Natural Resources Evaluation Report

SR-9/I-95 from South of SW 10th Street (MP 22.00)
To North of Hillsboro Boulevard (MP 25.10)
Project Development & Environment Study
Broward County, Florida

Financial Management Number: 436964-1-22-01
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The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried out by FDOT pursuant to 23 U.S.C. § 327 and a Memorandum of Understanding dated December 14, 2016, and executed by FHWA and FDOT.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

EXECUTIVE SUMMARY

The Florida Department of Transportation (FDOT) District Four is conducting a Project Development and Environment (PD&E) Study, in accordance with the National Environmental Policy Act (NEPA), to assess potential operational and safety improvements along 3.1 miles of Interstate 95 (I-95), from just south of the NE 48th Street [Mile Post (MP) 22.0] to just north of the Hillsboro Boulevard interchange (MP 25.10), in Broward County, Florida.

This Natural Resources Evaluation (NRE) was prepared to document the natural resources analyses performed to support decisions related to the evaluation of the project alternatives and to summarize potential impacts to wetlands, federal and state protected species, and protected habitats. Measures considered to avoid, minimize, and mitigate for potential impacts are also discussed. This report provides documentation of these processes to supplement the Environmental Document.

The project alternatives were evaluated for potential occurrences of federally listed and state-listed animal and plant species in accordance with Section 7 of the Endangered Species Act (ESA) of 1973, as amended; the Fish and Wildlife Conservation Act; the Migratory Bird Treaty Act; Part 2, Chapter 16 of the FDOT PD&E Manual; and Chapters 5B-40 and 68A-27 Florida Administrative Code (F.A.C.). Based on this evaluation, a total of 16 federally listed animal species (plus 1 candidate species), 4 federally listed plant species, 8 state-listed animal species, and 15 state-listed plant species were identified as potentially occurring within the limits of the viable Build Alternatives. Additionally, while not state or federally listed under the ESA, the bald eagle (*Haliaeetus leucocephalus*), the gopher frog (*Lithobates capito*), limpkin (*Aramus guarauna*), snowy egret (*Egretta thula*), and white ibis (*Eudocimus albus*) were included in the protected species analysis due to the regulatory protections associated with these species. **Table ES-1** provides a summary of the federally listed and state-listed animal and plant species with potential to occur within the limits of the viable Build Alternatives, along with their corresponding effect determinations.

The project study area was also evaluated for the presence of federally designated Critical Habitat as defined by Congress in 50 Code of Federal Regulations (C.F.R.) 17. Based on this evaluation, it was determined that no federally designated Critical Habitat is present within any of the alternatives.

Table ES - 1: Summary of Listed Species and Effect Determinations

	Scientific Name	Common Name	Effect Determination	Status	
				Federal	State
Federally Listed Wildlife Species	*Aphelocoma coerulescens*	Florida scrub-jay	No Effect	T	FT
	Calidris canutus rufa	Red knot	No Effect	T	FT
	Charadrius melodus	Piping plover	No Effect	T	FT
	Rostrhamus sociabilis plumbeus	Everglade snail kite	No Effect	E	FE
	Picoides borealis	Red-cockaded woodpecker	No Effect	E	FE
	Grus americana	Whooping Crane	May Affect, Not Likely to Adversely Affect	E	FE
	Mycteria americana	Wood stork	May Affect, Not Likely to Adversely Affect	T	FT
	Crocodylus acutus	American crocodile	May Affect, Not Likely to Adversely Affect	T	FT
	Drymarchon corais couperi	Eastern indigo snake	May Affect, Not Likely to Adversely Affect	T	FT
	Peromyscus polionotus Niveiventris	Southeastern beach mouse	No Effect	T	FT
	Puma concolor	Puma	No Effect	T(S/A)	FT(S/A)
	Puma concolor coryi	Florida panther	No Effect	E	FE
	Trichechus manatus latirostris	West Indian manatee	No Effect	T	FT
	Strymon acis bartrami	Bartram's Hairstreak Butterfly	No Effect	E	FE
	Anaea troglodyta floridalis	Florida leafwing butterfly	No Effect	E	FE
	Cyclargusthomasi bethunebakeri	Miami blue butterfly	No Effect	E	FE

Federally Listed Plant Species	*Cucurbita okeechobeensis* ssp. *Okeechobeensis*	Okeechobee gourd	No Effect	E	FE
	Dalea carthagenesis var. *floridana*	Florida prairie-clover	No Effect	E	FE
	Jacquemontia reclinata	Beach jacquemontia	No Effect	E	FE
	Polygala smallii	Tiny polygala	No Effect	E	FE
State-Listed Wildlife Species	*Athene cunicularia floridana*	Florida burrowing owl	No Effect Anticipated	NL	ST
	Egretta caerulea	Little blue heron	No Effect Anticipated	NL	ST
	Egretta tricolor	Tricolored heron	No Adverse Effect Anticipated	NL	ST
	Falco sparverius paulus	Southeastern American kestrel	No Effect Anticipated	NL	ST
	Gopherus polyphemus	Gopher tortoise	No Effect Anticipated	C(1)	ST
	Grus canadensis pratensis	Florida sandhill crane	No Effect Anticipated	NL	ST
	Platalea ajaja	Roseate spoonbill	No Effect Anticipated	NL	ST
	Sternula antillarum	Least tern	No Effect Anticipated	NL	ST
	Haliaeetus leucocephalus	Bald eagle	No Effect Anticipated	NL(2)	NL
	Lithobates capito	Gopher frog	No Effect Anticipated	NL(3)	NL
	Aramus guarauna	Limpkin	No Effect Anticipated	NL(3)	NL
	Egretta thula	Snowy egret	No Effect Anticipated	NL(3)	NL
	Eudocimus albus	White ibis	No Effect Anticipated	NL(3)	NL
State-Listed Plant Species	*Acrostichum aureum*	Golden leather fern	No Effect Anticipated	NL	ST
	Aeschynomene pratensis var. *pratensis*	Meadow jointvetch	No Effect Anticipated	NL	SE

	Asplenium dentatum	American toothed spleenwort	No Effect Anticipated	NL	SE
	Asplenium serratum	American bird's nest fern	No Effect Anticipated	NL	SE
	Euphorbia (=*Chamaesyce*) *cumulicola*	Sand-dune spurge	No Effect Anticipated	NL	SE
	Conradina grandiflora	Large-flowered rosemary	No Effect Anticipated	NL	ST
	Ctenitis sloanei	Florida tree fern	No Effect Anticipated	NL	SE
	Epidendrum nocturnum	Night scented orchid	No Effect Anticipated	NL	SE
	Heliotropium gnaphalodes	Sea rosemary	No Effect Anticipated	NL	SE
	Lechea cernua	Nodding pinweed	No Effect Anticipated	NL	ST
	Okenia hypogaea	Burrowing four-o'clock	No Effect Anticipated	NL	SE
	Ophioglossum palmatum	Hand fern	No Effect Anticipated	NL	SE
	Tillandsia flexuosa	Banded wild-pine	No Effect Anticipated	NL	ST
	Trichostigma octandrum	Hoop vine	No Effect Anticipated	NL	SE
	Zanthoxylum coriaceum	Biscayne prickly ash	No Effect Anticipated	NL	SE

F = Federally Listed / S = State Listed / E = Endangered / T = Threatened / T(S/A) = Threatened due to similar appearance / NL =Not Listed

(1) The gopher tortoise is currently a candidate species for federal protection under the ESA.

(2) The bald eagle is neither state nor federally listed; however, this species is federally protected by the Bald and Golden Eagle Act and the Migratory Bird Treaty Act. The bald eagle is also managed in Florida by the FWC's bald eagle rule (FAC 68A- 16.002).

(3) The gopher frog, limpkin, snowy egret, and white ibis are no longer listed in Florida as of January 11, 2017. However, these species are part of the FWC Florida's Imperiled Species Management Plan, as amended (December 2018).

In accordance with Presidential Executive Order 11990 entitled "Protection of Wetlands", United States Department of Transportation Order 5660.1A, "Preservation of the Nation's Wetlands" and Part 2, Chapter 9 of the FDOT PD&E Manual, the project alternatives were assessed for the presence of

wetlands that may be impacted by proposed project activities. Based on this evaluation, a total of twelve (12) individual surface water features were identified within the project study area. These surface water habitats were classified using Florida Land Use, Cover, and Forms Classification System (FLUCFCS) (FDOT, 1999) and the United States Fish and Wildlife Service's (FWS) Classification of Wetlands and Deepwater Habitats of the United States (Cowardin, et al., 1979). **Table ES-2** lists the individual surface water features present within the project study area, by FLUCFCS and FWS classification, along with their corresponding acreages. The viable Build Alternatives will result in identical acreage of impacts to state and federally jurisdictional surface waters. The proposed surface water impacts will occur to excavated stormwater management facilities associated with I-95 in which water quality/quantity impacts will be addressed through improvements to the existing stormwater management system; therefore, additional compensatory mitigation is not warranted.

Prior coordination with the National Marine Fisheries Service (NMFS) during the Efficient Transportation Decision Making (ETDM) Process indicated that the proposed project does not appear to directly impact any NMFS trust resources [listed/protected marine species or Essential Fish Habitat (EFH)]. Therefore, no EFH discussion is included in this NRE.

Table ES - 2: Summary of Proposed Surface Water Impacts

SW ID	FLUCFCS Description	FLUCFCS Code	Acres of Impact	Total Acres in Study Area
SW-1	Reservoirs <10 acres	534	3.90	5.46
SW-2	Reservoirs <10 acres	534	0.22	0.22
SW-3	Reservoirs <10 acres	534	1.19	6.06
SW-4	Reservoirs <10 acres	534	0.00	1.47
SW-5	Reservoirs <10 acres	534	0.00	0.29
SW-6	Streams and Waterways	510	0.06	0.66
SW-7	Reservoirs <10 acres	534	0.12	2.69
SW-8	Reservoirs <10 acres	534	0.07	1.97
SW-9	Streams and Waterways	510	0.01	0.57
SW-10	Streams and Waterways	510	0.00	0.27
SW-11	Reservoirs <10 acres	534	0.04	0.50
SW-12	Streams and Waterways	510	0.27	0.37
Total			**5.88**	**20.53**

1.0 INTRODUCTION

The Florida Department of Transportation (FDOT) District Four conducted a Project Development and Environment (PD&E) Study, in accordance with the National Environmental Policy Act (NEPA), to assess potential operational and safety improvements along 3.1 miles of Interstate 95 (I-95), from south of NE 48th [Mile Post (MP) 22.0] to north of the Hillsboro Boulevard interchange (MP 25.10), in Broward County, Florida.

The project extends along I-95 from just south of NE 48th Street to just north of Hillsboro Boulevard and along both SW 10th Street from just west of Military Trail east to SW Natura Boulevard and along Hillsboro Boulevard from Goolsby Boulevard east to SW Natura Boulevard. The entire project lies within the City of Deerfield Beach. I-95 is part of the Strategic Intermodal System and the National Highway System which is Florida's high priority network of transportation facilities important to the state's economy, mobility and defense.

The study evaluated alternatives for improvements to the I-95 partial cloverleaf interchanges at SW 10th Street and Hillsboro Boulevard and along I-95 from just south of NE 48th Street to just north of the Hillsboro Boulevard interchange. SW 10th Street provides a direct connection between I-95 and the Sawgrass Expressway. The study also evaluated improvements along both SW 10th Street and Hillsboro Boulevard near I-95.

Alternatives were also evaluated to modify the existing merge and diverge ramp areas at the SW 10th Street and Hillsboro Boulevard interchanges. Replacement of the existing SW 10th Street bridge over I-95 and a grade separation at the existing at-grade railroad crossing at Hillsboro Boulevard were also evaluated. The project study area is shown in **Figure 1-1**.

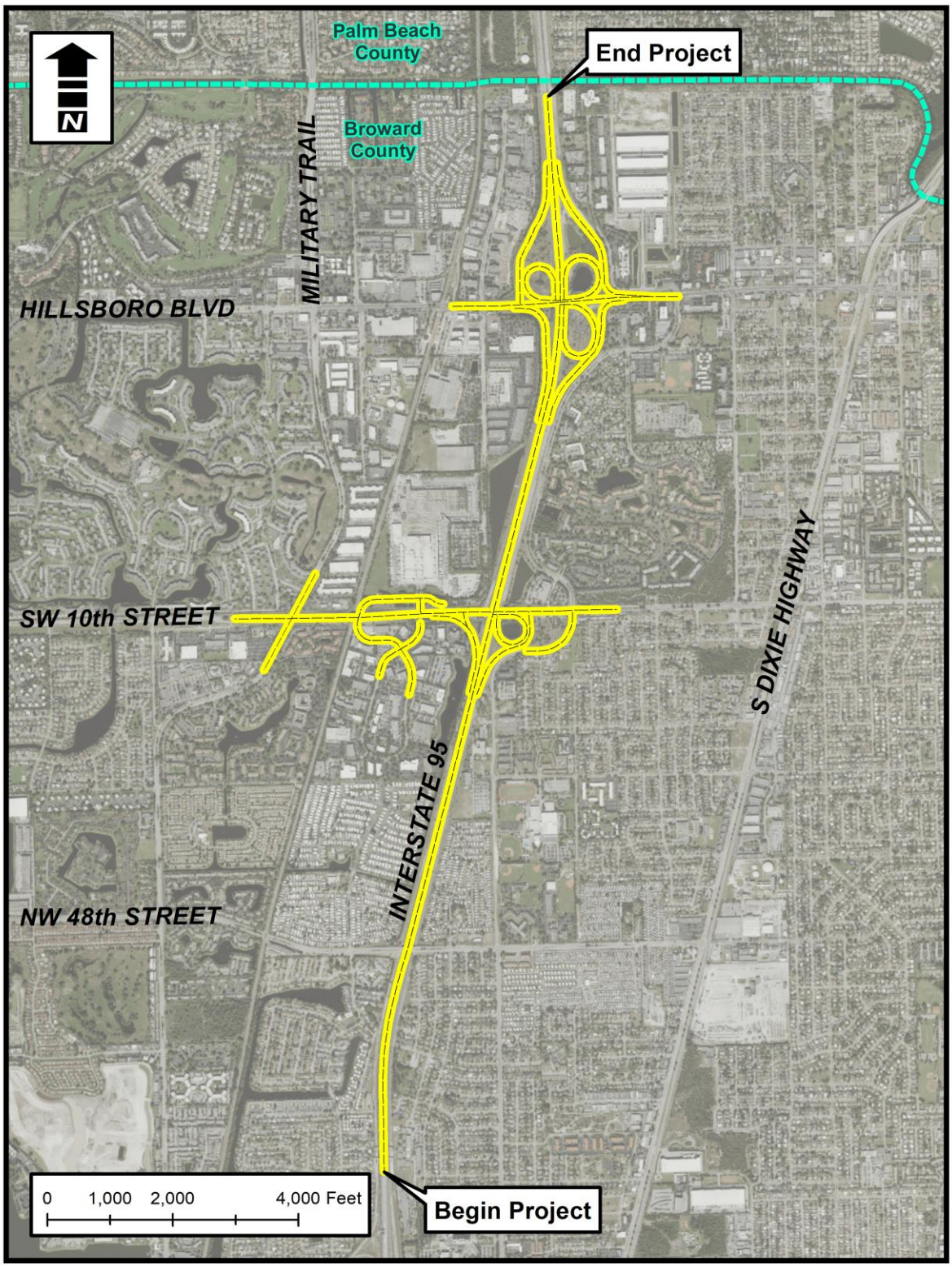

Figure 1 - 1: Project Study Area

1.1 Purpose and Need

The purpose of this project is to eliminate existing operational and safety deficiencies along I-95 from south of NE 48th Street to north of Hillsboro Boulevard including the interchanges at SW 10th Street and Hillsboro Boulevard, and on SW 10th Street and Hillsboro Boulevard in the vicinity of I-95. The primary need for the project is based on capacity/operational and safety issues, with secondary considerations for the needs of evacuation and emergency services, transportation demand, system linkage, modal interrelationships, and social demands and economic development.

1.1.1 Capacity/Operational Deficiencies

A need exists to improve traffic operations along I-95 in the vicinity of the SW 10th Street and Hillsboro Boulevard interchanges, especially at existing merge and diverge ramps that are the sources of traffic turbulence and collisions. The mainline directional volumes range from 4,400 to 5,850 vehicles per hour (vph) with ramp volumes from 800 to 1,250 vph at SW 10th Street and 400 to 1,000 vph at Hillsboro Boulevard.

