Table 3. Alternative 2 Summary of Estimated Wetland Impact Acreage and Functional Loss

Wetland and Water Type	Impact Acreage	UMAM Score	Functional Loss[1]
*642 / E2EM1	0.432 (*0.344 within existing ROW and 0.088 within TCEs/new ROW*)	0.83	0.37
*510 / E1UB3	0.069 (*0.066 within existing ROW and 0.003 within TCEs/new ROW*)	0.80	0.07
Totals	**0.501**	**-**	**0.44**

**Note: Alternative acres and functional gain units include the existing ROW*
[1]Source: UMAM Summary Sheets, **Appendix C**.

Functional loss incurred is calculated by multiplying the UMAM score by the acreage of the wetland or jurisdictional water impact. Functional loss is offset by purchasing or generating an equal amount of functional gain. Permanent Impacts to both tidal wetlands and waterways (Saltmarsh and Streams and Waterways, respectively) will require tidal saltmarsh mitigation credits.

5.4 Avoidance and Minimization

Avoidance and minimization of wetland impacts will be considered to the maximum extent practicable throughout all phases of development. At the preliminary level of the current study, it is assumed that all jurisdictional wetlands within the project study area may be impacted by the construction of the bridge replacement. However, the actual impacts that will be incurred are likely to be less. The replacement bridge will likely be constructed within the same footprint of the current SR 115 bridge, limiting the amount of new permanent impacts that will be incurred. All wetlands and waters likely to be impacted are associated with the bridge replacement. Impacts to wetlands will be evaluated in detail in the design phase of the project. Applicable Best Management Practices (BMPs) for erosion control and water quality considerations will be adhered to during the construction phase of the project. The use of BMPs as necessary will protect the water quality of downstream systems.

5.5 Secondary and Cumulative Impacts

Secondary impacts may include increased noise, light penetration, and wildlife mortality beyond the limits of construction of a project. Depending on their design, bridge replacement projects may be determined to have no secondary impacts to wetlands. If secondary impacts are determined to be incurred, additional mitigation may be required. The size, extent, and loss of function to adjacent wetlands will be determined during permitting and will vary based on surrounding land use, proposed work, and other factors.

Cumulative impacts are not assessed if mitigation is performed in the same basin in which the impacts occur. FDOT intends to provide mitigation, if required, for unavoidable permanent impacts within the same drainage basin as the proposed impacts. Therefore, cumulative impacts are not expected.

5.6 Wetland Mitigation (Conceptual)

All wetlands and waters that may be impacted by the project are tidal and will require tidal saltmarsh functional gain units to offset impacts. It is estimated that up to 0.36 units of saltmarsh functional gain will be required to offset wetland and surface water impacts that may incurred by Alternative 1, and 0.44 units of credit may be required for Alternative 2. The precise amount and type of mitigation required will be identified and negotiated with all applicable regulatory agencies when the project enters the design/permitting phase.

FDOT will evaluate various strategies to fulfill mitigation needs for wetland impacts resulting from the construction of the proposed project. These strategies may include purchasing mitigation credits from approved mitigation banks serving the area in which the project is located. At the time this evaluation was prepared, The North Florida Saltwater Marsh Mitigation Bank is 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. Wetland impacts which will result from the construction of this project will 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.

5.7 Permits Required

The regulatory agencies exerting jurisdiction over potentially affected wetlands will require permits for unavoidable impacts. The project is expected to require an Individual Environmental Resource Permit from SJRWMD. In addition, the project will require either an Individual Permit or a Nationwide Permit (NWP) from USACE. Depending on the final design, the project may qualify for NWP 3 (Maintenance Activities) or NWP 15 (U.S. Coast Guard Approved Bridges). Compliance with USACE Section 404(b)(1) guidelines includes verification that all impacts have been avoided to the greatest extent practicable, that unavoidable impacts have been minimized, and that a compensatory mitigation plan has been provided for unavoidable wetland impacts.

In December 2020, FDEP assumed regulatory responsibility over waters of the United States (WOTUS) jurisdictional under only Section 404 of the Clean Water Act. USACE retained jurisdiction over all WOTUS deemed jurisdictional under the Rivers and Harbors Act of 1899. The assumption of jurisdiction is outlined in Chapter 62-331, F.A.C. and in the operating agreement between FDEP and the Environmental Protection Agency (EPA). Project-specific permitting responsibility is based on the location of impacts as they pertain to

FDEP-assumed or USACE- retained waters. The permitting of any project that involves impacts to a USACE-retained wetland or water would be administered by USACE; while any project that only involves impacts to FDEP-assumed wetlands would be administered by FDEP.

The online FDEP ArcGIS tool showing USACE-retained wetlands and waters was used to determine the federal permitting agency that would be assigned to the project. Trout River and its tidal wetlands are listed as retained waters, therefore, USACE will be responsible for the permitting of all wetland and surface water impacts within the project study area. Final determination of WOTUS permitting responsibilities will be made during the permitting process using the final design and the current boundaries of retained waters. Regardless of the type of permit issued by USACE, a project that involves impact to tidal wetlands and jurisdictional waterways is expected to require saltmarsh mitigation *regardless of the size of the impact*.

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

5.8 Agency Coordination (Wetlands)

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

5.9 Conclusions (Wetlands)

A total of 0.344 acre of saltmarsh and 0.066 acre of open water are estimated to be impacted within the existing ROW. Additionally, a total of 0.004 acre of saltmarsh are estimated to be impacted by Alternative 1, and an additional 0.003 acre of open water and 0.088 acre of saltmarsh are estimated be impacted by Alternative 2. At this time, it is assumed that all wetlands within the respective alternatives and existing ROW may be permanently impacted, and that all wetlands would require mitigation, if impacted. All wetlands and waters that may be impacted by the project are tidal and will require tidal saltmarsh functional gain units to offset impacts. It is estimated that up to 0.36 units of saltmarsh functional gain will be required to offset wetland and surface water impacts that may incurred by Alternative 1, and 0.44 units of credit may be required by Alternative 2. Wetland impact acreages and mitigation requirements will be finalized during the permitting process. FDOT will provide appropriate mitigation to satisfy final mitigation needs.

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

6.0 ESSENTIAL FISH HABITAT

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

6.1 Methods

The project study area was evaluated for EFH in accordance with Part 2 Chapter 17 of the PD&E Manual (2020) using field observations and by inspection of available aerial photographs and soil survey data. In inland areas, it is generally understood that EFH is limited to portions of waterways that are subject to the ebb and flow of the tide, regardless of their salinity, and that in such tidal waters EFH extends up to the Mean High Water Level (MHWL) of the system. Tidal action pushes water upstream into freshwater systems, and these tidal pulses extend beyond the reach of plants adapted to saline or brackish waters. Therefore, EFH consists of saline, brackish, and freshwater tidal waters. Mitigation for the permanent loss (i.e. fill) of EFH takes the form of saltmarsh functional gain for saline or brackish EFH, or a combination of saltmarsh and freshwater functional gain for freshwater EFH.

The proposed action includes the replacement of the SR 115 bridge over the Trout River. The Trout River flows southeast into the St. Johns River, which then flows into the Atlantic Ocean. At the bridge crossing, the Trout River is tidally influenced, and its edges are dominated by vegetation adapted to brackish water conditions such as cordgrass and needlerush. Therefore, the Trout River and its saltmarsh edges (all wetlands and waters in the project study area) are classified as EFH.