Operational analyses along I-95 indicate that all freeway segments in the study area operate at Level of Service (LOS) D or better except for the following:

- The diverge segment at I-95 southbound (SB) off-ramp to SW 10th Street eastbound (EB) and westbound (WB) during the AM and PM peak periods;
- The I-95 mainline segment between I-95 SB on-ramp from SW 10th Street EB and WB and I-95 SB off-ramp to Sample Road EB and WB during the PM peak period;
- The I-95 mainline between I-95 SB On-Ramp from Palmetto Park Boulevard EB and I-95 SB Off-Ramp to Hillsboro Boulevard EB and WB during the AM peak period;
- The merge at I-95 SB on-ramp from Hillsboro Boulevard WB during AM and PM peak periods; and

- The diverge segment at I-95 northbound (NB) off-ramp to Hillsboro Boulevard EB during the AM peak period.

These conditions are existing concerns and are projected to worsen in the future if no action is taken. Year 2040 traffic projections show the mainline directional volumes ranging from 6,000 to 7,300 vph. Year 2040 peak hour directional volumes on I-95 Express are forecasted to range an additional 1,300 to 2,550 vph within the I-95 corridor. Operational analyses under the "No-Action" option in year 2040 reflects implementation of two major programmed improvements: 1) I-95 Express Phase 3 (and 2) I-95 Ramp Metering. All of the mainline freeway segments in the study area would operate at a deficient LOS (E or F) during one or both peak periods with the exception that the merge segment for I-95 SB On-Ramp from WB Hillsboro Boulevard would operate at LOS D during the PM peak hour.

1.1.2 Safety

A need exists to resolve safety issues within the project limits along I-95 as well as SW 10th Street and Hillsboro Boulevard. Crash analyses for the years 2008 through 2012 reveal that the I-95 segment within the Hillsboro Boulevard interchange area is classified as a high crash segment for four of the five study years. It should also be noted that the existing interchanges are closely located together and have short weave distances. Crash rates along SW 10th Street in the vicinity of I-95 exceed the statewide average for similar facilities for all five study years, but the segment along Hillsboro Boulevard in the vicinity of I-95 does not. Field observations indicate that the number of crashes along the Hillsboro Boulevard project segment may be influenced by queues extending from the railroad crossing into this area.

1.1.3 Evacuation and Emergency Services

The South Florida region has been identified by the National Oceanic and Atmospheric Administration (NOAA) as an area with a high degree of vulnerability to hurricanes and the Florida Division of Emergency Management has designated specific evacuation routes through the region. Both SW 10th Street and Hillsboro Boulevard are designated as emergency evacuation

routes from I-95 to SR 5/US-1 and A1A. I-95 is designated as an emergency evacuation route throughout Broward County. A need exists to enhance capacity and traffic circulation along evacuation routes to improve evacuation and enhance emergency response.

1.1.4 Transportation Demand

A need exists to improve capacity and safety while meeting transportation demand and maintaining consistency with other transportation plans and projects, such as the Broward County Interchange Master Plan (IMP) and I-95 Express Lanes Phase III Project. The project is included in the FDOT Work Program with Preliminary Engineering (design phase) is scheduled for fiscal year 2022. The project is also included in the Broward County MPO Commitment 2045 Metropolitan Transportation Plan [previously known as the Long Range Transportation Plan (LRTP)] for fiscal years 2020-2024. Additionally, the project is included in the Broward County MPO Transportation Improvement Program (TIP) for fiscal year 2020-2024.

1.1.5 System Linkage

A need exists to ensure that I-95 continues to meet the minimum requirements of a component of the state's SIS and the National Highway System (NHS), as well as provides access connectivity to other major arterials such as I-595 and Florida's Turnpike SIS and the National Highway System (NHS), as well as provides access and connectivity to other major arterials such as I-595 and Florida's Turnpike.

1.1.6 Modal Interrelationships

There exists a need for capacity improvements along the I-95 project corridor to enhance the mobility of public transit and goods by alleviating current and future congestion along the corridor and on the surrounding freight and transit networks. Reduced congestion will serve to maintain and improve viable access to the major transportation facilities and businesses of the area.

Increased mobility to public transit operations are needed and will benefit as a result of this project. Although no designated Broward County Transit (BCT) Routes are provided within the SW 10th Street interchange area, Hillsboro Boulevard is serviced by BCT Route #48, which provides a connection from SR 7 to Deerfield Beach including a direct connection to the Deerfield Tri-Rail Station located just west of the Hillsboro interchange.

1.1.7 Social Demands and Economic Development

Social and economic demands on the I-95 corridor will continue to increase as population and employment increase. The Broward County MPO Commitment 2045 Metropolitan Transportation Plan predicted that the population would grow from 1.9 million in 2018 to 2.2 million by 2045, an increase of 16 percent. Jobs were predicted to increase by 25 percent during the same time period. A need exists for the proposed improvements to support the predicted social and economic travel.

2.0 PROJECT STUDY AREA

The project study area consists of the existing and proposed right-of-way (ROW) limits for the viable Build Alternatives and also includes the No-Action Alternative. The study area is of sufficient size to identify potential direct and indirect effects of the viable Build Alternatives on habitats and wildlife species that may occur within or adjacent to the project corridor. For the purpose of this study, the viable Build Alternatives discussed for SW 10th Street are the Modified North alignment (herein after referred to as the North alignment) and Center alignment, which encompass all proposed roadway improvements along I-95, SW 10th Street, and Hillsboro Boulevard. The project footprint is the same for both Alternatives along I-95 and Hillsboro Boulevard. The project footprint varies slightly between the Build Alternatives along SW 10th Street.

This NRE was prepared to document the natural resources analysis performed to support decisions related to the evaluation of the project alternatives and to summarize potential impacts to federal and state protected species, wetlands, and protected habitats. Measures considered to avoid, minimize, and mitigate for potential impacts are also discussed. This report provides documentation of these processes to supplement the Environmental Document.

This NRE will be submitted to each regulatory resource agency with involvement in the project for review and comment (and/or concurrence) regarding the findings. Additional coordination may be necessary to confirm that all agency comments are sufficiently addressed. Prior coordination with the National Marine Fisheries Service (NMFS) during the ETDM Process (**Appendix A**) indicated that the proposed project does not appear to directly impact any NMFS trust resources [(listed/protected marine species) or Essential Fish Habitat (EFH)]. Therefore, no EFH discussion is included in this NRE.

2.1 Environmental Setting

The project is located within a densely developed urban region of northern Broward County. Along the existing I-95 corridor within the project study

area, adjacent lands are characterized by residential subdivisions, individual residences, commercial developments, institutional, recreational, and business and industrial complexes.

Prior to field reviews, literature and database searches were conducted to assess existing land uses/vegetative cover, soils, and the potential for occurrences of federally listed and state- listed plant and animal species within the project alternatives. The project study area was also evaluated for the presence of existing conservation lands.

The following data sources were reviewed as part of this evaluation:

- Aerial photographs (high-resolution, 1 inch = 200 feet) (2018);
- FDOT, Florida Land Use, Cover and Forms Classification System (FLUCFCS), Third edition (1999);
- Florida Association of Environmental Soil Scientists, Hydric Soils of Florida Handbook (Hurt 2007);
- FWC, Eagle Nest Locator website (http://myfwc.com/eagle/eaglenests/nestlocator.aspx);
- FWC, Florida's Endangered and Threatened Species (updated May 2017);
- Florida Natural Areas Inventory (FNAI) database, reviewed April 2020, www.FNAI.org;
- South Florida Water Management District, GIS Land Use Database (2008);
- United States Department of Agriculture, Natural Resources Conservation Service (NRCS), Soil Survey of Broward County Area, Florida, 1976;
- FWS, Classification of Wetlands and Deepwater Habitats of the United States (Cowardin, et al., 1979);
- FWS, National Wetlands Inventory, Wetlands Online Mapper, reviewed August 2018 (http://www.fws.gov/wetlands/Data/Mapper.html);
- FWS, Threatened and Endangered Species' Critical Habitat Online Mapping Application (http://crithab.fws.gov/); and
- FWS, Endangered Species Database (http://www.fws.gov/endangered/).

Environmental scientists familiar with Florida's natural communities conducted field evaluations along pedestrian transects traversing all natural and altered habitat types located within the project study area. Attention was given to identifying dominant plant species within each habitat. Exotic plant infestations; shifts in historical plant communities; and other disturbances (such as soil subsidence, clearing, canals, power lines, etc.) were noted. Attention was also given to identifying signs of wildlife utilization (i.e., vocalizations, tracks, scat, burrows, etc.) at each upland and wetland community within the project study area.

During the field inspections, preliminary habitat boundaries and classification codes established through in-office literature reviews and aerial photograph interpretation were verified. Approximate wetland and OSW boundaries were field-verified in accordance with the State of Florida Wetlands Delineation Manual (Chapter 62-340, F.A.C.) and the guidelines found within the Regional Supplement to the United States Army Corps of Engineers (USACE) Wetlands Delineation Manual: Atlantic and Gulf Coastal Plain Region (2010).

Based on site-specific data searches and field reviews, a total of 15 land use/vegetative cover classifications and 11 mapped soil units were identified within the project study area. Upland habitats were classified using FLUCFCS while wetland and surface water habitats were classified using both FLUCFCS and the FWS's Classification of Wetlands and Deepwater Habitats of the United States (Cowardin, et al., 1979).

2.2 Existing Land Use

The project is located in northern Broward County and traverses the northern region of Deerfield Beach. West of I-95 within the project limits, the dominant land uses are industrial and commercial, including a Publix distribution center and several hotels at the interchanges. Additional land uses west of I-95 include City of Deerfield government offices located west of the CSX railroad and south of Hillsboro Boulevard, and a residential development southwest of SW 10th Street and the railroad. East of I-95 and south of Hillsboro Boulevard, land use is mainly single and multi-family residential with a mixture of commercial development at the interchanges. North of Hillsboro Boulevard,

land use is mainly commercial along I-95 and Hillsboro Boulevard. Set behind the commercial development is the former Deerfield Country Club Golf Course. A total of 15 land use classifications comprised of 13 upland and two (2) surface water community types, were identified within the project study area. **Table 2-1** lists the acreage and percentage of each land use type within the project study area. Aerial maps depicting the boundaries of existing land uses and vegetative cover within the Build Alternatives and descriptions of each land use category are provided in **Appendices B-1 and B-2**, respectively.

Table 2 - 1: Existing Land Use/Vegetative Cover within the Project Study Area

FLUCFCS Classification(1)		FWS Classification(2)	FLUCFCS Description	Central Build Alternative		North Build Alternative	
				Acres	Percent	Acres	Percent
Uplands	121	N/A	Residential, Medium Density-Fixed Single Family Units	0.84	0.40%	2.78	1.11%
	132	N/A	Mobile Home Units	0.45	0.22%	1.63	0.66%
	133	N/A	Multiple Dwelling Units, Low-Rise	1.39	0.66%	3.02	1.21%
	134	N/A	Multiple Dwelling Units, High-Rise	1.71	0.81%	1.73	0.69%
	140	N/A	Commercial and Services	12.24	5.78%	11.89	4.78%
	141	N/A	Retail Sales and Services	0.28	0.13%	0.28	0.11%
	155	N/A	Other Light Industrial	2.60	1.23%	4.17	1.67%
	170	N/A	Institutional	1.02	0.48%	2.11	0.85%
	171	N/A	Educational Facilities	N/A	N/A	0.72	0.29%
	182	N/A	Golf Courses	0.24	0.11%	0.24	0.09%
	413	N/A	Sand Pine	0.03	0.01%	0.03	0.01%
	434	N/A	Hardwood – Conifer Mixed	1.85	0.87%	1.85	0.74%
	814	N/A	Roads and Highways	175.46	82.9%	198.66	79.80%
Total Uplands				***198.11***	***93.56%***	***229.08***	***92.02%***
Surface Waters	510	PEM1Cx	Streams and Waterways	1.50	0.71%	1.87	0.75%
	534	POWHx	Reservoir less than 10 Acres	12.13	5.73%	18.00	7.23%
Total Other Surface Waters				***13.63***	***6.44%***	***19.87***	***7.98%***
Total Land Use/Vegetative Cover				**211.74**	**100%**	**248.95**	**100%**

[1] FDOT, FLUCFCS (Third edition), 1999.

[2] FWS, Classification of Wetlands and Deepwater Habitats of the United States (Cowardin, et al), 1979.

2.3 Future Land Use

The City of Deerfield Beach Future Land Use Map (adopted December 3, 2013) predicts that land uses within the project area will remain similar except for the conversion of the former Deerfield Country Club Golf Course into an employment center. The anticipated employment center has been branded as the Hillsboro Technology Center.

2.3.1 SW 10th Street Interchange

The City of Deerfield Beach Future Land Use Map shows the area west of the SW 10th Street Interchange as Industrial. The NE quadrant of the interchange is shown as Residential Moderate (10 DU/AC), Commercial and Conservation. The SE quadrant shows as Community Facility, Recreation Open Space, Residential- Medium (15 DU/AC), Residential Moderate (10 DU/AC) and Residential Low (5 DU/AC).

2.3.2 Hillsboro Boulevard Interchange

The City of Deerfield Beach Future Land Use Map shows the NW quadrant of the Hillsboro Boulevard Interchange as Industrial and Commercial while the NE quadrant is shown as Industrial, Commercial, Recreation Commercial, Recreation Open Space and Employment Center. The SE quadrant shows as Commercial, Residential Moderate (10 DU/AC) and Recreation Open Space. The SW quadrant shows as Commercial, Industrial and York Residential Transit Oriented Development.

2.4 Soils

Based on the Soil Survey of Broward County, Florida (NRCS, 1976), the project study area is comprised of eleven (11) mapped soil units (soil maps and descriptions are provided in **Appendices C-1 and C-2**, respectively). According to the Hydric Soils of Florida Handbook (Hurt, 2007), two (2) of the eleven (11) soil types identified within the project study area are classified as hydric; the remaining nine (9) types are not classified as hydric. **Table 2-2**

lists the acreage and percentage of each mapped soil type within the Build Alternatives.

Table 2 - 2: Soil Types and Coverage within the Project Study Area

Mapped Soil Type	Hydric Y/N	Central Build Alternative		North Build Alternative	
		Area (acres)	% of Total	Area(acres)	% of Total
2 - Arents-Urban land complex	N	N/A	N/A	4.55	1.83%
15 - Immokalee fine sand, 0 to 2 percent slopes	Y	30.13	14.23%	30.47	12.24%
17 - Immokalee-Urban land complex	N	N/A	N/A	6.82	2.74%
23 – Paola-Urban land complex	N	1.10	0.52%	1.22	0.49%
26 - Pomello fine sand, 0 to 2 percent slopes	N	2.29	1.08%	N/A	N/A
28 - Pomello fine sand, 0 to 2 percent slopes	N	N/A	N/A	2.25	0.90%
29 - Pompano fine sand, 0 to 2 percent slopes	Y	45.52	21.50%	53.71	21.58%
34 - St. Lucie fine, 0 to 2 percent slopes	N	5.88	2.78%	5.80	2.33%
36 - Udorthents	N	0.24	0.11%	0.02	0.01%
38 - Udorthents, shaped	N	126.02	59.52%	142.54	57.25%
40 - Urban land	*	0.03	0.01%	0.03	0.01%
99 - Water	*	0.53	0.25%	1.53	0.61%
Total		**211.74**	**100%**	**248.95**	**100%**

*unranked

2.5 Drainage

Along SW 10th Street, from east of Military Trail to west of the railroad tracks, the proposed roadway improvements are within the Broward County Water Control District #2 C-2 canal basin. Drainage for this portion is incorporated in the adjacent SW 10th Street Connector PD&E Study from Florida's Turnpike/Sawgrass Expressway to SR 9/I-95 (FM 439891-1-22-02). Drainage improvements include collection and conveyance of runoff and proposed stormwater management facilities (SMF) within the C-2 canal basin.

Along SW 10th Street, east of the railroad tracks to I-95 and the remaining portion of the study along I-95, from south of SW 10th Street to north of Hillsboro Boulevard, the proposed I-95 improvements are within the Broward County Water Control District #2 C-1 canal basin. Drainage improvements include collection and conveyance of runoff, proposed SMFs and floodplain compensation (FPC) sites within the C-1 canal basin. New SMFs are proposed within the FDOT ROW along SW 10th Street and I-95 as well as regrading/modifying existing infield ponds at the interchanges to accommodate treatment and attenuation requirements. Impacts to the floodplain are anticipated to require offsite FPC sites.

The SFWMD and the FDOT require that the post-development discharge rates not exceed the pre-development discharge rates. The proposed design will be analyzed with the SFWMD 25 year - 72 hour storm event. The SFWMD and FDOT criteria will be met with the new stormwater management system. In addition, SFWMD and FDOT storm water quality criteria are anticipated to be met with construction of the new stormwater management system. Therefore, water quality impacts to downstream receiving waters are not anticipated to occur.

Please refer to the Preliminary Engineering Report for additional details of the existing and proposed drainage system for this study.

3.0 EXISTING CONDITIONS

Due to the uniqueness of this project, the analysis and evaluation of the existing conditions were separated into three corridors; I-95 (SR 9), SW 10th Street (SR 869) and Hillsboro Boulevard (SR 810). Data gathering for each of these corridors focused on the areas of roadway, bridge and environmental characteristics. Assessment of the existing conditions began with the collection and review of all data pertaining to the existing facilities which included conducting on-site field inventories, review of existing documents, as well as, review of other pertinent data used for the evaluation of these transportation facilities.

3.1 Functional Classification

The roadway network within the project study area is comprised of interstate expressways, state roads, county roads and local roads that provide access and traffic circulation within residential, commercial and industrial areas.

3.1.1 I-95

Within the limits of the study for access management, I-95 is defined as Limited Access Class 1.2 Freeway in an Existing Urbanized Area with a functional classification as an urban principal arterial interstate. I-95 is an essential part of the SIS and NHS networks. Within the limits of the project, I-95 has six general purpose lanes (three in each direction) and two Express (EP) lanes (one in each direction).

3.1.2 SW 10th Street

SW 10th Street has a functional classification as an urban principal arterial other. SW 10th Street is classified as a six-lane divided State Principal arterial west of I-95 and as a six-lane divided City Minor Arterial east of I-95. In addition, it is on the SHS and SIS systems being classified as a SIS corridor.

3.1.3 Hillsboro Boulevard

Hillsboro Boulevard has a functional classification as an urban principal arterial other. Hillsboro Boulevard is classified as a six-lane divided State Minor Arterial west of I-95 and as a State Principal Arterial east of I-95. In addition, it is on the SHS and SIS systems being classified as a SIS corridor classification as an urban principal arterial from the intersection at Goolsby Boulevard (MP 4.760) to I-95 (MP 5.365) Hillsboro Boulevard since it connects the I- 95 Expressway to South Florida Rail Corridor.

3.2 Access Management

3.2.1 I-95

The access management classification for the I-95 corridor is Class 1.2, Freeway in an existing urbanized area with limited access.

3.2.2 SW 10th Street

Southwest 10th Street is designated as Class 3 for access management.

3.2.3 Hillsboro Boulevard

Hillsboro Boulevard is designated as Class 5 for access management.

3.3 Typical Sections

The following **Table 3-1** depicts the existing typical section characteristics for each corridor.

Table 3 - 1: Existing Typical Section Characteristics

Typical Section Element	Roadway		
	I-95	SW 10th St	Hillsboro Blvd
Number of Travel Lanes	8	6	6
Travel Lane Width	12 ft	11-12 ft	11 ft
Parking Lane Width	n/a	n/a	n/a
Curb and Gutter	n/a	Type F	Type F
Inside Shoulders Width	12 ft	n/a	n/a
Outside Shoulders Width (Bike Lane)	12 ft	Varies 4-8 ft	Varies 4-6 ft
Median Width	26.5 ft	14 to 17.5 ft	15.5 ft
Sidewalk Width	n/a	Varies 5-6 ft	Varies 6-7 ft
Right-of-Way Width	240 ft–300 ft	106 ft (+)	106–136 ft

3.3.1 I-95

Within the limits of the study, I-95 is an eight-lane divided limited access facility consisting primarily of a two and a half-foot center barrier wall with two twelve-foot paved inside shoulders (one in each direction). The inside lane in each direction is a twelve-foot wide EP lane with a two-foot striped buffer area separating the EP lane from the three twelve-foot general purpose lanes. In each direction, along the outside of the general purpose lanes is a twelve-foot shoulder [ten-foot paved and two-foot unpaved]. In the NB direction, a twelve-foot auxiliary lane exists between the SW 10th Street on-ramp and Hillsboro Boulevard off-ramp. Additionally, in the SB direction a twelve-foot auxiliary lane exists between the Hillsboro Boulevard on-ramp and SW 10th Street off-ramp. The existing roadway segment is depicted in **Figure 3-1** and typical section for this corridor is shown in **Figure 3-2**.

Figure 3 - 1: Existing Roadway Segment I-95 Corridor

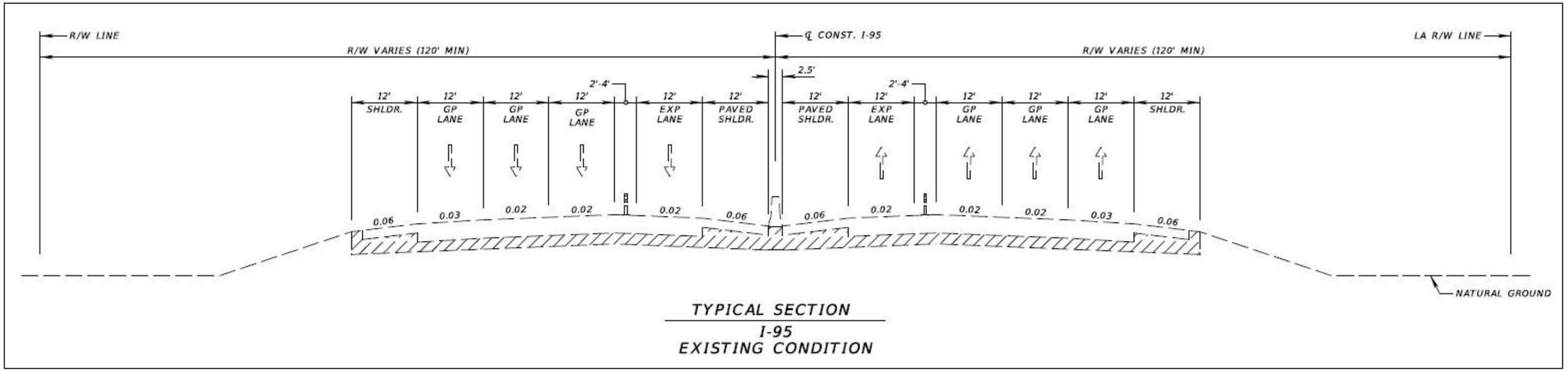

Figure 3 - 2: Existing Typical Section – I-95

3.3.2 SW 10th Street

EB along SW 10th Street from approximately 1000-feet west of the intersection at Military Trail to the intersection there are three twelve-foot lanes, a four to five-foot bike lane, and an eight-foot (four-foot paved and four-foot unpaved) outside shoulder. In the center, there is a raised curb and gutter median that varies in width from 17.5 feet.

WB along SW 10th Street from approximately 1000-feet west of the intersection at Military Trail to the intersection there are two twelve-foot lanes, a four- foot bike lane and four-foot unpaved shoulder.

In each direction, from the intersection at Military Trail to East Newport Center Drive there are three twelve-foot lanes, a four-foot bike lane, two- foot curb and gutter with a five-foot concrete sidewalk running along at the back of curb. In the center of the roadway there is a raised curb and gutter median that varies in width from 14.0 to 17.5 feet. In the WB direction, the outside lane is an auxiliary lane used for right turns and/or acceleration that terminates at the intersection with Military Trail. In the EB direction a fourth (outside) twelve to 14-foot wide lane exists as an auxiliary lane used for right turns and/or acceleration and terminates at the SB on-ramp to I-95.

From East Newport Center Drive to SW Natura Boulevard/FAU Research Park Boulevard there are three eleven-foot lanes in each direction, two- foot curb and gutter with a six- foot concrete sidewalk running along at the back of curb with no bicycle lane or shoulder. EB the third lane (outside) terminates at the NB entrance ramp to I-95 and then remerges west of the NB I-95 off-ramp intersection continuing on to the FAU Research Park Boulevard intersection. WB are three eleven-foot lanes, two-foot curb and gutter with a six-foot concrete sidewalk running along at the back of curb with no bike lane or shoulder present. A fourth WB lane emerges at the SB I-95 off-ramp intersection and terminates at the East Newport Center Drive intersection. In the center of the roadway there is a raised curb and gutter median that varies in width from 14 to 17.5 feet.

The existing roadway segment is depicted in **Figure 3-3** and typical section for this corridor is shown in **Figure 3-4**.

Figure 3 - 3: Existing Roadway Segment – SW 10th Street

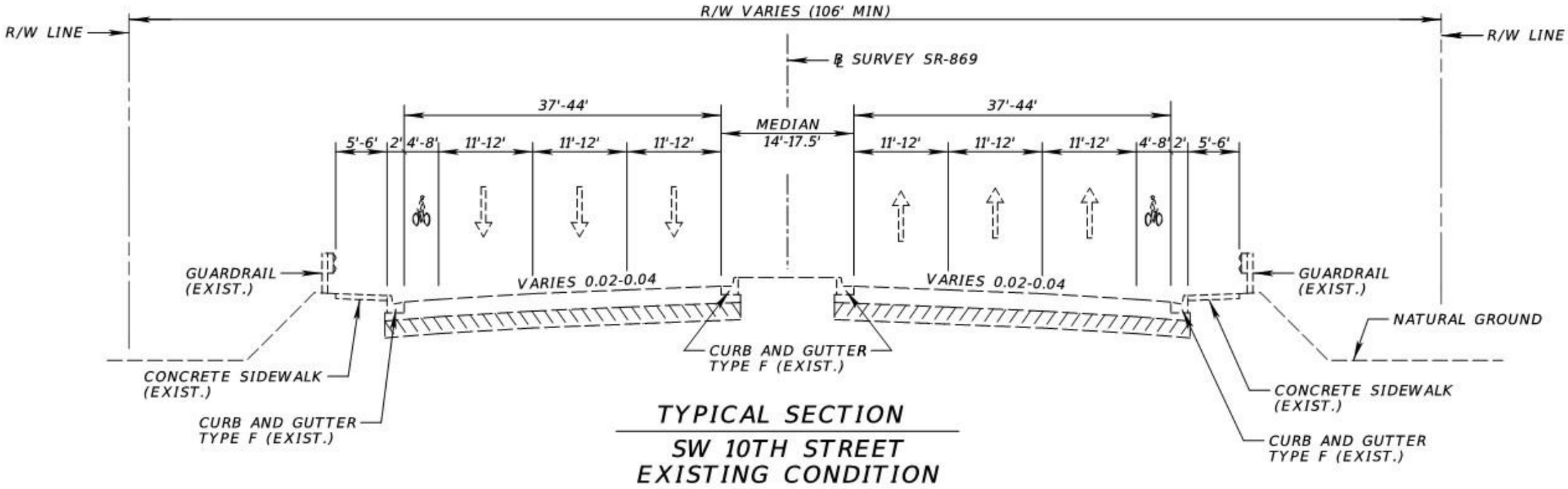

Figure 3 - 4: Existing Typical Section: SW 10th Street

3.3.3 Hillsboro Boulevard

Along Hillsboro Boulevard from east of Military Trail intersection to the intersection with Natura Boulevard/Fairway Drive is an urban arterial typical section having a fifteen and a half-foot raised median, six eleven- foot thru lanes (3 lanes in each direction) and two four-foot bicycle lanes (one in each direction) with Type F curb and gutter on both sides of the roadway. In each direction outside the bicycle lanes is a two-foot curb and gutter with six-foot concrete sidewalk running along at the back of curb. Total ROW width varies.

The existing roadway segment is depicted in **Figure 3-5** and typical section for this corridor is shown in **Figure 3-6**.

Figure 3 - 5: Existing Roadway Segment – Hillsboro Boulevard

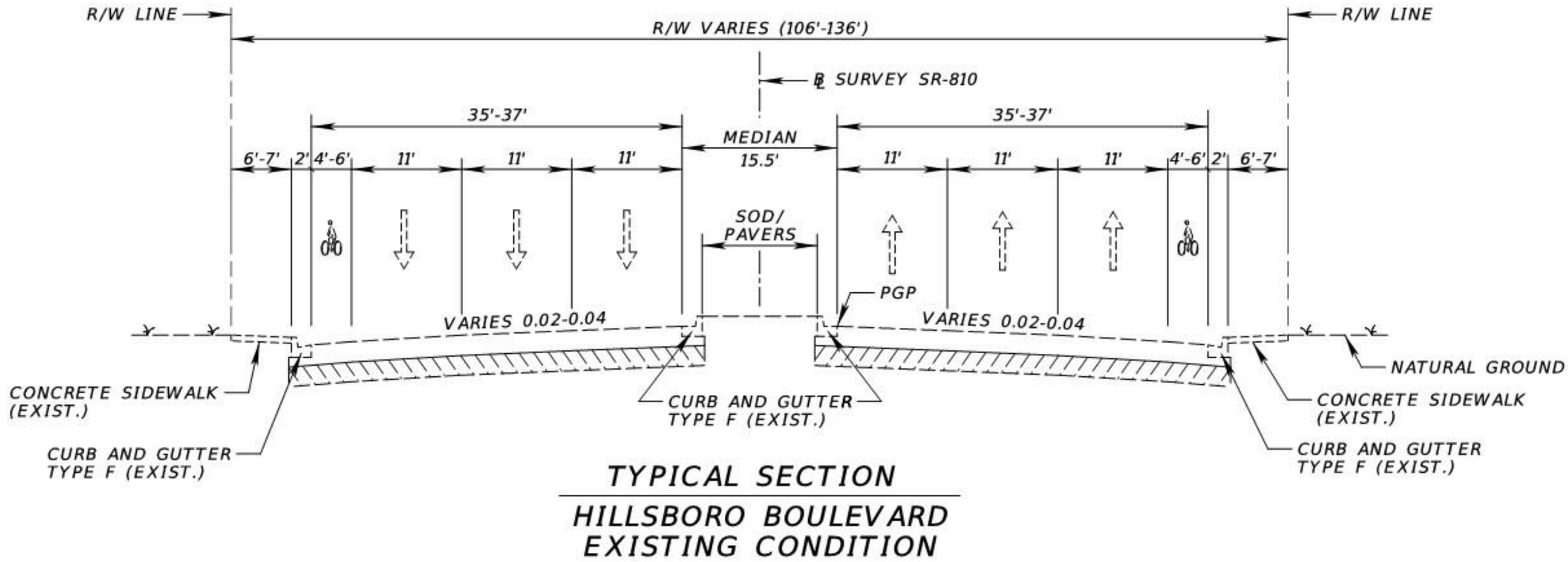

Figure 3 - 6:Existing Typical Section – Hillsboro Boulevard

3.4 Right-of-Way

3.4.1 I-95

The existing ROW along I-95 varies with a minimum of 240 feet and varies based on shoulder width and natural ground.

3.4.2 SW 10th Street

The existing ROW along SW 10th Street varies with a minimum of 125 feet and varies based on median width, shoulder width and natural ground with a typical width between 180 to 250 feet.

3.4.3 Hillsboro Boulevard

The existing ROW along Hillsboro Boulevard varies from 106 to 136 feet and varies based on median width.

Please refer to the Preliminary Engineering Report for additional details of existing roadway conditions and typical sections.

3.5 Pavement Type and Operational Conditions

3.5.1 Pavement Condition

FDOT performs annual surveys of the entire State highway system in support of the Department's Pavement Management Program. The data collected (in terms of crack, ride, and rut measurements) is used to assess the condition and performance of the State's roadway as well as to predict future rehabilitation needs.

3.5.1.1 I-95 Pavement Type and Condition

The existing pavement type along I-95 is asphalt pavement (FC-5). Based on data obtained from the Pavement Condition Survey, I-95 was last resurfaced in 2008. The NB lanes along I-95 have adequate pavement ratings. The SB

lanes along I-95 has adequate pavement ratings for Rideability and Rutting. I-95 is currently under construction to add lanes for I-95 Express within the limits of this study (FM 433108-6, Phase 3B-1) and will be completely resurfaced as part of that project.

3.5.1.2 SW 10th Street Pavement Type and Condition

The existing pavement type along SW 10th Street is asphalt pavement (FC-9.5). Based on data obtained from the Pavement Condition Survey, SW 10th Street was last resurfaced in 2014. Both the EB and WB lanes have adequate pavement ratings.