6.2 Potential Impacts and Mitigation (Conceptual)

As discussed in **Section 5.2** above, the footprints of the two build alternatives have marginally different amounts of wetlands and waters in each. The existing ROW contains 3.098 acres of EFH. Alternative 1 contains a total of 0.004 acre of EFH, and Alternative 2 contains 0.091 acre of EFH. At this time, it is assumed that all of the wetlands within the existing ROW and all wetlands and waters within each respective alternative may be permanently impacted. However, only a small portion of the total surface water present within the existing ROW is likely to be impacted from riprap deposition and/or other fill based on current engineering and bridge replacement design standards. It is estimated that only 0.066 acre within the existing ROW of jurisdictional tidal waters will be impacted as part of this project. As detailed in **Section 5.3** above, the total acreage of surface water and wetland impact necessary to construct either alternative is expected to be less than the total amount present, as the final design is expected to employ various practicable avoidance and minimization methods. However, regardless of the impact acreage of tidal and jurisdictional waterways and of the type of federal permit that is required, USACE is expected to require mitigation for all such impacts. Unavoidable impacts to any wetlands and tidal jurisdictional waters will require the use of saltmarsh functional gain units. The use of these saltmarsh functional gain units will offset the loss of EFH.

This NRE will be submitted to NMFS for technical assistance, and further assessment of EFH impacts will be undertaken as and if required by that agency during the design and permitting phases of the project.

6.3 Agency Coordination (EFH)

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

6.4 Conclusions (EFH)

All wetlands and tidal waters within the project study area are EFH. Approximately 0.414 acre of EFH is expected to impacted by Alternative 1, requiring approximately 0.36 units of saltmarsh functional gain. Approximately 0.501 acre of EFH is expected to impacted by Alternative 2, requiring approximately 0.44 saltmarsh functional gain units. 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.

7.0 CONCLUSION

A total of 20 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.

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. This species is also a candidate species for federal listing, and a federal effects determination will be made for this species if it becomes federally-listed prior to project construction. **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**, is 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 will occur during permitting to address final determination of impacts, implementation of protection measures, and mitigation if necessary.

The monarch butterfly was not observed but has been given a low probability of occurrence in the project study area. An effect determination will be made for this species if it becomes federally-listed before the project is constructed.

Continued agency coordination will occur during permitting to address final determination of impacts, implementation of protection measures, and mitigation if necessary. All wetlands and jurisdictional waters associated with Trout River are classified as EFH, and the placement of fill in any of those systems will affect EFH. Impacts in these areas are expected to require mitigation, and any required functional gain units will offset the loss of EFH. Prior to construction activities, FDOT will coordinate with NMFS and USACE (as necessary) to address EFH issues, impacts, and mitigation plans during the design and permitting phases of the project.

An estimated 0.344 acre of wetlands exists within the current ROW. Approximately 0.004 and 0.088 acres of additional wetlands are estimated to occur within the proposed TCEs and/or acquired ROW for Alternative 1 and Alternative 2, respectively. At this time, it is assumed that all wetlands within the existing ROW and all

wetlands and waters within the proposed TCEs and/or ROW in the proposed alternatives may be permanently impacted, and that all impacts would require mitigation. Impacts will be incurred to wetlands in SJRWMD Drainage Basin 4. It is estimated that 0.29 mitigation credits will be required for impacts to wetlands within the existing ROW and approximately 0.01 and 0.08 additional mitigation credits will be required for impacts to wetlands within Alternative 1 and Alternative 2, respectively. The Trout River waterbody comprises 2.754 acres within the existing ROW; however, only a small portion is likely to be impacted from riprap deposition and/or other fill based on current engineering and bridge replacement design standards. It is estimated that 0.066 acre of jurisdictional tidal waters will be impacted within the existing ROW. An additional 0.003 acre of jurisdictional tidal waters occur within Alternative 2. Alternative 1 does not include any additional tidal waters. It is estimated that 0.06 mitigation credits will be required for impacts to surface waters within the existing ROW and approximately 0.01 additional mitigation credits will be required for impacts to surface waters within Alternative 2. Wetland and surface water impact acreages and mitigation requirements are subject to change and will be finalized during the permitting process. FDOT will provide appropriate mitigation to satisfy final mitigation needs.

The SR 115 bridge crossing over Trout River has existing permits from SJRWMD (General Permit 153282-2) and USACE (SAJ-2018-01204) that authorized the deposit of riprap along the channel bottom to provide scour protection to the existing bridge pilings. The SJRWMD General Permit expires on May 1, 2023 and the USACE Nationwide Permit expires on March 18, 2022. Work performed outside of authorized activities outlined in these permits will require additional permitting and agency consultation efforts.

Based on regulatory CE GIS shapefile information published by the SJRWMD, no conservation easements 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 right-of-way (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.

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 FWS *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* and *Vessel Strike Avoidance Measures* for in-water work.
- FDOT will implement the FWS' *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.

The table below compares the potential effects to natural resources resulting from each alternative.

Table 4. Comparison of the Potential Natural Resource Effects by Alternative

Alternative	CEs	Wood Stork SFH	Tidal Wetlands and Waterways/EFH
Alternative 1 (includes existing ROW)	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 (includes existing ROW)	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.

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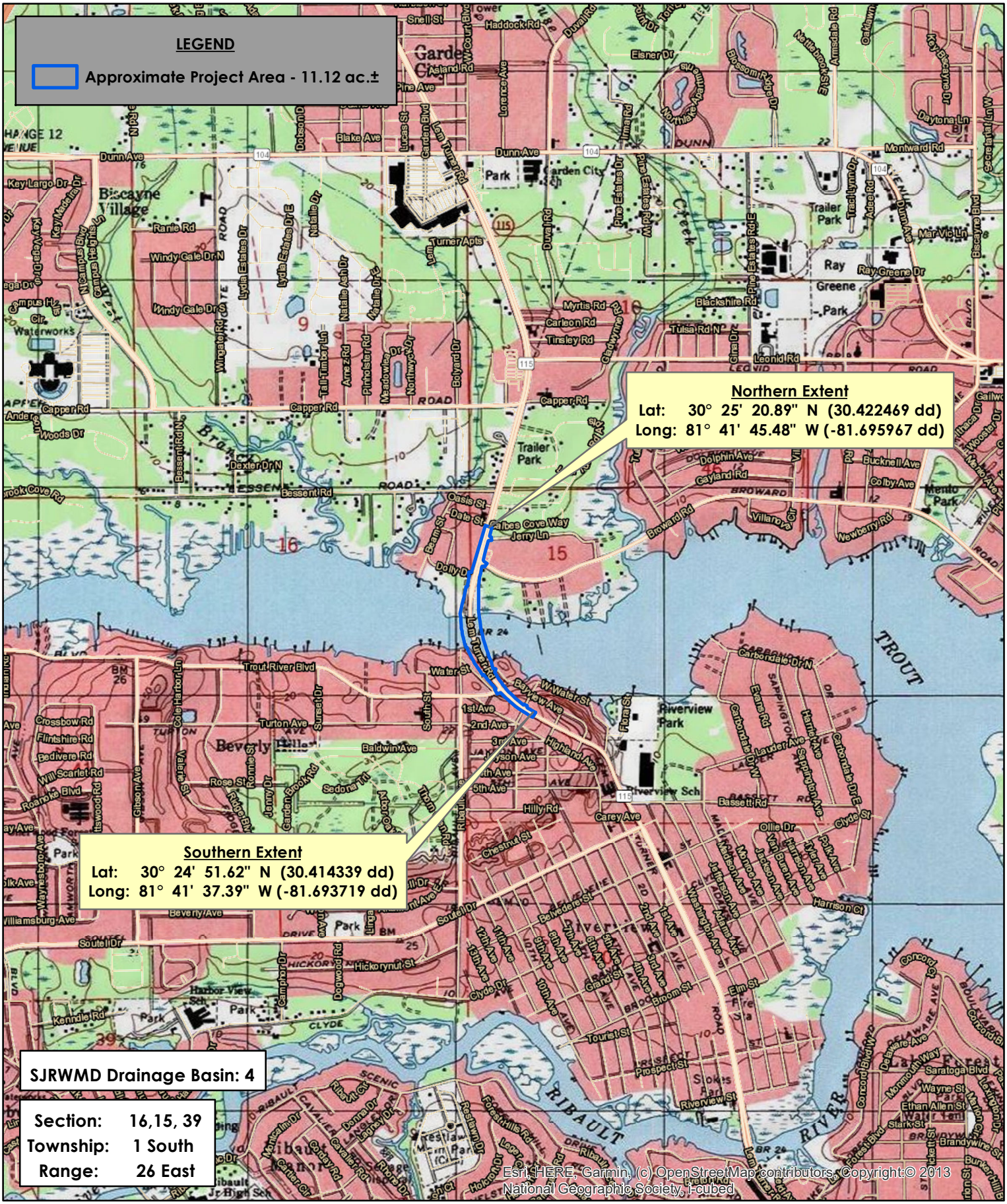
APPENDIX A
Project Exhibits