3.5.1.3 Hillsboro Pavement Type and Condition

The existing pavement type along Hillsboro Boulevard is asphalt pavement (FC-9.5). Within the limits of this study, Hillsboro Boulevard was last resurfaced in 2017 (FM 430602-1). Therefore, both the EB and WB lanes have adequate pavement ratings.

4.0 PROJECT ALTERNATIVES

Alternatives evaluated during the PD&E Study include the No-Action Alternative, the Transportation Systems Management and Operations (TSM&O) Alternative, and the Build Alternatives as described below. Alternatives were developed and evaluated based on the ability to meet the project purpose and needs.

4.1 No-Action Alternative

The No-Action Alternative assumes that no improvements would be implemented within the project corridor. It serves as a baseline for comparison against the Build Alternatives. It will, however, include on-going construction projects and all funded or programmed improvements scheduled to be opened to traffic in the analysis years being considered. These improvements must be part of the FDOT's adopted Five-Year Work Program, Broward County MPO, Cost Feasible Metropolitan Transportation Plan (previously known as LRTP), transportation elements of Local Government Comprehensive Plans (LGCP), or developer-funded transportation improvements specified in approved development orders.

The advantage of the No-Action Alternative is that it requires no expenditure of public funds for design, ROW acquisition, construction or utility relocation. In addition, there would be no disruptions due to construction, no direct or indirect impacts to the environment and/or the socio-economic characteristics from the project. However, the No-Action Alternative does not address the purpose and need of the project and operational and safety conditions within the project area will become progressively worse as traffic volumes continue to increase.

4.2 Transportation Systems Management and Operations (TSM&O)

Transportation Systems Management and Operations (TSM&O) aims to optimize the performance of existing multimodal infrastructure through implementation of systems and services to preserve capacity and improve the safety and reliability of our transportation system. TSM&O improvements

include traffic management and operations solutions such as Information Technology System (ITS) devices, signal retiming, and adaptive signal control. The TSM&O is not an alternative on its own, however, the TSM&O improvements are included in each viable Build Alternative.

TSM&O improvements alone will not significantly enhance the capacity issues through the corridor by the design year 2040. Long-term improvements are necessary to mitigate the existing traffic conditions and increase capacity to accommodate future travel demand.

4.3 Build Alternatives

Build Alternatives were developed along I-95, SW 10th Street and Hillsboro Boulevard to address the purpose and needs of the project.

4.3.1 Interstate 95

All Build Alternatives considered for I-95 include:

- Two 12-foot wide express lanes (one in each direction)* Design Variation for 11-foot lane width in some areas.
- Six 12-foot wide general purpose lanes (three in each direction)
- Four-foot to two-foot wide buffer with tubular markers separating the general purpose lanes from the express lanes
- A 12-foot wide paved inside shoulder with some areas with 10-foot inside shoulders
- A 12-footwide outside shoulder (ten-feet paved and two-feet unpaved) with some areas with 10-foot outside shoulders
- A 2.5-foot wide center barrier wall
- Twelve-foot wide auxiliary lanes at selected locations

4.3.1.1 Alternative 1

Alternative 1 provides a 2-lane, physically separated northbound collector distributer (CD) road on the east side of I-95 between SW 10th Street and Hillsboro Boulevard that combines the eastbound to northbound and

westbound to northbound on-ramps. A braided ramp is proposed for the northbound CD road to separate the traffic destined to I-95 mainline from the traffic exiting at Hillsboro Boulevard. A proposed auxiliary lane on the west side of I-95 combines the eastbound to southbound and westbound to southbound on-ramps. A braided ramp is proposed to separate the traffic destined to I-95 mainline from traffic exiting at SW 10th Street. All the services interchange ingress and egress ramps remain configured similar to the existing except for the new westbound SW 10th Street to northbound ingress ramp which is provided as a free-flow right turn in the NE quadrant. Alternative 1 is shown in **Figure 4-1**.

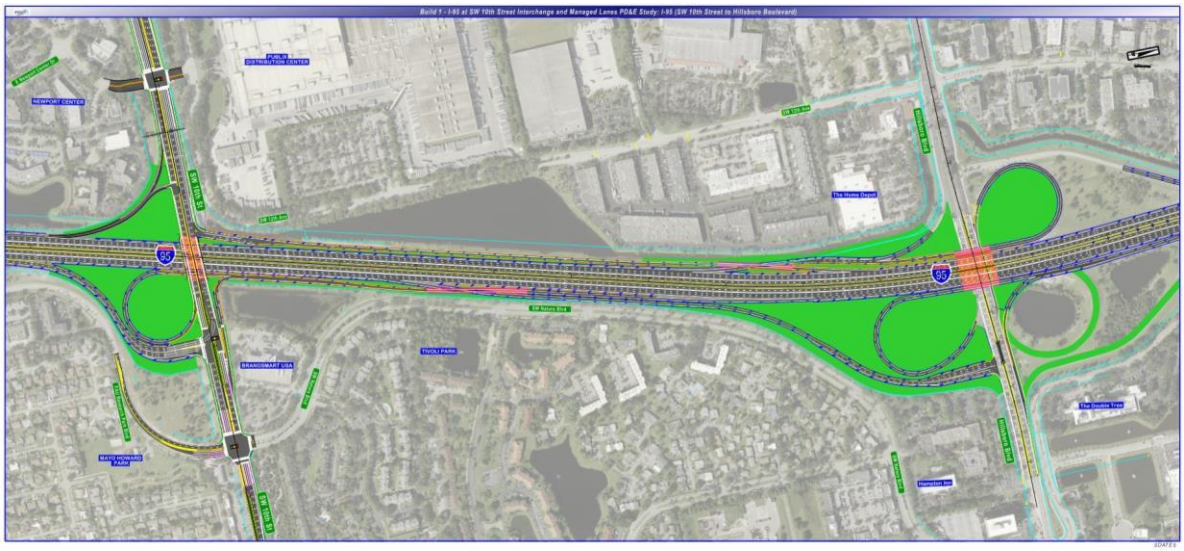

Figure 4 - 1: I-95 Alternative 1 (SW 10th Street to Hillsboro Boulevard)

4.3.1.2 Alternative 2

Alternative 2 provides the northbound CD road and southbound auxiliary lane as described for Alternative 1. Additionally, Alternative 2 also provides direct access from the SW 10th Street Connector to both the I-95 express lanes and general-purpose lanes compatible with the SW 10th Street North Alignment Alternative. Alternative 2 proposes to maintain the existing number of general-purpose lanes throughout the I-95 corridor. The express lanes will be

separated from the general-purpose lanes with tubular markers and a 2-foot to 4-foot wide buffer.

In the northbound direction, an egress point is proposed for the northbound express lanes north of the Sample Road interchange for traffic destined to the northbound I-95 general-purpose lanes. A second egress point south of the SW 10th Street interchange is proposed for traffic destined to the westbound SW 10th Street Connector lanes which braids over the general- purpose lanes and merges with the northbound CD road on the east side of I-95.

Access from eastbound SW 10th Street Connector to I-95 northbound is also provided for both the I-95 general-purpose and express-lanes. Access to the general-purpose lanes is provided by an egress access point from the express lanes north of SW 10th Street interchange. A new I-95 northbound on-ramp is introduced for westbound SW 10th Street as a free-flow right turn on the northeast quadrant of the interchange relocating the existing left turn movement at the current intersection. The new I-95 northbound on-ramp merges with eastbound on-ramp and the eastbound SW 10th Street Connector traffic destined to the I-95 general-purpose lanes on the northbound CD road. The northbound CD road braids over the northbound Hillsboro Boulevard off-ramp to merge with the I-95 northbound as an auxiliary lane just south of the Hillsboro Boulevard overpass bridge. It continues north connecting with the auxiliary lane being built by the I-95 Express Phase 3B-1 project to the north of Hillsboro Boulevard.

In the southbound direction, an egress point is proposed from the express lanes south of Hillsboro Boulevard interchange for the traffic destined to the westbound SW 10th Street Connector. Access to the SW 10th Street Connector from the general-purpose lanes is also provided south of the Hillsboro Boulevard interchange. The proposed CD road on the west side of I-95 braids over the I-95 southbound traffic entering from eastbound/westbound Hillsboro Boulevard on-ramps. Traffic from the I-95 general-purpose lanes and express-lanes merge on the CD road to provide access to the SW 10th Street Connector.

Access from the eastbound SW 10th Street Connector to I-95 southbound is provided for both the I-95 general-purpose and express-lanes. Access to the general-purpose lanes is provided by an egress access point from the I-95 express-lanes north of SW 10th Street interchange which braids over the general-purpose lanes to merge with the I-95 mainline on the west side of I-95.

Figure 4-2 shows the proposed improvements south of the SW 10th Street interchange, and **Figure 4-3** shows the proposed improvements north of the SW 10th Street interchange.

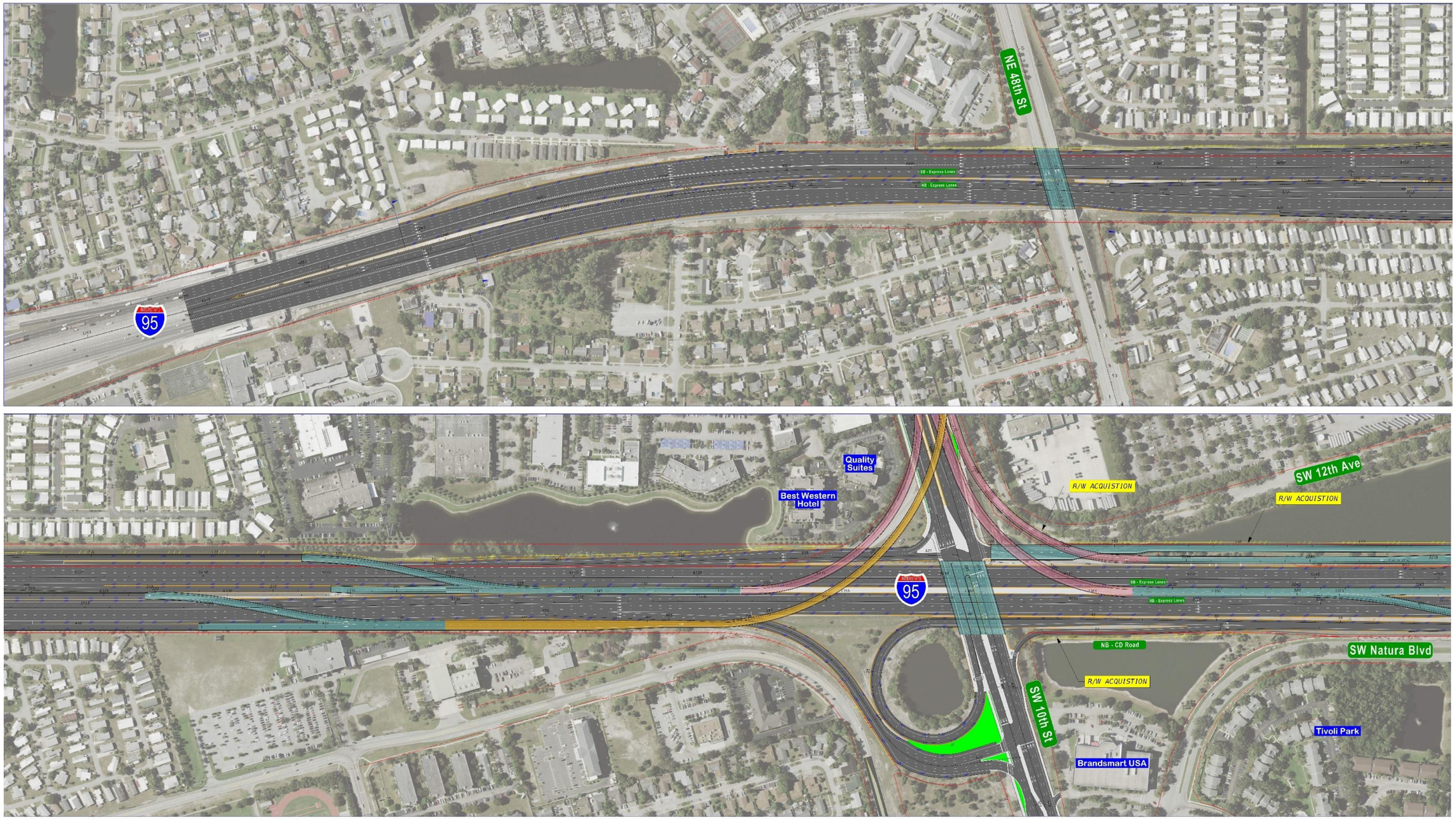

Figure 4 - 2: Alternative 2 Concept Plan (South of SW 10th Street)

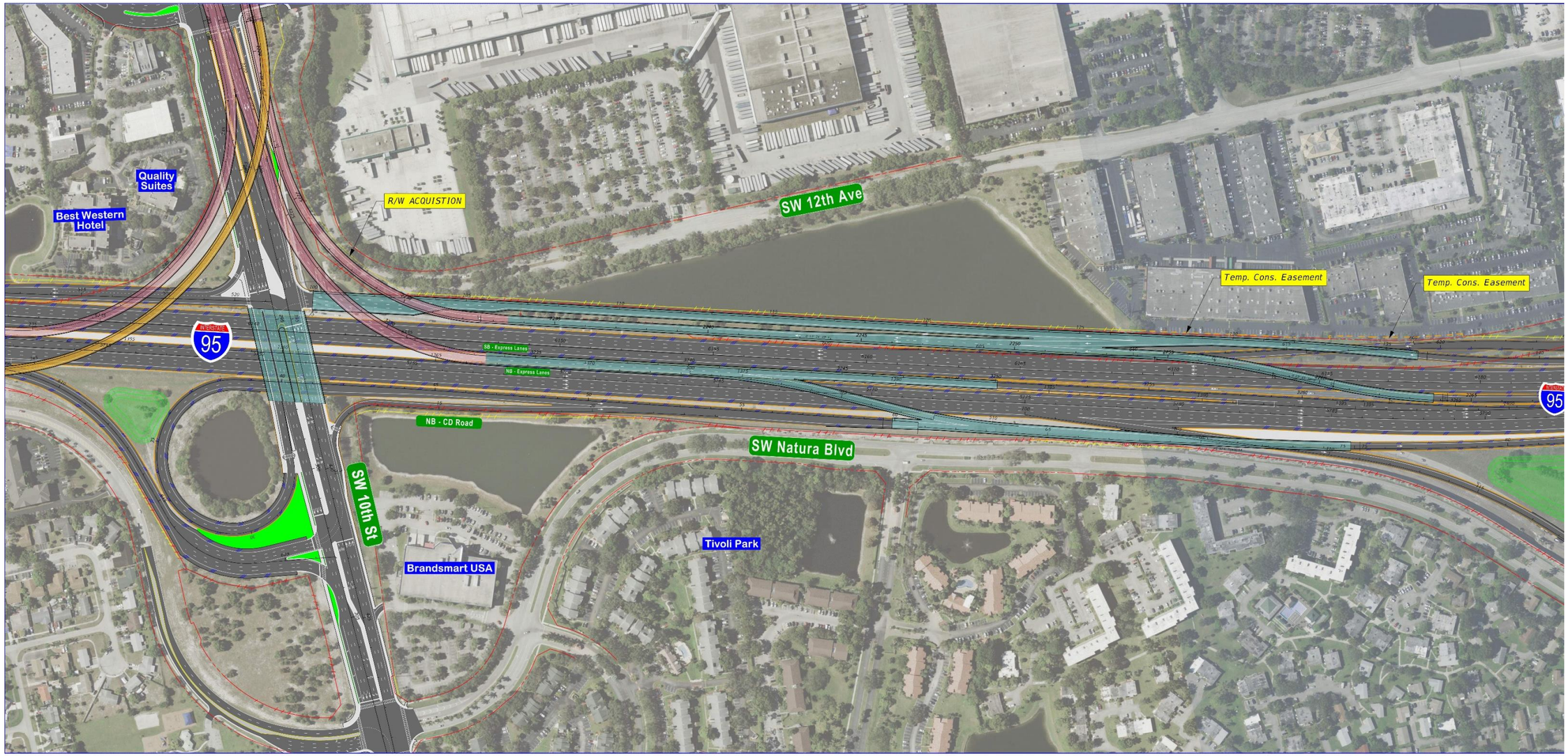

Figure 4 - 3: Alternative 2 Concept Plan (North of SW 10th Street) (1 of 2)