Exhibit 1 – USGS Topographic Quadrangle Map



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By:GLA

Lem Turner Road (SR 115) Over Trout River Bridge Replacement
FM 427427-2-22-01
USGS Topographic Quadrangle Map
Duval County, Florida

Project No.:	21092.01
Exhibit No.:	1
Date:	7-22-21
Rev. Date:	

Source: 7.5' USGS Trout River, FL Topographic Quadrangles; ArcGIS Online (USA Topo Maps)

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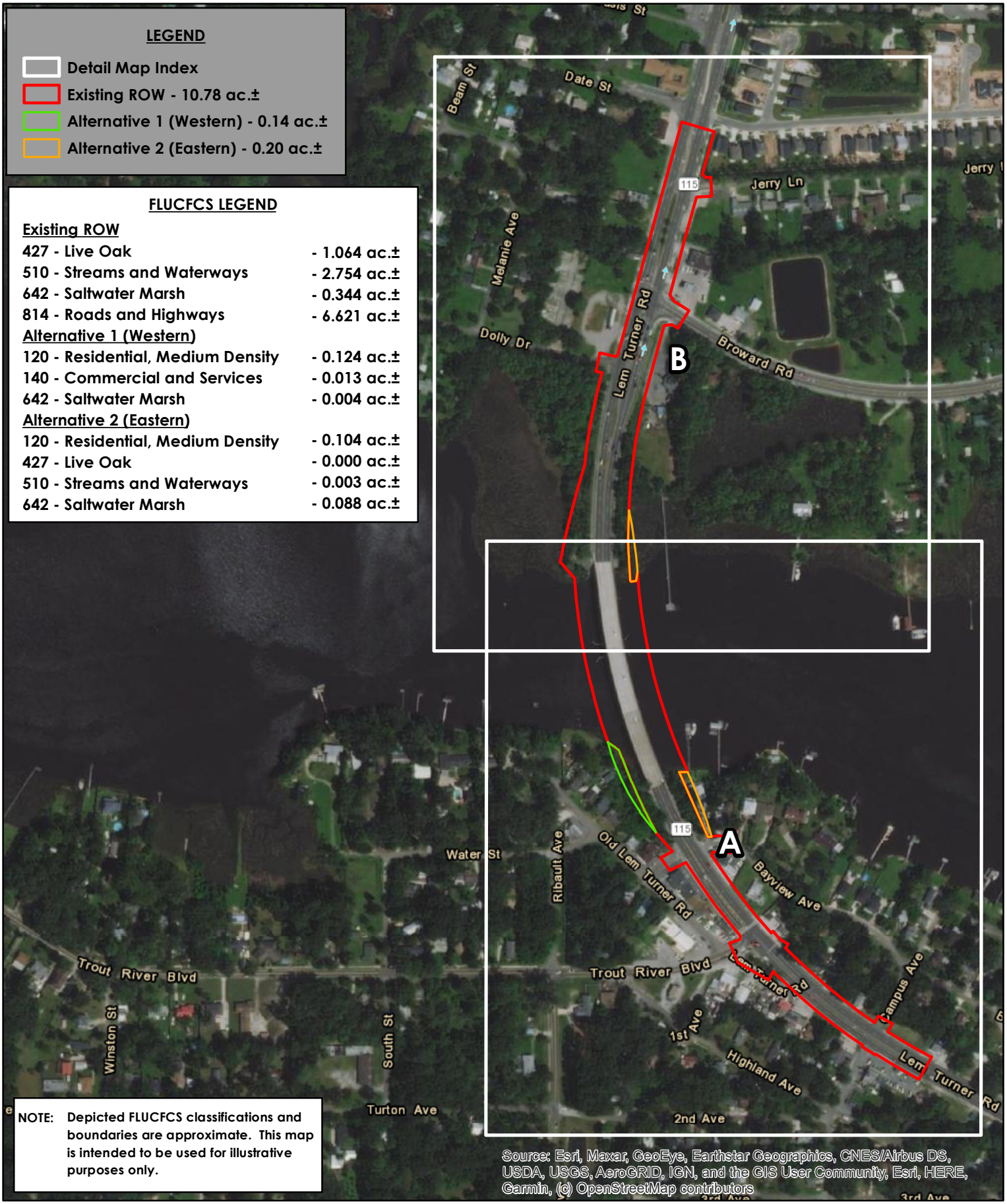
Exhibit 2 – Habitat Map



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By: JRN

Source: ArcGIS Online Imagery

Lem Turner Road (SR 115) Over Trout River Bridge Replacement
FM 427427-2-22-01
FLUCFCS Map Key

Project No.:	21092.01
Exhibit No.:	2 - Key
Date:	7-30-21
Rev. Date:	