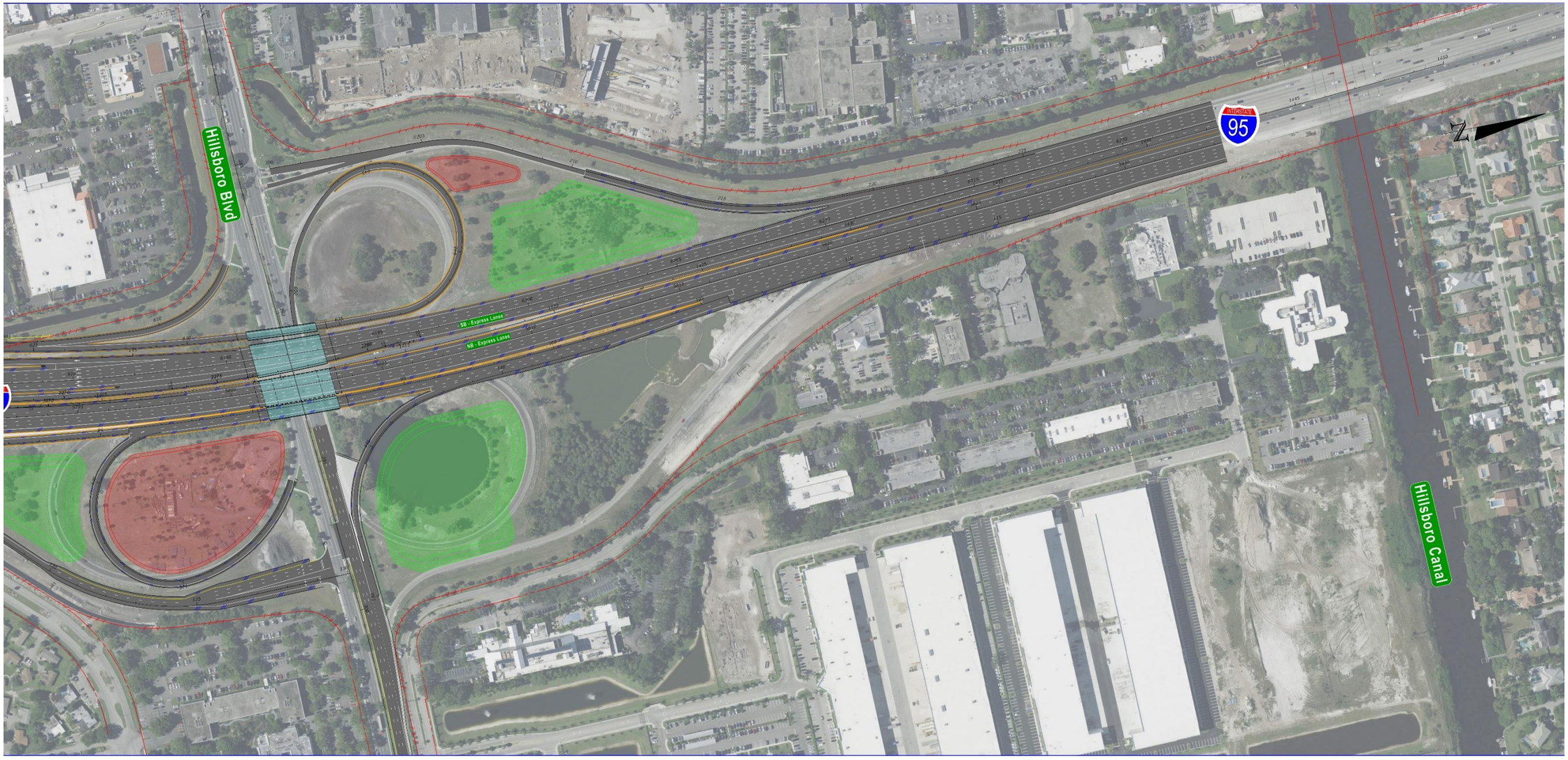

Figure 4-3: Alternative 2 Concept Plan (North of SW 10th Street) (2 of 2)

4.3.2 SW 10th Street

The Build Alternatives considered along SW 10th Street provide two connector lanes in each direction along SW 10th Street with direct connect access ramps to/from the I-95 express lanes. A westbound on-ramp access to the connector lanes is provided just west of Newport center, and an eastbound off-ramp access to local SW 10th Street is provided west of the Military Trail intersection. Improvements at the northbound ramp terminal to accommodate triple lefts and triple rights, as well as, relocating the westbound to northbound entrance ramp access from the SE quadrant of the interchange to the NE quadrant remains the same for both Build Alternatives.

Two alignments were considered for the connector lanes: the Center Alignment, and the North Alignment. The Center Alignment includes three 11-foot lanes with a 7-foot buffered bike lane and 6-foot sidewalk in each direction along SW 10th Street. However, no sidewalk is provided along the north side from East Newport Center Drive/SW 12th Avenue intersection to Military Trail. A roundabout is provided at the intersection of W. and E. Newport Center Drive. Triple rights are provided at the northbound and southbound legs of the SW 12th Avenue/E. Newport Center Drive intersection with SW 10th Street.

The Center Alignment Alternative also requires minor ROW acquisition on the north side as well as on the south side including 15 privately owned and nine government owned parcels. No relocations are required.

Figure 4-4 shows the Center Alignment concept. The top figure illustrates the proposed SW 10th Street Connector to be constructed above local SW 10th Street. The lower figure illustrates the local SW 10th Street configuration and intersection design.

Both North and Center Alignment options have a similar configuration. The North Alignment provides three 11-foot lanes with a 7-foot buffered bike lane and 6-foot sidewalk in the westbound direction. A 12-foot shared use path is provided in the eastbound direction along SW 10th Street for local pedestrian and bike traffic. However, no sidewalk is provided along the north side from

East Newport Center Drive/SW 12th Avenue intersection to Military Trail. Two 12-foot connector lanes are provided in each direction with direct connect ramps providing access to/from the I-95 express lanes and general- purpose lanes allowing regional connectivity to the express lanes network. In the eastbound direction along the connector lanes an egress ramp departs from the connector lanes west of the Military Trail intersection braiding over the eastbound SW 10th Street local lanes connecting along the outside lane. The egress ramp allows access to the Newport Center and local SW 10th Street east of the I-95 Interchange.

On SW 10th Street at the northbound leg of the East Newport Center Drive intersection a right turn lane, a left turn lane, and a choice through/left turn lane are provided. A left turn lane, a choice through/left turn lane, and right turn lane are provided for the southbound leg of the intersection. In addition, dual left turn lanes are provided for westbound and eastbound movements. An exclusive right turn lane is provided for the westbound movement. This configuration allows improved operations and mitigates congestion for the intersection, the interchange ramp intersections and along SW 10th Street.

A roundabout is being considered at the intersection of West and East Newport Center Drive and will continue to be coordinated through the design phase of the project. The roundabout would replace the stop condition and improve the operation of the intersection. A loop ramp is provided along SW 12th Avenue that connects directly to the westbound SW 10th Street Connector lanes to improve operations of the East Newport Center Drive intersection with SW 10th Street by allowing westbound traffic making a right turn to bypass the signal.

At I-95, the northbound exit ramp terminal was expanded to accommodate triple left and triple right turn lanes. The intersection at Natura Boulevard is expanded to accommodate double left and single right turn lanes on all intersection approaches. **Figure 4-5** shows the North Alignment concept. The top figure illustrates the proposed SW 10th Street Connector to be constructed above local SW 10th Street. The lower figure illustrates the local SW 10th configuration and intersection design.

Minor ROW acquisition is required on the north and south sides of SW 10th Street including six privately owned and three government owned parcels. No relocations are required.

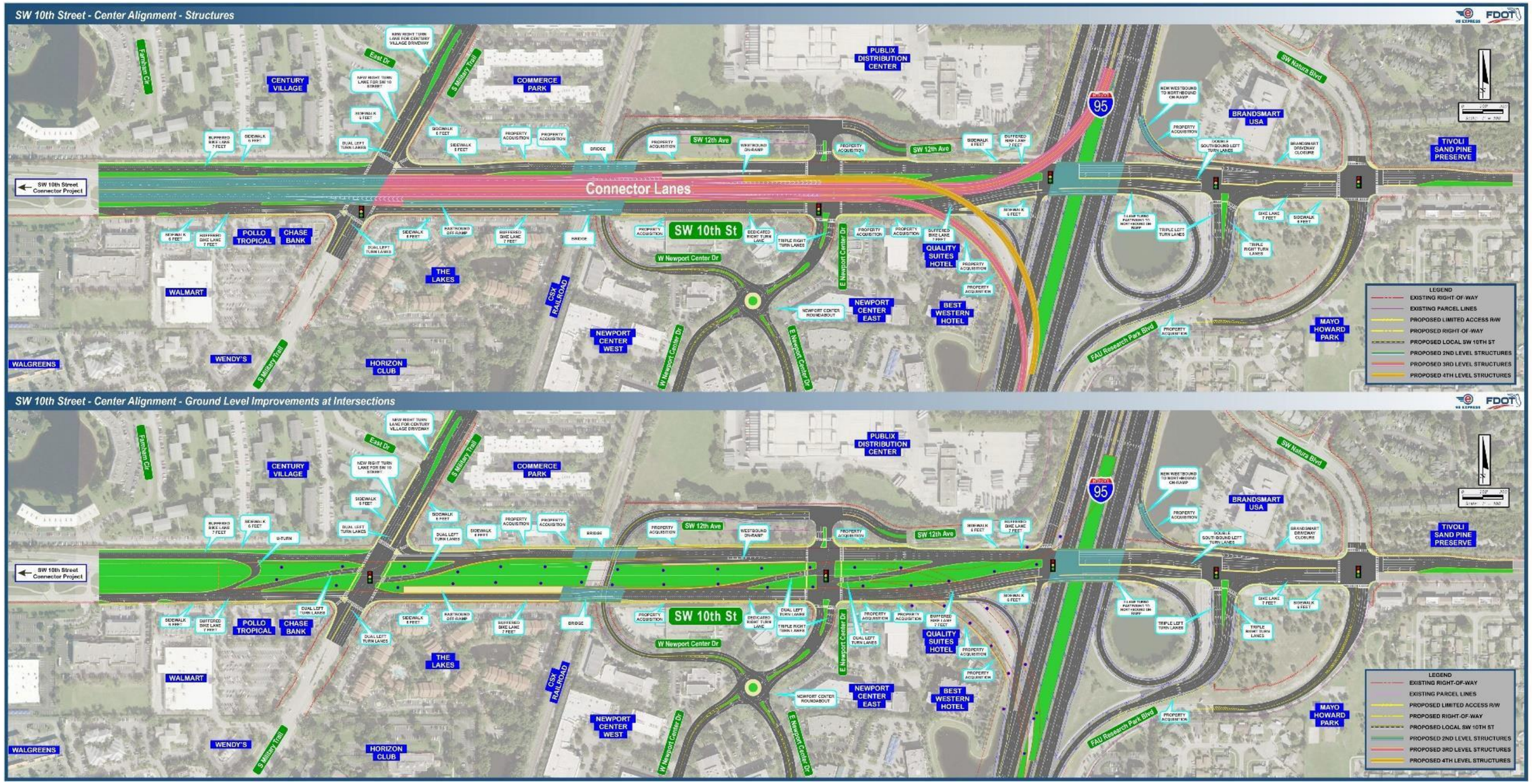

Figure 4 - 4: SW 10th Street – Center Alignment Concept Plans

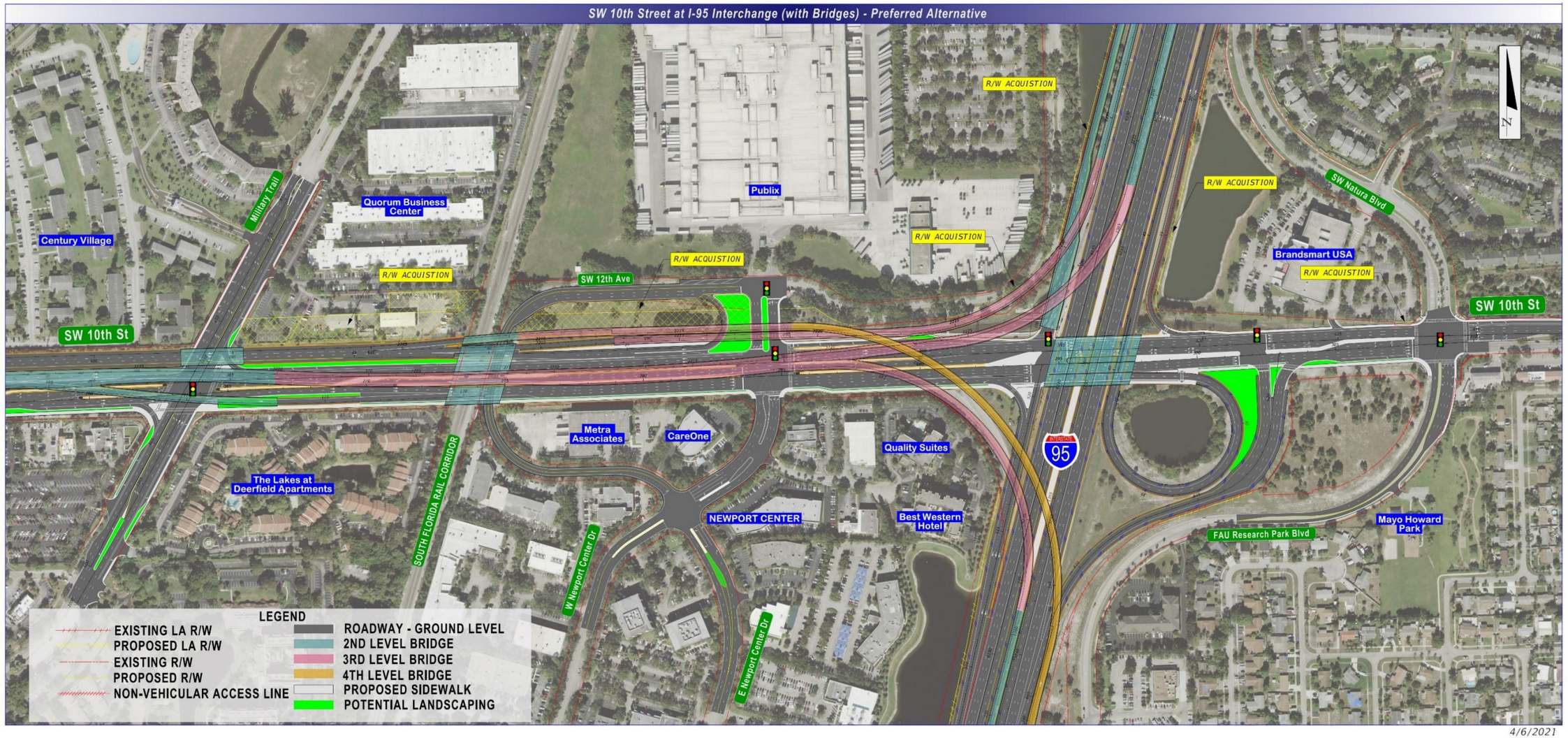

Figure 4 - 5: SW 10th Street – North Alignment Concept Plans (1 of 2)

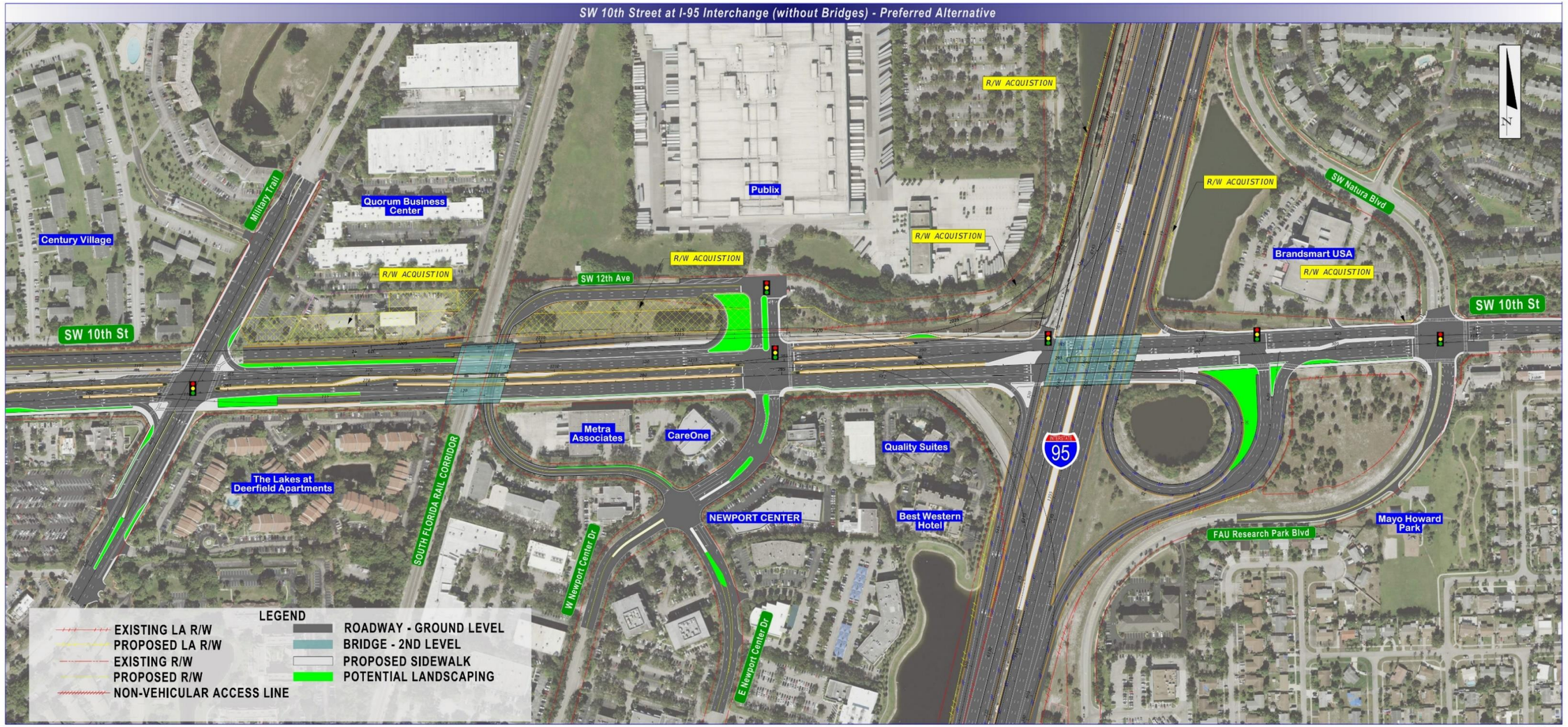

Figure 4-5: SW 10th Street – North Alignment Concept Plan (2 of 2)

4.3.3 Hillsboro Boulevard

Two Build Alternatives were considered along Hillsboro Boulevard. Alternative 1 proposes a depressed section while Alternative 2 proposes an elevated section. Improvements at the I-95 ramp terminals remained the same for both Build Alternatives and include providing a 2-lane northbound exit ramp combining both exit ramps into a single ramp with a signal controlled. The northbound exit ramp terminal will provide expanded storage for a triple left and double right turn lanes. Additional improvements include expanding the north leg of Jim Moran Boulevard to allow for southbound double left and double right turn lanes, extending the northbound to westbound left turn lane storage and the eastbound to southbound right turn storage at Natura Boulevard.

4.3.3.1 Alternative 1

Alternative 1 proposes a depressed section from Goolsby Boulevard to SW 12th Avenue with two 11-foot lanes in each direction and a 7.5-foot inside shoulder. An access road is proposed on each side with one 11-foot lane, 7-foot buffered bike lane and 6-foot sidewalk (**Figure 4-6**). This Alternative was deemed not viable due to impacts to the SFRC line and access to adjacent properties.

4.3.3.2 Alternative 2

Alternative 2 proposes an elevated section from Goolsby Boulevard to SW 12th Avenue with two 11-foot lanes in each direction, a 7.5-foot inside shoulder, and 13-foot median. An access road is proposed on each side with one 11-foot lane, 7-foot buffered bike lane and 6-foot sidewalk (**Figure 4-7**). This Alternative was deemed not viable due to access impacts to adjacent properties and the steep profile grade required to meet existing grade before the I-95 interchange.

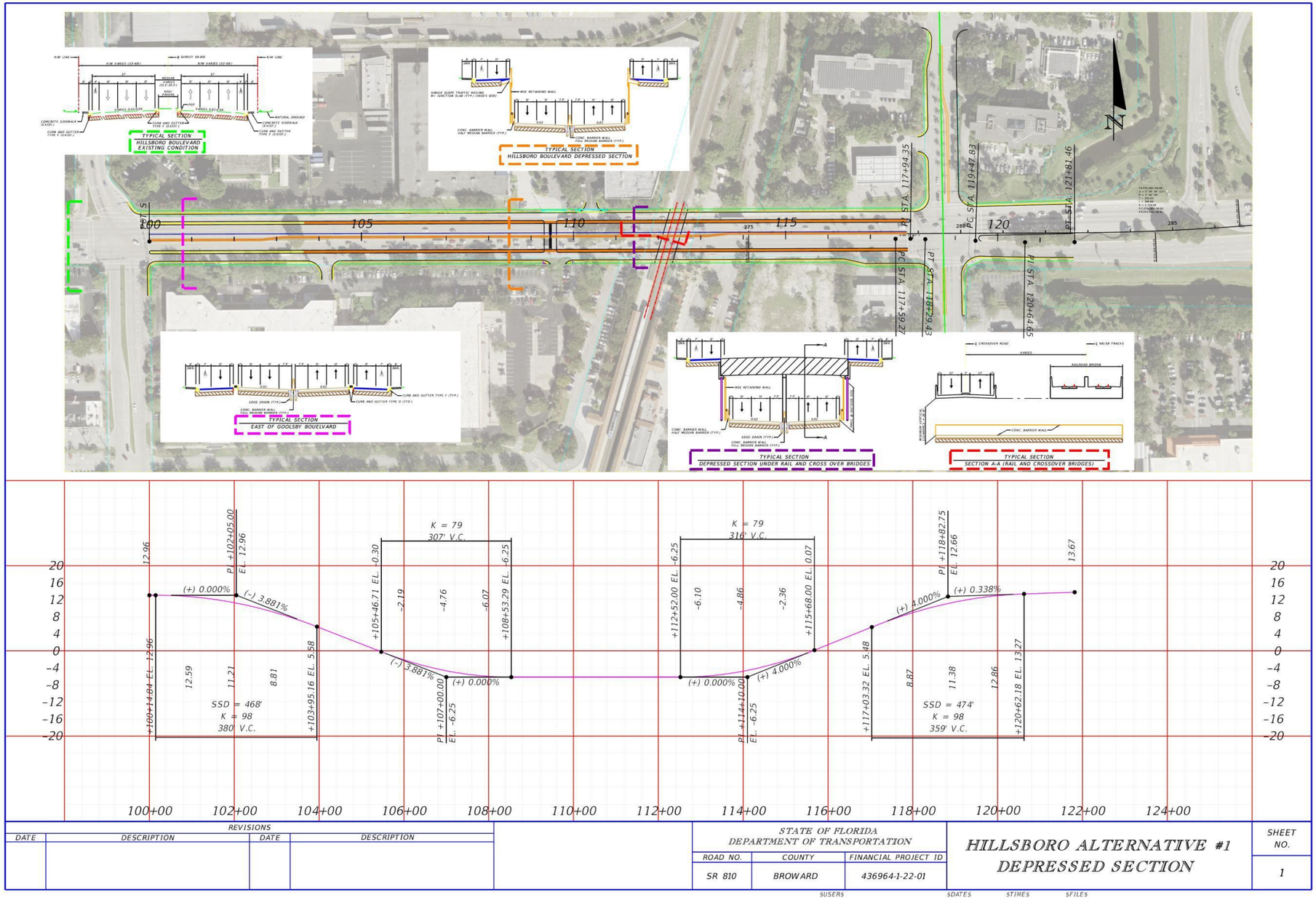

Figure 4 – 6: Hillsboro Boulevard Alternative 1

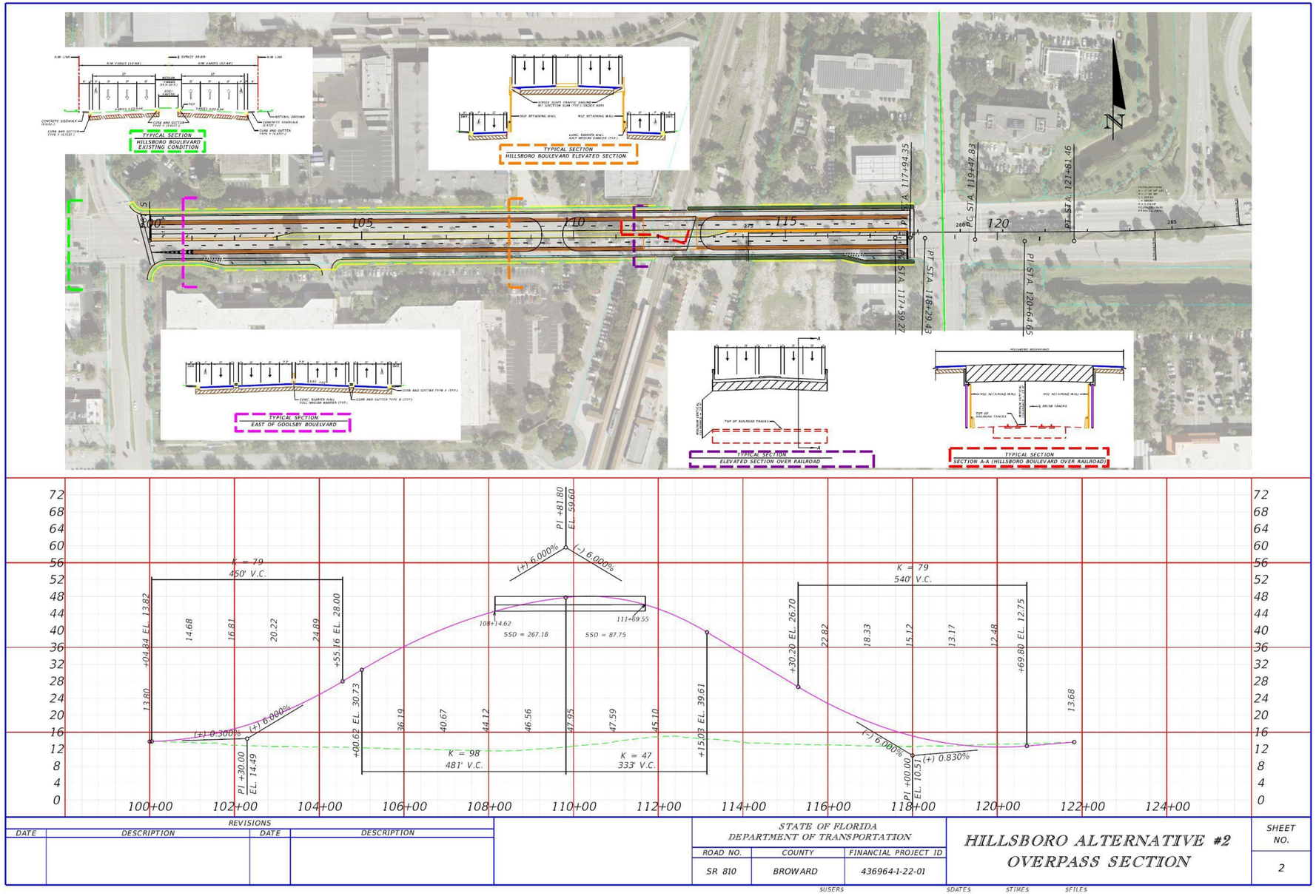

Figure 4 – 7: Hillsboro Boulevard Alternative 2

As discussed above, Alternatives 1 and 2 along Hillsboro Boulevard evaluated a depressed profile and an elevated section from Goolsby Boulevard to SW 12th Avenue but were considered non-viable due to significant impacts to property access, ROW, utilities, and major temporary traffic control impacts for both the railroad tracks and Hillsboro Boulevard. Therefore, the proposed improvements along Hillsboro Boulevard are limited to the ramp terminals.

The improvements include providing a two-lane northbound exit ramp with a signal controlled and expanded storage for a triple-left turn movement for the northbound to westbound egress ramp terminal while maintaining the dual right turn movement for the eastbound traffic. This improvement resulted in the elimination of the northbound off-ramp loop to westbound Hillsboro Boulevard combining both northbound egress ramps into one location. In addition, the northbound on-ramp from westbound Hillsboro Boulevard was realigned to be within the proximity of I-95. A new configuration is proposed for the eastbound to southbound and the westbound to southbound on-ramp to minimize the weaving maneuvers within the interchange area.

4.3.4 Bridge Structure Improvements

With either Alternative, the existing bridges were evaluated to determine if widening or replacement is required. Where feasible, the widening or retrofitting of existing bridges is recommended. All existing bridges except for I-95 northbound over Hillsboro Boulevard are determined to be replaced due to proposed roadway geometrics and alignments. The I-95 northbound overpass over Hillsboro Boulevard is to remain in place.

Within the limits of the PD&E study, twenty-seven (27) new bridges for the Preferred Alternative are proposed. The respective locations of the proposed bridges are depicted in **Figures 4-8** through **4-10**.

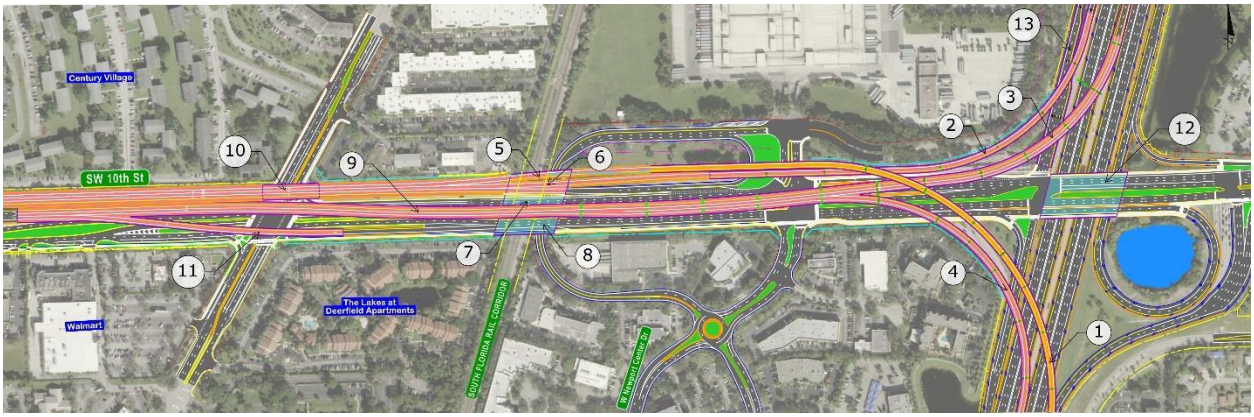

Figure 4 - 8: Proposed Bridge Locations (1 of 3)

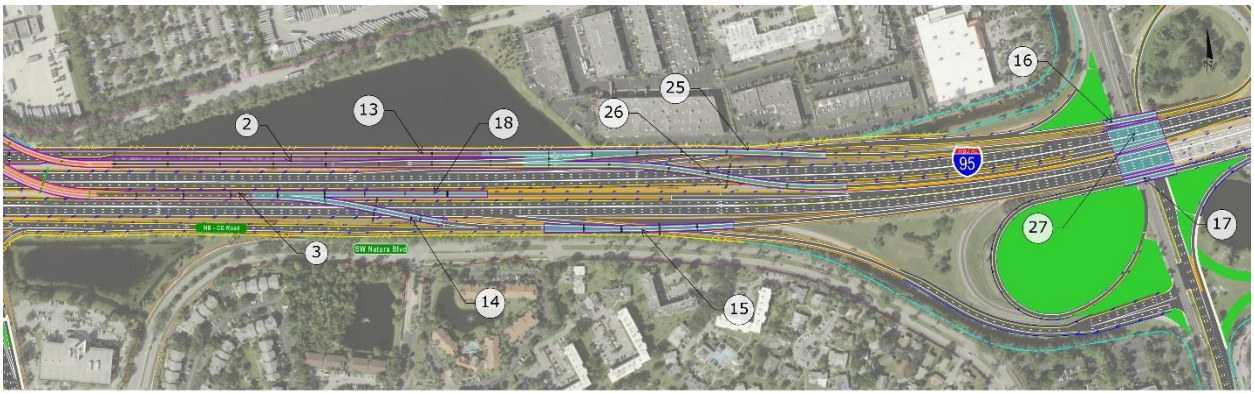

Figure 4 - 9: Proposed Bridge Location (2 of 3)

Figure 4 - 10: Proposed Bridge Locations (3 of 3)

The proposed bridges are divided into the following categories:

- Flyovers of direct connect ramps between SW 10th Street and I-95 (4 new bridges)
- Elevated viaduct (1 new bridge)
- Interchanges/Grade separation (16 new bridges)
- Braided ramp (6 new bridges)

Please referto the Preliminary Engineering Report for details of the engineering analysis performed for these bridges.