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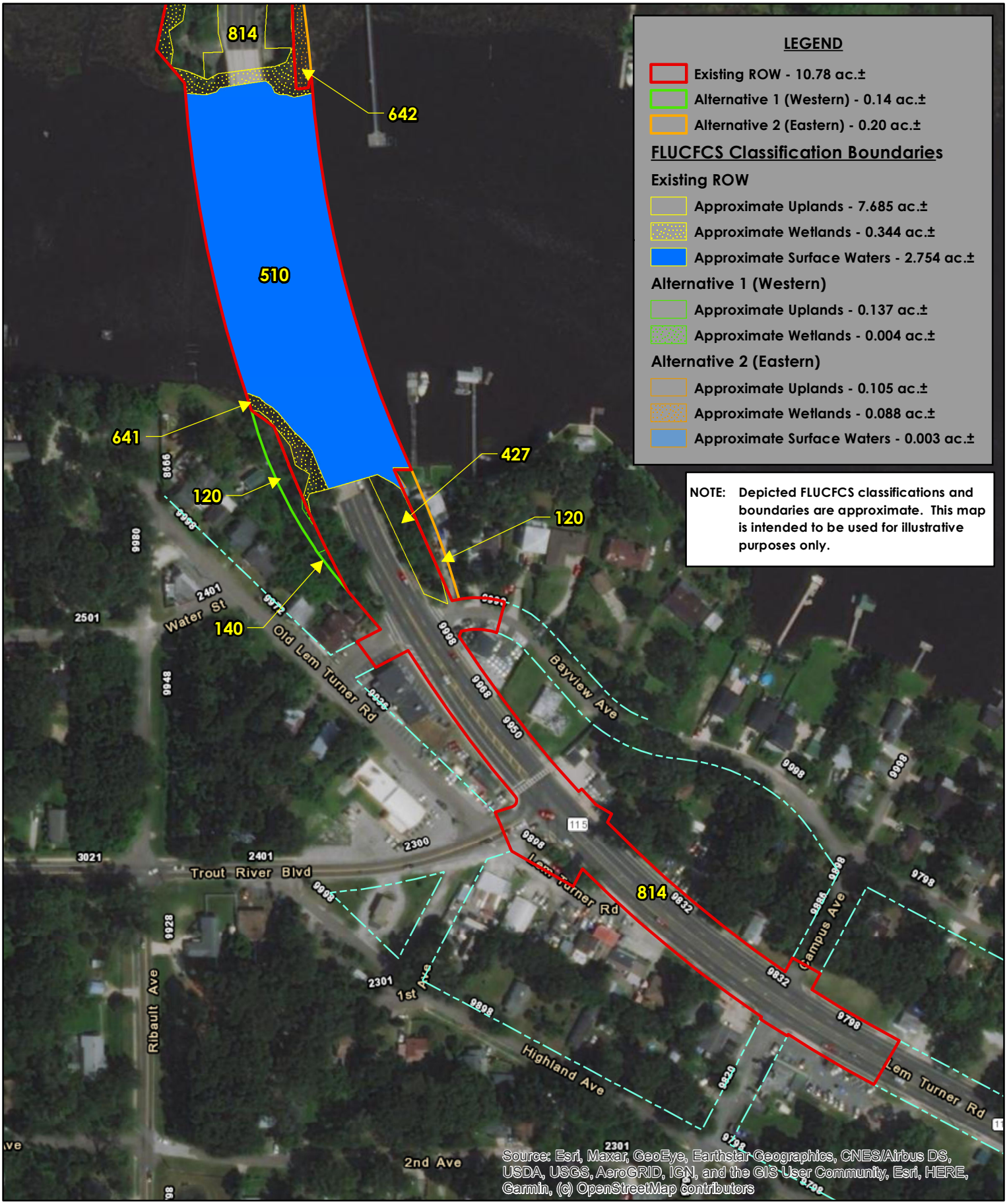

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Source: ArcGIS Online Imagery

Lem Turner Road (SR 115) Over Trout River Bridge Replacement
FM 427427-2-22-01
FLUCFCS Map - 1

Project No.:	21092.01
Exhibit No.:	2 - 1
Date:	7-30-21
Rev. Date:	

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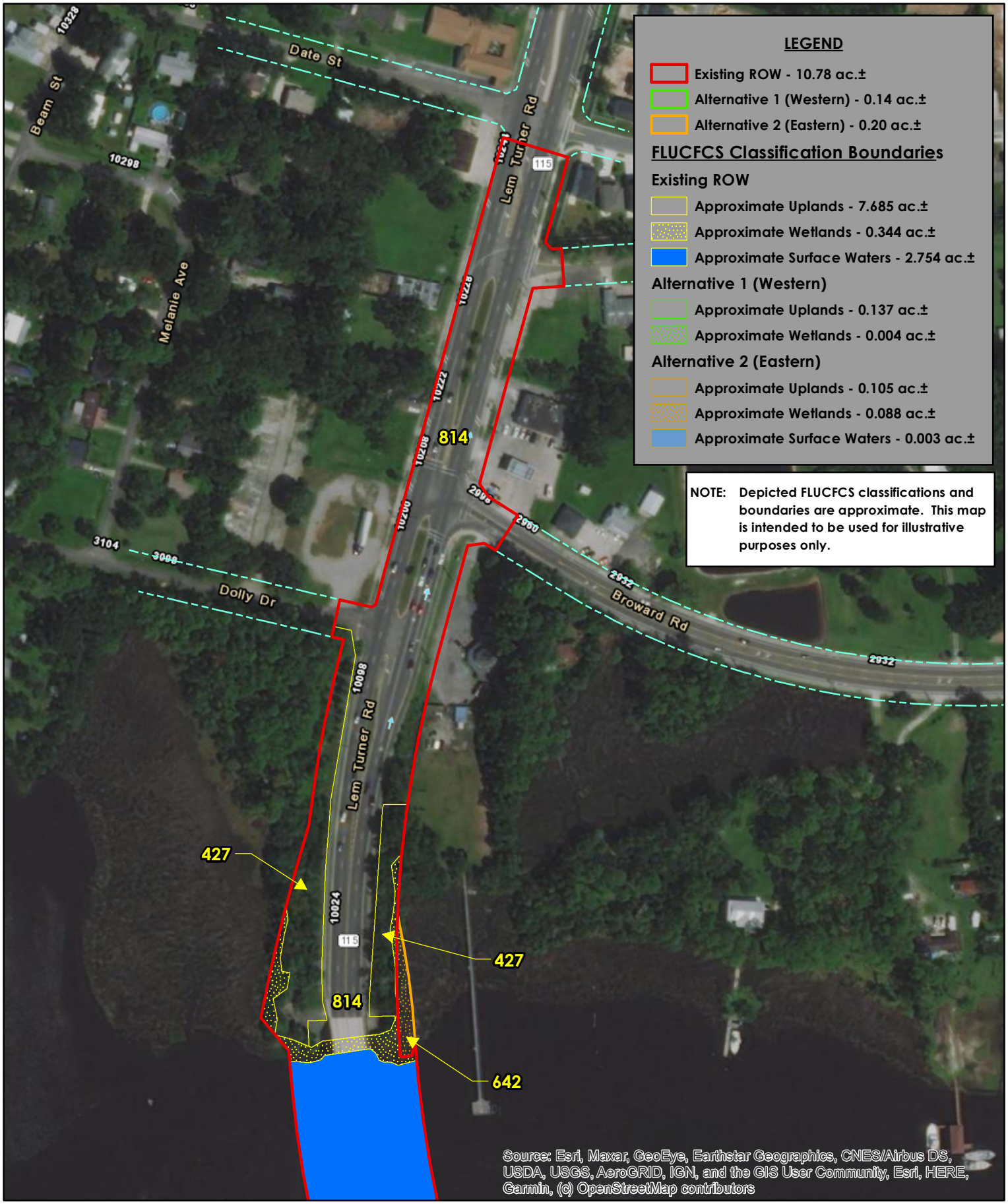

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By:GLA

Source: ArcGIS Online Imagery

Lem Turner Road (SR 115) Over Trout River Bridge Replacement
FM 427427-2-22-01
FLUCFCS Map - 2

Project No.:	21092.01
Exhibit No.:	2 - 2
Date:	7-30-21
Rev. Date:	