5.0 PROTECTED SPECIES AND HABITAT

5.1 Introduction

The project study area was evaluated for potential occurrences of federally listed and state-listed plant and animal species in accordance with Section 7 of the ESA of 1973, as amended; the Fish and Wildlife Conservation Act; the Migratory Bird Treaty Act; Part 2, Chapter 16 of the FDOT PD&E Manual; and Chapters 5B-40 and 68A-27, F.A.C. It is important to note that all federally listed species are also considered state-listed species. The project study area was also evaluated for the occurrence of federally designated Critical Habitat as defined by Congress in 50 C.F.R. 17. Based on this evaluation, it was determined that no federally designated Critical Habitat is present within the limits of the Build Alternatives.

The project was screened through the ETDM Process (ETDM Project #14244) in 2015 (Screening Summary Report re-published on July 11, 2016). During this time, the FWS and FWC commented on potential effects of the project to wildlife and habitat resources. Both agencies indicated that the project may contain suitable wood stork (*Mycteria americana*) foraging habitat. The FWC indicated that the following federally listed species may occur within or adjacent to the project study area: American alligator (*Alligator mississippiensis*) and eastern indigo snake (*Drymarchon corais couperi*). The FWC further indicated that the following state-listed species have potential to utilize habitats within the project study area: gopher tortoise (*Gopherus polyphemus*) and least tern (*Sternula antillarum*). The FWC also indicated that the following additional species have the potential to utilize habitats within the project study area: gopher frog (*Lithobates capito*), Florida burrowing owl (*Athene cunicularia floridana*), limpkin (*Aramus guarauna*), snowy egret (*Egretta thula*), little blue heron (*Egretta caerulea*), tricolored heron (*Egretta tricolor*), roseate spoonbill (*Platalea ajaja*), and white ibis (*Eudocimus albus*). The FWC added that Florida burrowing owls have been documented within the infield regions of the I-95 and Glades Road interchange north of the project limits; this species may use similar habitat within the infield regions of the project study area.

The project is located within the FWS Consultation Areas for the Everglade snail kite (*Rostrhamus sociabilis plumbeus*) and the wood stork, and falls within the core foraging areas (CFA) of four (4) active nesting wood stork colonies.

The species referenced above, along with additional state and/or federal-listed wildlife and plant species that may be affected by the project, are detailed in the following sections.

5.2 Field Review

Field survey methods for specific habitat types and target species were developed based on the results of database searches, preliminary field reviews, review of aerial photography, and soil surveys. Environmental concerns expressed by ETAT members during the ETDM Programming Screen review were considered when identifying target species and developing survey methods. Limited pedestrian surveys were conducted within suitable gopher tortoise habitats identified within the project study area to assess the presence of burrows. Wetland and surface water habitats were visually scanned for the presence of protected wading bird species, and areas with dense or scattered canopy were examined for utilization by other avian species. General pedestrian surveys were also conducted within appropriate habitats to assess the presence of listed/protected plant species within the project study area.

5.3 Species Occurrence and Effect Determinations

Table 5-1 lists the state and federally listed wildlife species that occur in Broward County based on the databases and documents previously referenced. Each species listed in the table below was assigned a potential for occurrence within the project study area based on data reviews, field observations, presence and quality of suitable habitat, and the species' known ranges. Each species was assigned a none, low, moderate, or high likelihood for occurrence within the project study area based on the following:

- **None** – The project is outside of the species' known range or the project is within the species' range; however, no suitable habitat for or previous documentation of this species occurs within or adjacent to the project study area, and it was not observed during the field reviews.

- **Low** – The project is within the species' range, and minimal or marginal quality habitat exists within or adjacent to the project study area; however, there are no documented occurrences of the species in the vicinity of the project, and it was not observed during the field reviews.

- **Moderate** – The project is within the species' range and suitable habitat exists within or adjacent to the project study area; however, there are no documented occurrences of the species, and it was not observed during the field reviews.

- **High** – The project is within the species' range, suitable habitat exists within or adjacent to the project buffer, there is at least one documented occurrence of the species within the project study area, and/or the species was observed during the field reviews.

Table 5 - 1: Listed/Protected Wildlife Species, Designation, and Potential Occurrence

Species	Common Name	Federal Status	State Status	Habitat	Potential Occurrence	Effect Determination
Reptiles						
Crocodylus acutus	American crocodile	T	FT	Brackish waters and coastal mangrove swamps, canals, and rivers	Low	May Affect, Not Likely to Adversely Affect
Drymarchon corais couperi	Eastern indigo snake	T	FT	Various types of upland and wetland habitats, gopher tortoise burrows	Low	May Affect, Not Likely to Adversely Affect
Gopherus polyphemus	Gopher tortoise	C(1)	ST	Xeric habitats	Low	No Effect Anticipated
Lithobates capito	Gopher frog	NL(2)	NL	Longleaf pine, xeric oak, sandhills, upland pine forest, scrub, xeric hammock, mesic and scrubby flatwoods, dry prairie, and mixed hardwood-pine communities	Low	No Effect Anticipated
Birds						
Aphelocoma coerulescens	Florida scrub-jay	T	FT	Inhabits fire dominated, low- growing, oak scrub habitat	None	No Effect
Athene cunicularia floridana	Florida burrowing owl	NL	ST	Dry prairies, open grassland	Low	No Effect Anticipated
Calidris canutus rufa	Red knot	T	FT	Atlantic and bay beaches and mudflats	None	No Effect

Species	Common Name	Federal Status	State Status	Habitat	Potential Occurrence	Effect Determination
Charadrius melodus	Piping plover	T	FT	Sandy beaches, sand flats, and mudflats along coastal area.	None	No Effect
Egretta caerulea	Little blue heron	NL	ST	Coastal marshes, freshwater marshes, wet prairies, mangroves, sand and mud flats	Moderate	No Effect Anticipated
Egretta tricolor	Tricolored heron	NL	ST	Coastal marshes, freshwater marshes, wet prairies, mangroves, sand and mud flats	High	No Adverse Effect Anticipated
Falco sparverius paulus	Southeastern American kestrel	NL	ST	Open habitats, dry prairies, pine flatwoods	Low	No Effect Anticipated
Grus canadensis pratensis	Florida sandhill crane	NL	ST	Dry prairies, freshwater marshes, and wet prairies	Low	No effect anticipated
Haliaeetus leucocephalus	Bald eagle	NL(3)	NL	Large bodies of open water with an abundant food supply	None	No Effect Anticipated
Mycteria americana	Wood stork	T	FT	Coastal marshes, freshwater marshes, wet prairies, cypress swamps, hardwood swamps, and mangrove swamps	Moderate	May Affect, Not Likely to Adversely Affect
Grus americana	Whooping crane	E	FE	Wetlands, mudflats, marshes, fields, shallow lakes and lagoons	Low	May Affect, Not Likely to Adversely Affect
Picoides borealis	Red-cockaded woodpecker	E	FE	Fire-maintained pine flatwoods with an open understory	None	No Effect

Species	Common Name	Federal Status	State Status	Habitat	Potential Occurrence	Effect Determination
Platalea ajaja	Roseate spoonbill	NL	ST	Ditches, canals, freshwater marshes, shallow ponds, and forested wetlands	Low	No Effect Anticipated
Rostrhamus sociabilis plumbeus	Everglade snail kite	E	FE	Large open freshwater marshes and lakes with shallow water	None	No Effect
Sternula antillarum	Least tern	NL	ST	Seacoasts, beaches, bays, estuaries, lagoons, lakes, and rivers	Low	No Effect Anticipated
Aramus guarauna	Limpkin	NL(2)	NL	Shallows along rivers, streams, lakes, and in marshes, swamps, and sloughs	High	No Effect Anticipated
Egretta thula	Snowy egret	NL(2)	NL	Shallow estuarine areas including mangroves, shallow bays, saltmarsh pools, and tidal channels	Moderate	No Effect Anticipated
Eudocimus albus	White ibis	NL(2)	NL	Coastal marshes and wetlands	Moderate	No Effect Anticipated
Mammals						
Peromyscus polionotus niveiventris	Southeastern beach mouse	T	FT	Sea oats zone of primary coastal dunes	None	No Effect
Puma concolor	Puma	T	T(S/A)	Large wetlands, forested communities, improved areas	None	No Effect
Puma concolor coryi	Florida panther	E	FE	Large wetlands, forested communities, improved areas	None	No Effect

Species	Common Name	Federal Status	State Status	Habitat	Potential Occurrence	Effect Determination
Trichechus manatus latirostris	West Indian manatee	T	FT	Marine, brackish, and freshwater coastal and riverine areas	None	No Effect
Insects						
Strymon acis bartrami	Bartram's hairstreak butterfly	E	FE	Occurs only within pine rocklands that retain its only known larval hostplant, pineland croton	None	No Effect
Anaea troglodyta floridalis	Florida leafwing butterfly	E	FE	Occurs only within pine rocklands that retain its only known larval hostplant, pineland croton	None	No Effect
Cyclargus thomasi bethunebakeri	Miami blue butterfly	E	FE	Tropical hardwood hammocks, no known mainland population of this species	None	No Effect

F = Federally Listed / S = State Listed / E = Endangered / T = Threatened / T(S/A) = Threatened due to similar appearance / NL = Not Listed

(1) The gopher tortoise is currently a candidate species for federal protection under the ESA.

(2) The gopher frog, limpkin, snowy egret, and white ibis are no longer listed in Florida as of January 11, 2017. However, these species are part of the FWC Florida's Imperiled Species Management Plan, as amended (December 2018).

(3) The bald eagle is neither state nor federally listed; however, this species is federally protected by the Bald and Golden Eagle Act and the Migratory Bird Treaty Act. The bald eagle is also managed in Florida by the FWC's bald eagle rule (FAC 68A-16.002).

Table 5-2 below provides the occurrence probability for federal and state listed/protected plant species. Although none of the federal-listed plant species listed below have a potential to occur in the project area due to lack of suitable habitat, they are included because they are mentioned in the FWS' IPaC resource list (FWS 2020) generated for this project (see **Appendix D**). The state-listed plant species were identified based on review of the FNAI database.

Table 5 - 2: Listed/Protected Plant Species, Designation, and Potential Occurrence

Species	Common Name	Federal Status	State Status	Habitat	Potential Occurrence	Effect Determination
Acrostichum aureum	Golden leather fern	NL	ST	Brackish and freshwater marshes	None	No Effect Anticipated
Aeschynomene pratensis var. *pratensis*	Meadow jointvetch	NL	SE	Dome swamps and marl prairies	None	No Effect Anticipated
Asplenium dentatum	American toothed spleenwort	NL	SE	Tropical hardwood hammocks and on limestone outcrops and walls of limesinks	None	No Effect Anticipated
Asplenium serratum	American bird's nest fern	NL	SE	Fallen logs and tree bases in swamps and wet hammocks	None	No Effect Anticipated
Euphorbia (=*Chamaesyce*) *cumulicola*	Sand-dune spurge	NL	SE	Coastal scrub and stabilized dunes.	None	No Effect Anticipated
Conradina grandiflora	Large-flowered rosemary	NL	ST	Sandy flats or sandhills, sand pine, ancient dunes of shores; mostly near the coast	None	No Effect Anticipated
Ctenitis sloanei	Florida tree fern	NL	SE	Inland hammock forests with deep shade and adequate soil moisture	None	No Effect Anticipated

Species	Common Name	Federal Status	State Status	Habitat	Potential Occurrence	Effect Determination
Cucurbita okeechobeensis ssp. *okeechobeensis*	Okeechobee gourd	E	FE	Wetlands, lake and pond edges.	None	No Effect
Dalea carthagenesis var. floridana	Florida prairie-clover	E	FE	Pine rockland, marl prairie, coastal berm, and rockland hammock habitats	None	No Effect
Epidendrum nocturnum	Night scented orchid	NL	SE	Tree trunks, branches, and stumps in hammocks, and slough	None	No Effect Anticipated
Heliotropium gnaphalodes	Sea rosemary	NL	SE	Coastal uplands, dunes.	None	No Effect Anticipated
Jacquemontia reclinata	Beach jacquemontia	E	FE	Open areas of crest and lee sides of dunes, hammocks or coastal strands.	None	No Effect
Lechea cernua	Nodding pinweed	NL	ST	Deep sands, ancient dunes with green scrub oaks	None	No Effect Anticipated

Species	Common Name	Federal Status	State Status	Habitat	Potential Occurrence	Effect Determination
Okenia hypogaea	Burrowing four-o'clock	NL	SE	Ocean side of coastal dunes	None	No Effect Anticipated
Ophioglossum palmatum	Hand fern	NL	SE	Old leaf basins of cabbage palms in maritime hammocks and wet hammocks.	None	No Effect Anticipated
Polygala smallii	Tiny polygala	E	FE	Pine rockland, scrub, high pine, and open coastal spoil	None	No Effect
Tillandsia flexuosa	Banded wild-pine	NL	ST	Grows on shrubs and trees in wetlands and dry broadleaf evergreen formation	None	No Effect Anticipated
Trichostigma octandrum	Hoop vine	NL	SE	Coastal habitat and Everglades	None	No Effect Anticipated
Zanthoxylum coriaceum	Biscayne prickly ash	NL	SE	Coastal hammocks, beaches, maritime woodlands and scrub with limestone substrate	None	No Effect Anticipated

F = Federally Listed / S = State Listed / E = Endangered / T = Threatened / NL = Not Listed

5.3.1 State and Federally Listed/Protected Wildlife Species

5.3.1.1 Federally Listed Species

Reptiles

American Crocodile (*Crocodylus acutus*): The American crocodile is federally listed as threatened due to human activities and coastal development. American crocodiles inhabit brackish or saltwater, and can be found in ponds, coves, canals, and creeks in mangrove swamps in southern Florida. Each Build Alternative contains very little suitable habitat for this species; no individuals have been documented within one mile of the project study area and none were observed during the field reviews. Therefore, this species was assigned a 'low' probability of occurrence within the project study area.

The proposed surface water features observed within the study area mainly consist mainly of excavated stormwater management facilities (swales, ditches and retention areas) associated with the existing roadway network. However, potential habitat does exist within close proximity to the study area (i.e., the Hillsboro Canal and its tributaries). No net loss of functions and values to wetlands and other surface waters that may provide suitable habitat for this species will occur. Unavoidable impacts to the existing stormwater features are anticipated to be compensated through construction of the new stormwater system. The project area is highly urbanized and far enough north from known crocodile habitat that it is unlikely to affect crocodile nesting areas. Therefore, the FDOT has determined that the proposed project, regardless of the selected Build Alternative will have "*May Affect, but is Not Likely to Adversely Affect*" on the American crocodile.

Eastern Indigo Snake (*Drymarchon corais couperi*): The eastern indigo snake is listed as threatened by the FWS due to extensive habitat loss and population declines. This species utilizes a variety of habitats including swamps, wet prairies, and pinelands and may also seek shelter in gopher tortoise burrows to escape hot or cold ambient temperatures within its range. While marginal quality suitable habitat is present within the infield regions of

the project study area, this species has not been documented within or adjacent to the Build Alternatives, and no eastern indigo snakes were observed during the field reviews. For these reasons, this species was assigned a 'low' probability of occurrence within the project study area.

To increase protection of this species during construction, the FDOT will adhere to the **most** current version of the *Standard Protection Measures for the Eastern Indigo Snake* (included in **Appendix E**). As such, when applying the project specifics to the *Eastern Indigo Snake Programmatic Effect Determination Key – Revised July 2017* (FWS 2017), FDOT has determined that implementation of the Build Alternatives will have "*May Affect, but is Not Likely to Adversely Affect*" on the eastern indigo snake.

Birds

Florida Scrub Jay (*Aphelocoma coerulescens*): The Florida scrub jay is federally listed as threatened due primarily to habitat loss and degradation. This species is typically found in early successional stages of xeric oak communities that are occasionally burned. Its preferred habitat consists of scrub oaks that are less than 10 feet tall with open sand and grass patches. The project study area does not contain suitable scrub jay habitat, this species has not been documented within one mile of the Build Alternatives, and none were observed during the field reviews. For these reasons, the Florida scrub jay has been assigned a probability occurrence of 'none'. As such, it has been determined that the Build Alternatives will have "*No Effect*" on the Florida scrub jay.