N W E S

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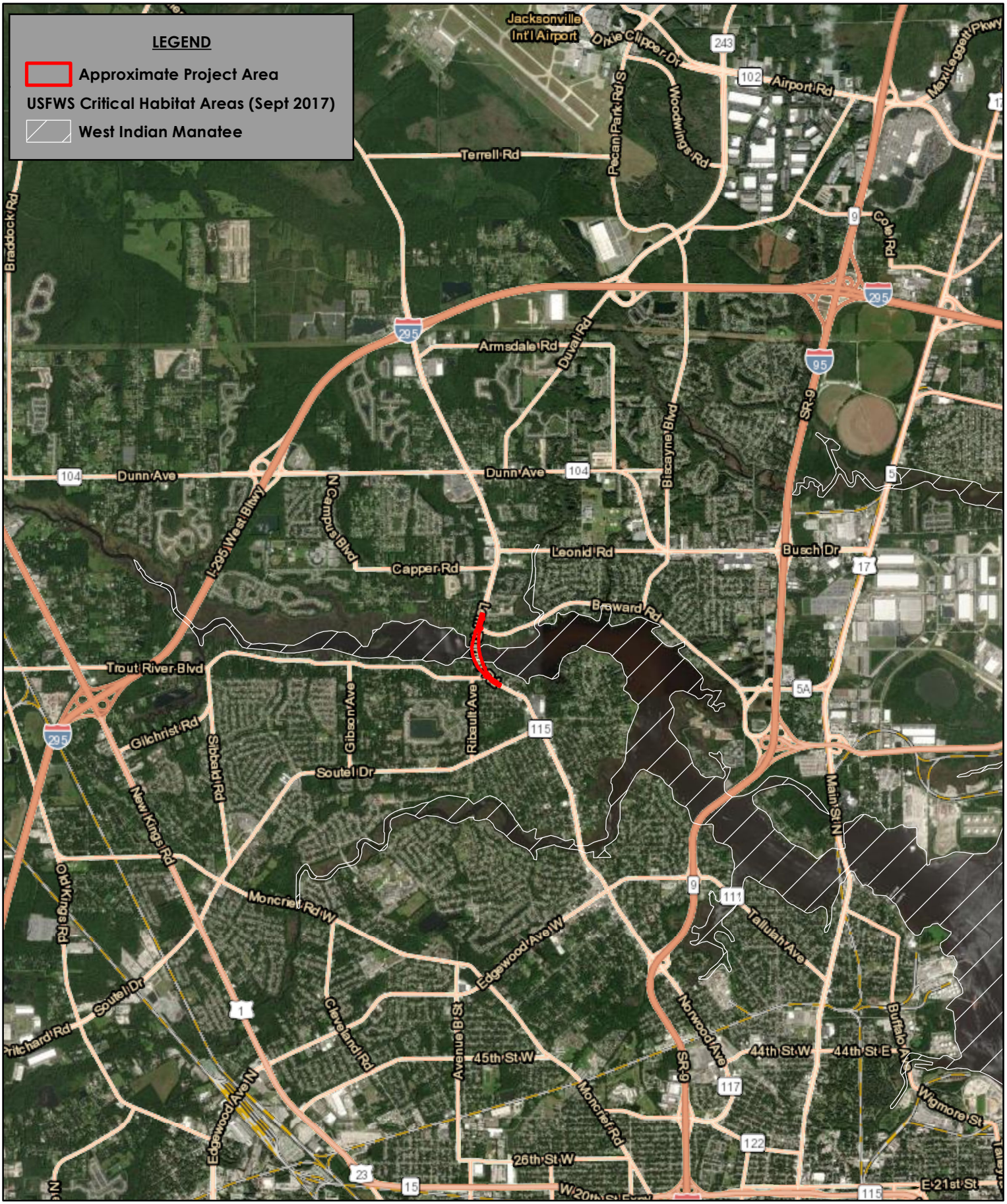
Exhibit 3 – Aquatic Preserves, National Wildlife Refuges, Outstanding Florida Waters, and Critical Habitats



By: GLA	Lem Turner Road (SR 115) Over Trout River Bridge Replacement FM 427427-2-22-01 Aquatic Preserves, National Wildlife Refuges, Outstanding FL Waters, and Critical Habitats	Project No.: 21092.01 Exhibit No.: 3 Date: 7-22-21 Rev. Date:

Source: ArcGIS Online Imagery; FDEP; USFWS

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Exhibit 4 – Conservation Easements/Public Lands Estimated to be Within or Adjacent to the Project Study Area

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By:GLA

Lem Turner Road (SR 115) Over Trout River
Bridge Replacement
FM 427427-2-22-01
Public Lands Map
Duval County, Florida

Project No.:	21092.01
Exhibit No.:	4
Date:	7-22-21
Rev. Date:	

N W E S

Source: SJRWMD (2019); FDEP (2019); ArcGIS Online (Imagery)

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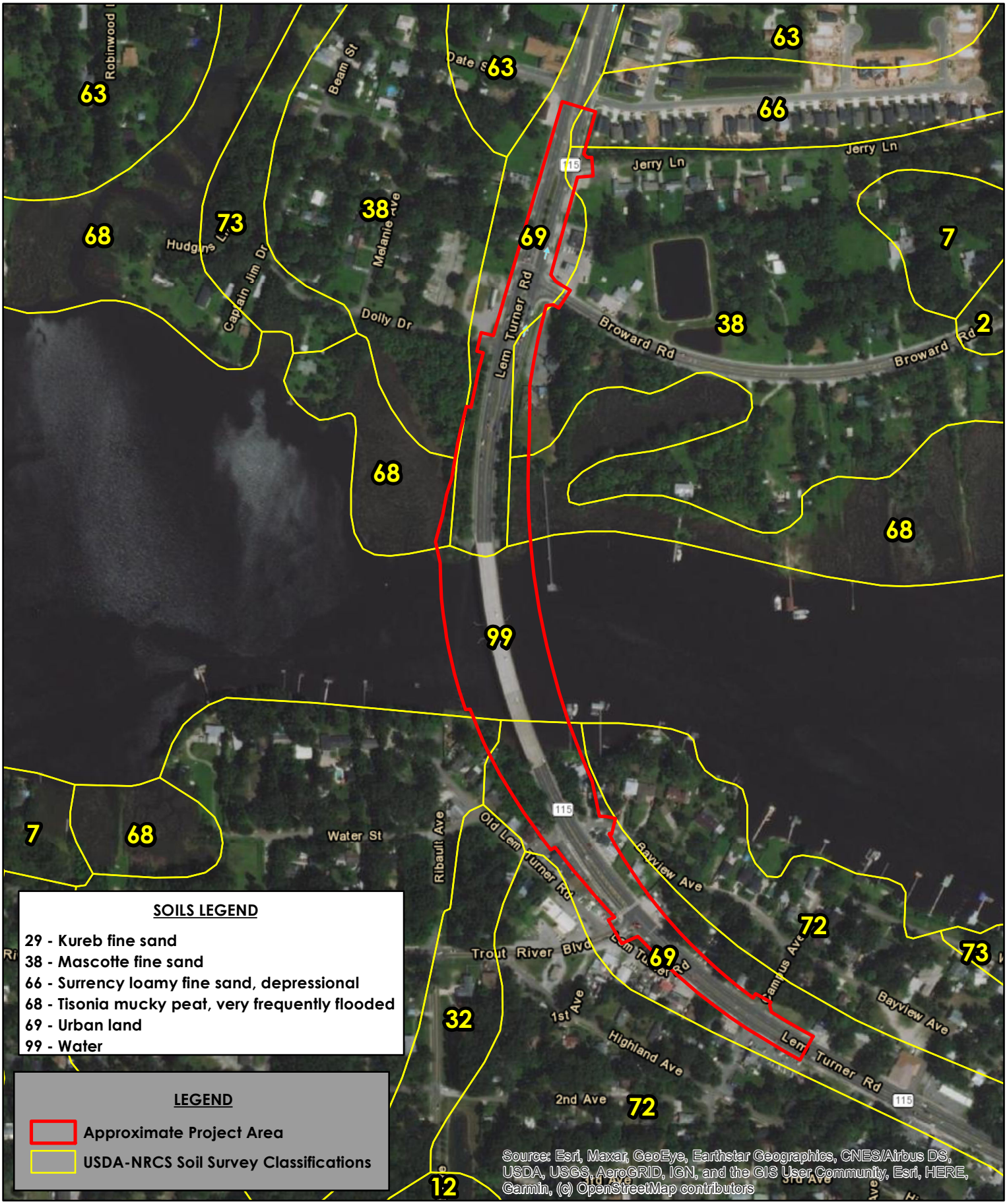
Exhibit 5 – Soils Maps



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By:GLA

Lem Turner Road (SR 115) Over Trout River
Bridge Replacement
FM 427427-2-22-01
Soils Map
Duval County, Florida

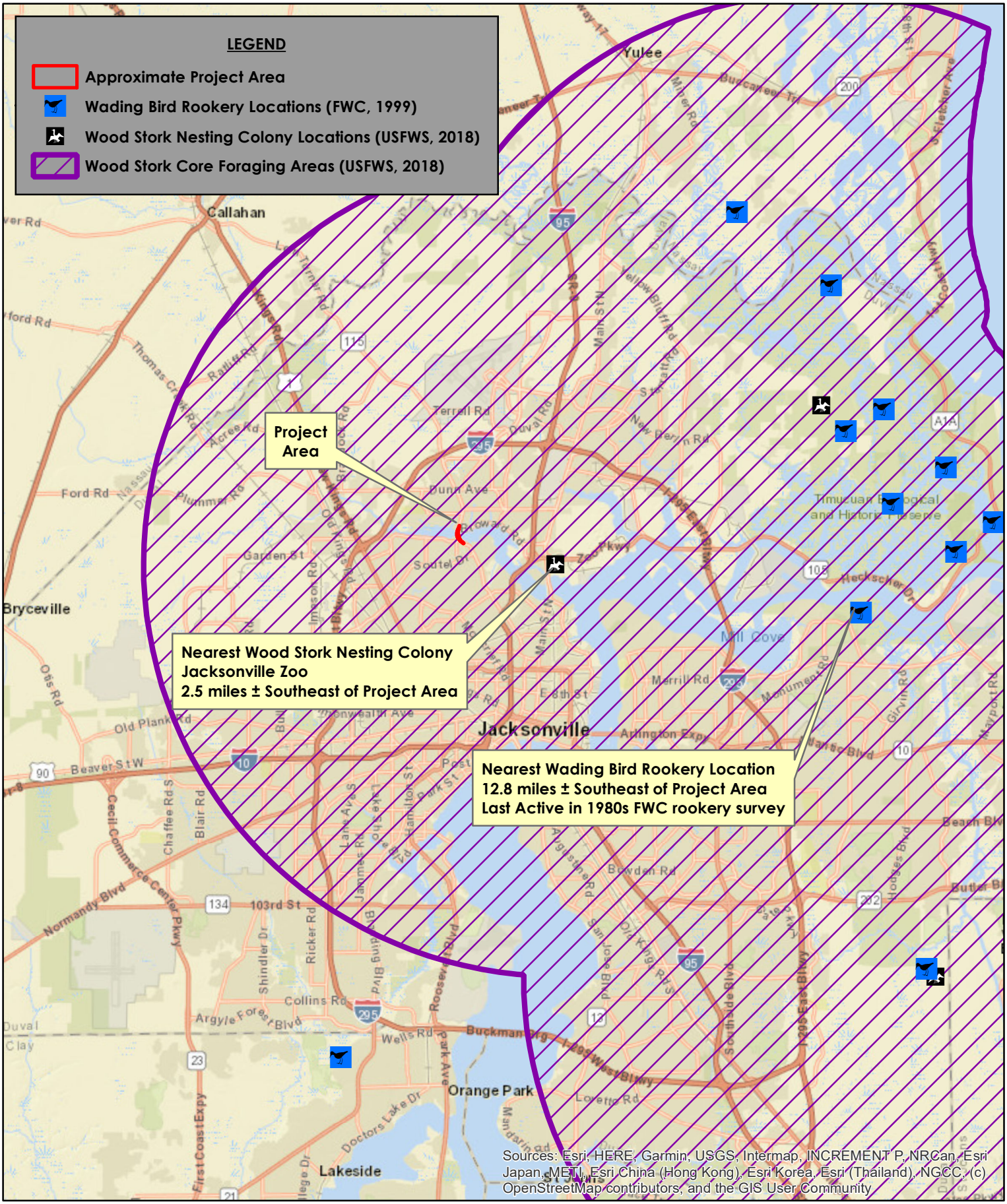
Project No.:	21092.01
Exhibit No.:	5
Date:	7-22-21
Rev. Date:	

N W E S

Source: ArcGIS Online Imagery, USDA-NRCS soil survey classifications (data obtained from NRCS)

X:\Projects\2021\21092.01 Trout River NRE\Graphics\mxd\21092_01_Soils_6-25-21.mxd

Exhibit 6 – Documented Occurrences of Wading Bird Rookeries and Wood Stork Occurrences / CFAs



0 4 Miles

By:

Lem Turner Road (SR 115) Over Trout River Bridge Replacement
FM 427427-2-22-01
Documented Occurrences of Wading Bird Rookeries and Wood Stork Nesting Colonies/CFA's

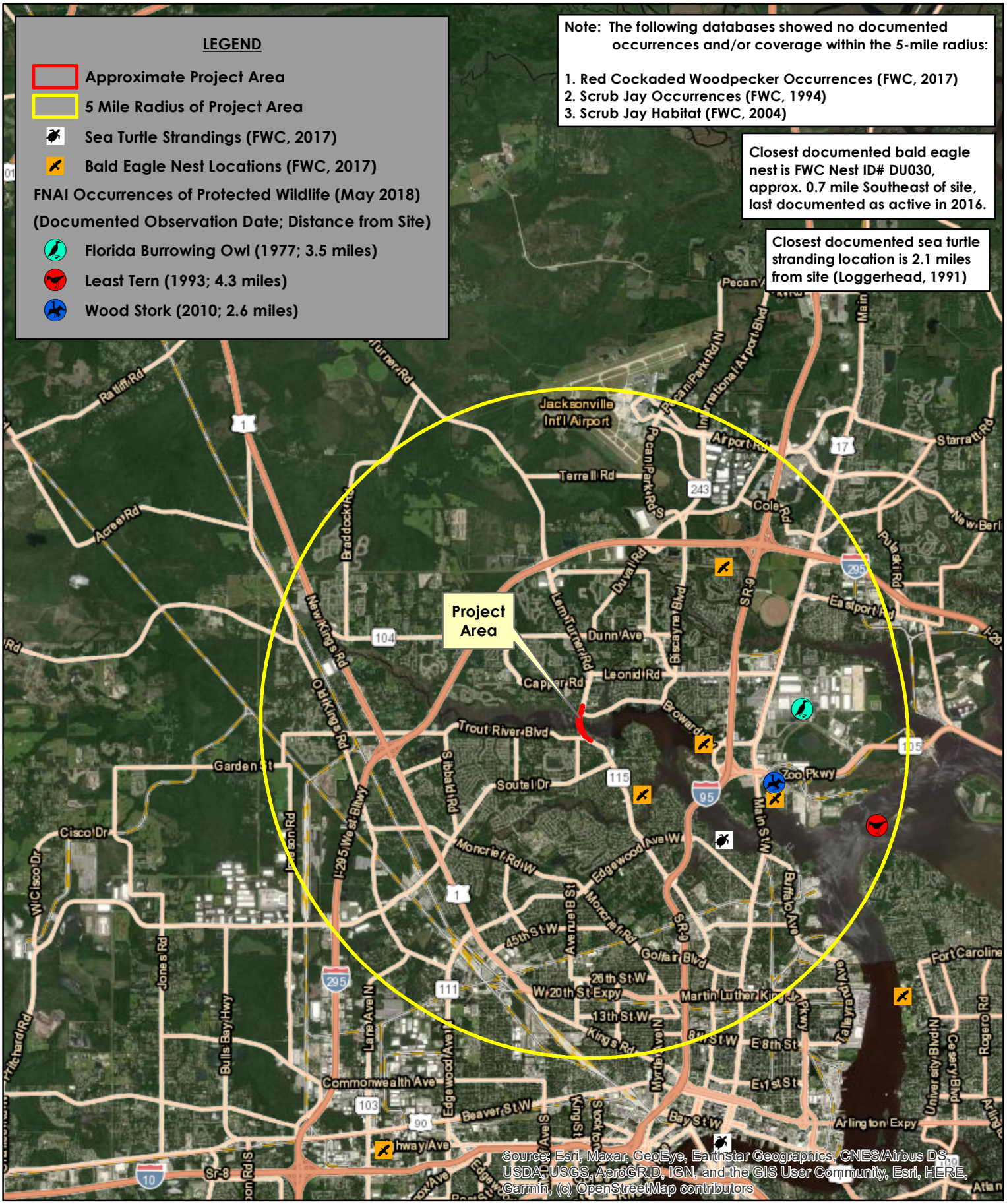
Project No.:	21092.01
Exhibit No.:	6
Date:	7-22-21
Rev. Date:	

N W E S

Source: USFWS, FDEP, FWC, FNAI, USGS, ArcGIS Online Data (World Street Map)

X:\Projects\2021\21092.01 Trout River NRE\Graphics\mxd\21092_01_13mile_wildlife_6-2-21.mxd

Exhibit 7A – Documented Occurrences of Protected Wildlife Within 5 Miles



0 2 Miles

By:

Lem Turner Road (SR 115) Over Trout River Bridge Replacement
FM 427427-2-22-01
Documented Occurrences of Terrestrial Protected Wildlife Within 5 Miles

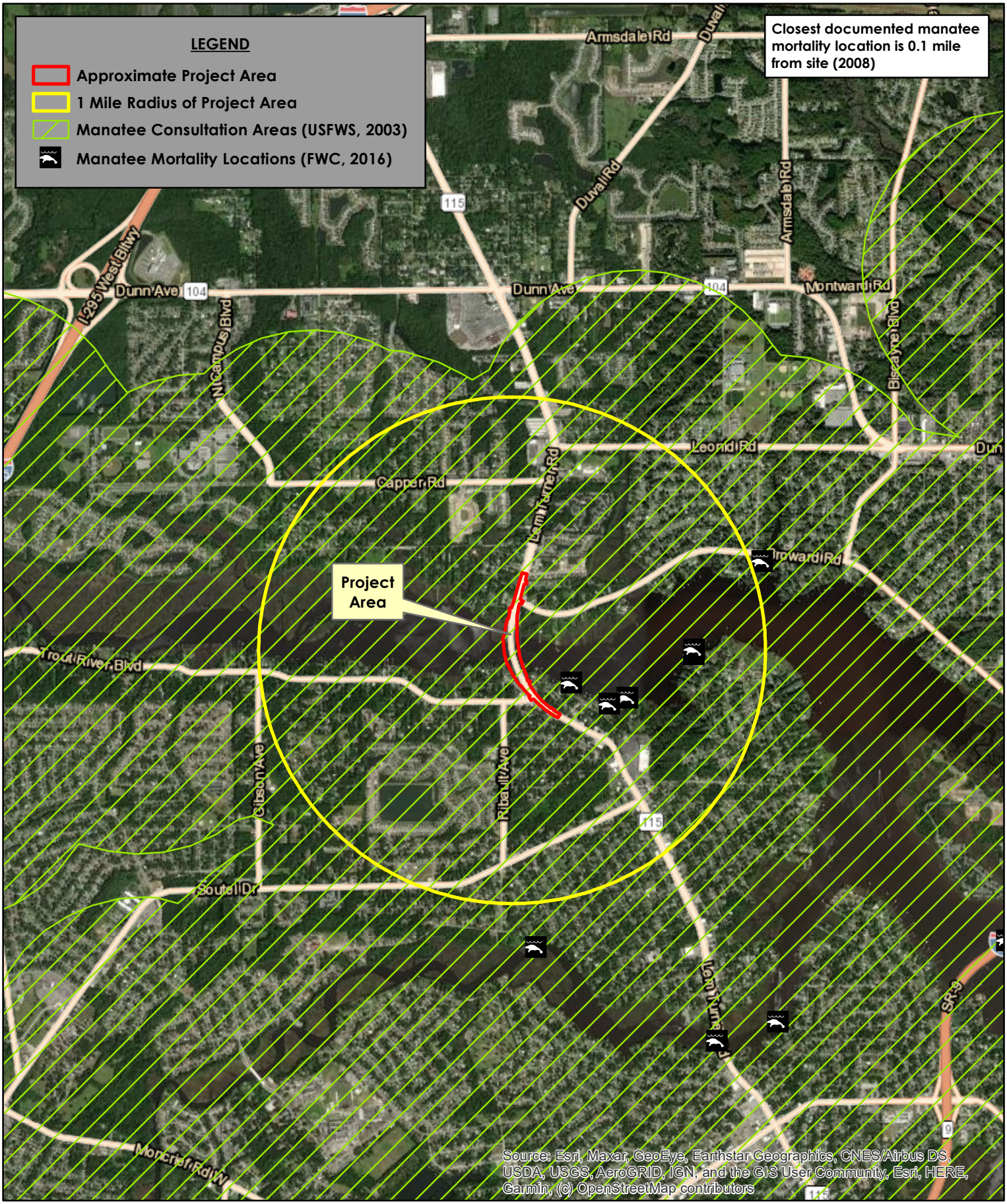
Project No.:	21092.01
Exhibit No.:	7A
Date:	7-22-21
Rev. Date:	

N W E S

Source: USFWS, FDEP, FWC, FNAI, USGS, ArcGIS Online Imagery

X:\Projects\2021\21092.01 Trout River NRE\Graphics\mxd\21092_01_5mile_wildlife_6-2-21.mxd

Exhibit 7B - Documented Occurrences of Protected Wildlife Within 1 Mile



0 0.5 Miles

By:GLA

Lem Turner Road (SR 115) Over Trout River Bridge Replacement
FM 427427-2-22-01
Documented Occurrences of Protected Wildlife Within 1 Mile

Project No.:	21092.01
Exhibit No.:	7B
Date:	7-22-21
Rev. Date:	

N W E S

Source: USFWS, FDEP, FWC, FNAI, USGS, ArcGIS Online Imagery

X:\Projects\2021\21092.01 Trout River NRE\Graphics\mxd\21092_01_1mile_wildlife_6-2-21.mxd

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

Note that this table includes all federally-listed and candidate species and state-listed species that may occur in the county. For a list of all such species that may occur on the subject site, see the text of the report.

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

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

Federally-listed and candidate species and state-listed species – Duval County.				
Scientific Name	**Common Name**	**Federal Status**	**State Status**	**Preferred Habitat**
Schoenolirion croceum	Yellow Sunnybell	N	SE	Wet pine flatwoods and bogs.
Schwalbea americana	Chaff-seed	E	FE	Fire-maintained longleaf pine savannas, sandhills, flatwoods, and ecotones between sandhills and ponds. Semi-parasitic on roots of *Ilex glabra*, *Gaylussacia*, *Hypericum*, etc.
Spiranthes brevilabris	Texas Ladies-Tresses	N	SE	Wet prairies and flatwoods.
Spiranthes longilabris	Longlip Ladies-tresses	N	ST	Wet prairies and flatwoods.
Verbesina heterophylla	Variable-leaf Crownbeard	N	SE	Mesic flatwoods and dry woods.
Zephyranthes atamasca var. *atamasca*	Rainlily	N	ST	Swamps, floodplains, wet prairies, and wet roadsides.
Zephyranthes atamasca var. *treatiae*	Treat's Rainlily	N	ST	Swamps, floodplains, wet prairies and wet roadsides.
Insects				
Danaus plexippus	Monarch Butterfly	C	N	Breeding females lay eggs on *Asclepias* 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.
Crustaceans				
*Procambarus pictus***	Black Creek Crayfish	N	ST	Small high quality tannic streams.
Fish				
*Acipenser brevirostrum***	Shortnose Sturgeon	E	FE	Large rivers and coastal waterways. Formerly bred in the Ocklawaha River before the Rodman Dam was constructed.
*Acipenser oxyrinchus oxyrinchus**	Atlantic Sturgeon	E	FE	Atlantic Ocean and portions of large river systems.
Pristis pectinata	Smalltooth Sawfish	E	FE	Open sea, estuaries, bays, and river mouths.
Amphibians				
Ambystoma cingulatum	Frosted Flatwoods Salamander	T	FT	Flatwoods with wiregrass and interspersed wetlands; breeds in small ponds and seasonally flooded wetlands.
Reptiles				
Caretta caretta	Loggerhead Sea Turtle	T	FT	Open sea, bays, lagoons, creeks; beaches for nesting.
Chelonia mydas	Green Sea Turtle	T	FT	Open sea, inshore bays, tidal creeks; beaches for nesting.
*Dermochelys coriacea**	Leatherback Sea Turtle	E	FE	Open sea; beaches for nesting.
*Drymarchon corais couperi**	Eastern Indigo Snake	T	FT	Linked to xeric habitats and gopher tortoise burrows, but also uses other natural habitats such as mesic uplands, swamps, and freshwater marshes as foraging habitat.

Federally-listed and candidate species and state-listed species – Duval County.				
Scientific Name	**Common Name**	**Federal Status**	**State Status**	**Preferred Habitat**
*Eretmochelys imbricata**	Hawksbill Sea Turtle	E	FE	Typically inhabits inshore reefs and hardbottom areas where they forage primarily on encrusted sponges. Utilizes beaches for nesting.
*Gopherus polyphemus**	Gopher Tortoise	C	ST	Sandhills, scrub, dry flatwoods, dry ruderal areas.
*Lepidochelys kempii**	Kemp's Ridley Sea Turtle	E	FE	Open sea, bays, lagoons, inlets; beaches for nesting.
*Pituophis melanoleucus mugitus***	Florida Pine Snake	N	ST	Sandhill, sand pine scrub and scrubby flatwoods.
Birds				
*Aphelocoma coerulescens**	Florida scrub-jay	T	FT	Fire-maintained scrub with scrub oaks and open areas.
*Athene cunicularia floridana***	Florida Burrowing Owl	N	ST	Open prairies with little vegetation.
Calidris canutus rufa	Red Knot	T	FT	Migratory in large flocks; requires beaches and shallow coastal waters for stopover feeding.
*Charadrius melodus**	Piping Plover	T/CH	FT	Beaches, sandflats, and mudflats.
*Cistothorus palustris griseus***	Worthington's Marsh Wren	N	ST	Tidal marshes dominated by cordgrass.
*Egretta caerulea***	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.
*Egretta tricolor***	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.
*Falco sparverius paulus***	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.
Haematopus palliatus	American Oystercatcher	N	ST	Occurs in beaches, sandbars, spoil islands, shall rakes, salt march, and oyster reefs.
Laterallus jamaicensis jamaicensis	Eastern Black Rail	T	FT	Primarily occurs in tidal saltmarsh, but can also occur in freshwater wetlands, coastal prairies, and grassy fields.
Leuconotopicus borealis (= Dryobates borealis and *Picoides borealis)***	Red-cockaded Woodpecker	E	FE	High quality fire-maintained upland pine forest with mature pines with heart rot for nesting.
Mycteria americana	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.
*Platalea ajaja***	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.
*Rynchops niger***	Black Skimmer	N	ST	Estuaries, beaches, and sandbars.
*Sternula antillarum***	Least Tern	N	ST	Coastal areas, including estuaries and bays.

Federally-listed and candidate species and state-listed species – Duval County.				
Scientific Name	**Common Name**	**Federal Status**	**State Status**	**Preferred Habitat**
Mammals				
Eubalaena glacialis	North Atlantic Right Whale	E	FE	Open ocean. Gives birth near the Atlantic shoreline between December and March.
*Trichechus manatus***	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.

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: species listed by the state that are likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

FE = Federally endangered: species federally listed as being in danger of extinction throughout all or a significant portion of its range.

FT = Federally threatened: species federally listed as likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

****** = FWC has developed a draft or final Permitting Guidelines document for this species. Permitting guidelines can be found at: https://myfwc.com/wildlifehabitats/wildlife/species-guidelines/

APPENDIX C
UMAM Summary Sheets

site: **Lem Turner Road (SR 115) Over Trout River Bridge Replacement** Date: **8.6.2021**

Alt 1 Impacts	Habitat Type	Location and Landscape Support before	Location and Landscape Support after	Water Environment before	Water Environment after	Community Structure before	Community Structure after	Acres	Functional Loss	Rounded Functional Loss
ROW Wet	642	7	0	9	0	9	0	0.344	0.2867	0.29
ROW SW	510	7	0	9	0	0	0	0.066	0.0528	0.06
Alt 1 Wet	642	7	0	9	0	9	0	0.004	0.0033	0.01
									0.0000	
									0.0000	
									0.0000	
									0.0000	
									0.0000	
									0.0000	

Total Impact Acres **0.41**

Each line is rounded up to the next hundreth.

Total Functional Loss	Total Rounded Functional Loss	Total Functional Gain Units
0.343	**0.36**	**0.000**

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

site: **Lem Turner Road (SR 115) Over Trout River Bridge Replacement** Date: **8.6.2021**

Alt 2 Impacts	Habitat Type	Location and Landscape Support before	Location and Landscape Support after	Water Environment before	Water Environment after	Community Structure before	Community Structure after	Acres	Functional Loss	Rounded Functional Loss
ROW Wet	642	7	0	9	0	9	0	0.344	0.2867	0.29
ROW SW	510	7	0	9	0	0	0	0.066	0.0528	0.06
Alt 2 Wet	642	7	0	9	0	9	0	0.088	0.0733	0.08
Alt 2 SW	510	7	0	9	0	0	0	0.003	0.0016	0.01
									0.0000	
									0.0000	
									0.0000	
									0.0000	
									0.0000	

Total Impact Acres: **0.50**

Each line is rounded up to the next hundreth.

Total Functional Loss	Total Rounded Functional Loss	Total Functional Gain Units
0.414	**0.44**	**0.000**

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