Piping Plover (*Charadrius melodus*): The piping plover is listed as threatened by FWS due to habitat loss and degradation. Piping plovers use wide, flat, open, sandy beaches with very little grass or other vegetation. Nesting territories often include small creeks or wetlands. The project study area does not contain suitable nesting habitat for this species. The piping plover has not been documented within one mile of the project site, and none were observed during the field reviews. Therefore, this species has been assigned a probability of occurrence of none within the project study area.

The FDOT has determined that the proposed project, regardless of the selected Build Alternative, will have "*No Effect*" on the piping plover.

Red Knot (*Calidris canutus rufa*): The red knot is listed as threatened by FWS due to loss of foraging habitat along its migratory path. The survival of this species depends on the availability of suitable habitat, food and weather conditions at numerous sites across the Western Hemisphere, from the extreme south of Tierra del Fuego to the far north of the central Canadian Arctic. These migratory birds need to encounter favorable habitats, food and weather conditions within narrow seasonal windows along migration stopovers between wintering and breeding areas. This species is highly dependent on horseshoe crab populations; particularly along the northeastern Atlantic coast. The project study area does not contain suitable red knot foraging habitat, this species has not been documented within one mile of the Build Alternatives, and none were observed during the field reviews. For these reasons, the red knot has been assigned a probability occurrence of 'none'. As such, it has been determined that the Build Alternatives will have "*No Effect*" on the red knot.

Whooping Crane (*Grus americana*): The whooping crane is a critically imperiled North American crane species with fewer than 250 birds in a single wild population that migrates between northwestern Canada and the Gulf Coast of Texas. The whooping crane is federally listed as endangered due to declining populations from overhunting and habitat loss. Suitable habitat for this species consists of wetlands, mudflats, marshes, fields, shallow lakes and lagoons. The project study area contains marginal quality suitable habitat within the stormwater retention ponds; however, none have been documented within or adjacent to either Build Alternative, and none were observed during the field reviews. Therefore, this species has been assigned a 'low' probability to occur within the project study area. Additionally, any impacts to existing stormwater ponds potentially utilized by this species will be replaced in-kind as part of the upgraded stormwater management system design. Therefore; it has been determined that implementation of either Build Alternative will have "*May Affect, but is Not Likely to Adversely Affect*" on the whooping crane.

Wood Stork (*Mycteria americana*): The wood stork is federally listed as threatened due to a sharp decline in breeding populations. This opportunistic wading bird utilizes various open hydric pine- cypress habitats, herbaceous marshes, and man-made wetlands and canals. A specialized method of feeding commonly referred to as groping limits its foraging ability to shallow waters with dense concentrations of small fish. Wood storks use freshwater and estuarine habitats for nesting, foraging, and roosting. They are typically colonial nesters and construct their nests in medium to tall trees located within wetlands or on islands.

The FWS has defined an area with a radius of 18.6 miles (30 kilometers) from nesting wood stork colonies as the Core Foraging Area (CFA) for those colonies. The project falls within the CFA of four active nesting wood stork colonies (see **Figure 5-1** for wood stork CFA locations). As defined by the FWS, suitable wood stork foraging habitat includes wetlands and surface waters with relatively calm water, uncluttered by dense thickets of aquatic vegetation, and have permanent or seasonal water depths between 2 and 15 inches. Suitable foraging habitat is present within the Build Alternatives; however, this species has not been documented within or adjacent to the project study area, and none were observed during the field reviews. Therefore, the wood stork was assigned a 'moderate' probability of occurrence within the project study area. Each Build Alternative would result in impacts to surface waters that may be considered suitable wood stork foraging habitat; however, these surface waters are excavated conveyance features associated with the I-95 stormwater management system, and in- kind replacement will be provided for impacts to these features. In accordance with the FWS South Florida Programmatic Concurrence (FWS 2010), impacts to suitable wood stork foraging habitat will be replaced in- kind or mitigated through the purchase of wetland credits from a "Service- approved" wetland mitigation bank. Based on this information, it is anticipated that implementation of the Build Alternatives "*May Affect, but is Not Likely to Adversely Affect*" the wood stork.

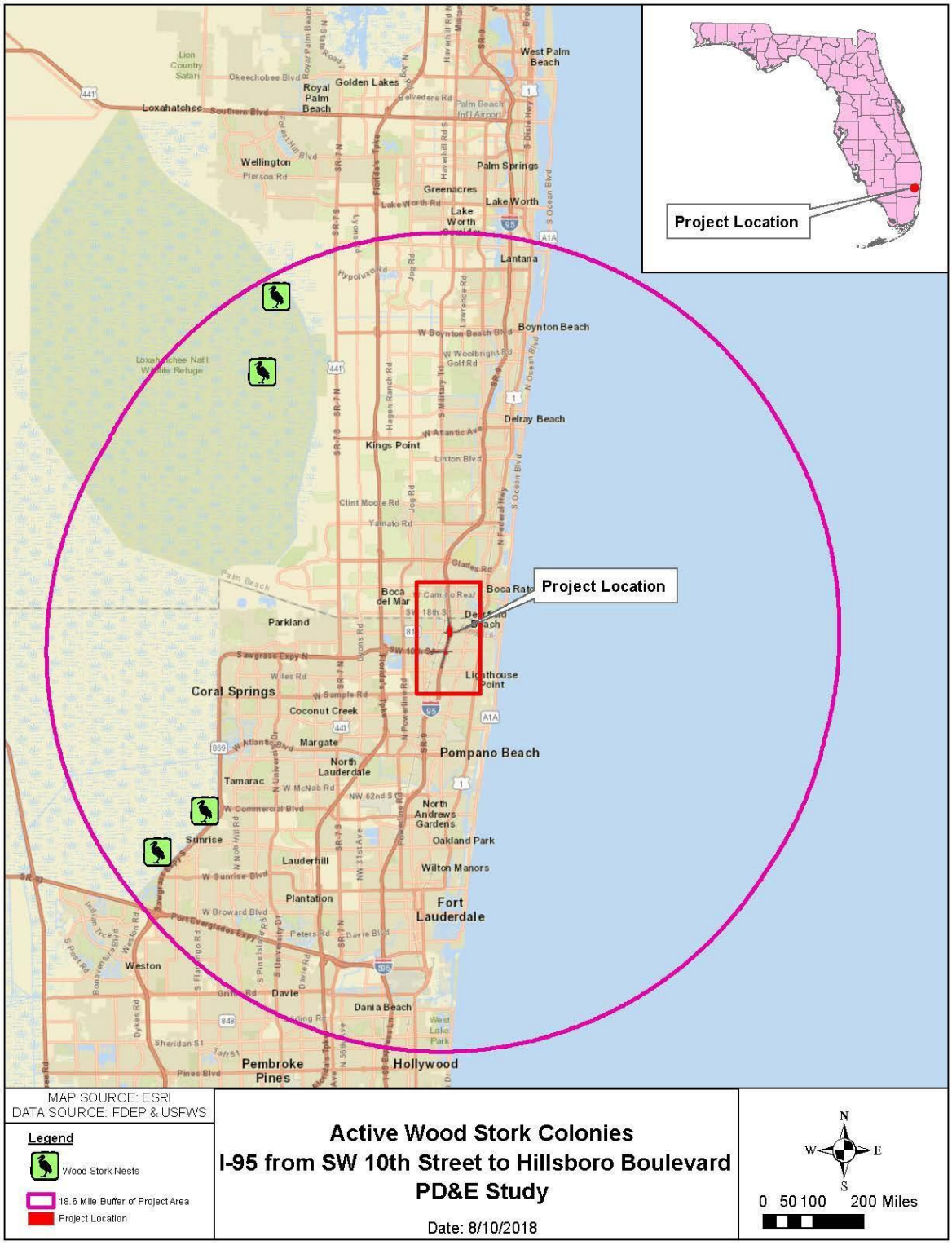

Figure 5 - 1: Active Nesting Wood Stork Colonies

Red-Cockaded Woodpecker (*Picoides borealis*): The red-cockaded woodpecker is federally listed as endangered. This species inhabits fire-maintained pine flatwoods with an open understory and requires living, mature pine trees for nesting. No fire-maintained pine flatwoods habitat exists within or adjacent to the project study area. There are no documented occurrences of this species within the vicinity of the Build Alternatives, and none were observed during field reviews. Therefore, the red-cockaded woodpecker was assigned a probability for occurrence of 'none', and FDOT has determined that implementation of the Build Alternatives would have "*No Effect*" on the red-cockaded woodpecker.

Everglade Snail Kite (*Rostrhamus sociabilis plumbeus*): The Everglade snail kite is federally listed as endangered due to habitat degradation and loss, primarily from development and alteration of shallow freshwater wetlands throughout the south and central regions of Florida. This species prefers large open freshwater marshes and shallow lakes with emergent vegetation and is highly dependent upon apple snails (*Pomacea paludosa*) caught at the surface of the water as its food source. The Everglade snail kite has not been documented within one mile of the project study area, no suitable habitat is present, and none were observed during field reviews. Therefore, this species has been assigned a probability occurrence of 'none', and it is anticipated that implementation of the Build Alternatives will have "*No Effect*" on the Everglade snail kite.

Mammals

Beach Mouse (*Peromyscus polionotus niveintris*): The beach mouse is listed as threatened by the FWS due to extensive habitat loss from commercial and residential construction along the Atlantic coast. This species resides in dry, sandy coastal habitats along the east coast of Florida. Primary habitat of the beach mouse is the sea oats zone of primary coastal dunes. The beach mouse has not been documented within one mile of the project study area, no suitable habitat is present, and none were observed during field reviews. Therefore, this species has been assigned a probability occurrence of 'none', and it is anticipated that the Build Alternatives will have "*No Effect*" on the beach mouse.

Puma (*Puma concolor*): The puma (mountain lion) is listed as threatened due to similarity of appearance to the endangered Florida panther. Due to the location of the project within a densely developed urban area, no suitable habitat is present for this species. Additionally, none have been documented within or adjacent to the Build Alternatives, and none were observed during the field reviews. For these reasons, the puma was assigned a probability occurrence of 'none', and it is anticipated that implementation of the Build Alternatives will have "*No Effect*" on the puma.

Florida panther (*Puma concolor coryi*): The Florida panther is federally listed as endangered due primarily to habitat fragmentation and loss. They are particularly sensitive to habitat fragmentation because of their expansive movements and extensive spatial requirements (Harris 1984). The Focus Area represents regions of South Florida containing suitable panther habitat in which development could adversely affect the panther. The Focus Area covers portions of Charlotte, Glades, Hendry, Lee, Collier, Palm Beach, Broward, Miami-Dade, and Monroe Counties, as well as the southern portion of Highlands County. The project occurs entirely outside of the FWS Focus Area for this species and does not contain suitable habitat. Additionally, none were observed during the field reviews. Therefore, it is anticipated that the proposed project, regardless of the selected Build Alternative, will have "*No Effect*" on the Florida panther.

West Indian Manatee (*Trichechus manatus latirostris):* The West Indian manatee is federally listed as threatened due to human activities and habitat loss. The West Indian manatee inhabits marine, brackish, and freshwater coastal and riverine areas. The study area contains marginal habitat for this species consisting of surface water features, which are connected surficially to the Hillsboro Canal located north of and outside of the project limits. During the field reviews conducted for the project a permanent water control structure was observed within the adjacent secondary canal/ditch west of I-95, just south of the Hillsboro Canal. The control structure inhibits the movement of manatees southward beyond the limits of the structure (i.e., prohibits manatees from entering the surface water features adjacent to the project corridor). In addition, mechanical gates exist where this surface water feature crosses Hillsboro Boulevard on the south side

of the road, further excluding the potential for manatees to exist within these surface water features. Furthermore, there is no apparent surface water connection or outlet south of the Hillsboro Canal for these surface waters and no manatees were observed during the field reviews. Since exclusion structures exist inhibiting the manatee from accessing the surface water features adjacent to the project limits, this species was determined to have an occurrence probability of 'none', and the proposed alternatives will have *"No Effect"* on this species.

Insects

Bartram's hairstreak butterfly (*Strymon acis bartrami*): The Bartram's hairstreak butterfly is a federally endangered butterfly that is native to the pine rockland habitat of south Florida. Over time, their populations have declined throughout their historic range and their distribution is now extremely limited. The reasons for this decline may include destruction of pine rockland habitat, introduction of exotic plant and insect species, fire suppression or exclusion, use of insecticides for mosquito control, and collecting. At rest, this species is easy to recognize by the broad white bands with a black edge that can be seen when the wings are closed. Bartram's scrub-hairstreaks seldom fly very far from their host plant, pineland croton (*Croton linearis*). The project study area does not contain suitable Bartram's hairstreak butterfly habitat, this species has not been documented within one mile of the Build Alternatives, and none were observed during the field reviews. For these reasons, the Bartram's hairstreak butterfly has been assigned a probability occurrence of 'none'. As such, it has been determined that the Build Alternatives will have *"No Effect"* on the Bartram's hairstreak butterfly.

Florida leafwing butterfly (*Anaea troglodyta floridalis*): The federally endangered Florida leafwing is a butterfly that is native to the pine rockland habitat of south Florida. Over time, their populations have declined throughout their historic range and their distribution is now extremely limited. The reasons for this decline may include destruction of pine rockland habitat, introduction of exotic plant and insect species, fire suppression or exclusion, use of insecticides for mosquito control, and collecting. In flight, the bright

orange upper wings make this species easy to spot. However, when at rest, the cryptic coloration of the lower wings makes this species look like a dead leaf, giving the Florida leafwing its common name. The project study area does not contain suitable Florida leafwing butterfly habitat, this species has not been documented within one mile of the Build Alternatives, and none were observed during the field reviews. For these reasons, the Florida leafwing butterfly has been assigned a probability occurrence of 'none'. As such, it has been determined that the Build Alternatives will have "*No Effect*" on the Florida leafwing butterfly.

Miami blue butterfly (*Cyclargus (=Hemiargus) thomasi bethunebakeri*): The federally endangered Miami blue is a butterfly that is inhabits tropical hardwood hammocks, tropical pine rocklands, and beachside scrub in Florida. The State Management Plan for the Miami blue lists four present threats: habitat loss and degradation; habitat fragmentation and group isolation; mortality; and invasive species. Some or all of these threats may have played a role in reducing the species' original range to its very small present range. The wings of the Miami blue butterfly are bright blue on the back with a gray underside. Recent populations of Miami blue butterflies are known to have fed primarily on three plant species: balloonvine (*Cardiospermum* spp.), gray nickerbean (*Caesalpinia bonduc*), and blackbead (*Pithecellobium* spp.). These species have been the major host plants for mainland, Lower Keys, and Key West National Wildlife Refuge populations. The project study area does not contain suitable Miami blue butterfly habitat, this species has not been documented within one mile of the Build Alternatives, and none were observed during the field reviews. For these reasons, the Miami blue butterfly has been assigned a probability occurrence of 'none'. As such, it has been determined that the Build Alternatives will have "*No Effect*" on the Miami blue butterfly.

5.3.1.2 State-Listed Species

Reptiles

Gopher Tortoise (*Gopherus polyphemus*): The gopher tortoise is state-listed as threatened due to habitat degradation and declining number of

individuals. Gopher tortoises require well-drained, loose sandy soils for burrowing, and low-growing herbs and grasses for food. These conditions can be found in a variety of habitats including dry prairies, pine flatwoods, and disturbed or maintained sites. Marginal quality suitable habitat for the gopher tortoise is present within the Build Alternatives; however, this species has not been documented within or adjacent to the Build Alternatives, and none were observed during the field reviews. For these reasons, the gopher tortoise was assigned a 'low' probability of occurrence within the project study area.

Current FWC regulations require a permit for any ground disturbance activity occurring within 25 feet of a potentially occupied gopher tortoise burrow. Based on current FWC regulations, any gopher tortoises located within 25 feet of the project must be relocated to a permitted recipient site. The selected Build Alternative will be surveyed for potential gopher tortoise utilization during the design and permitting phase. If gopher tortoises or potentially occupied burrows are found within the project area, FDOT will coordinate with the FWC to secure all permits needed to relocate the tortoises and, if necessary, any additional listed species found to be utilizing the burrows. Therefore, it is anticipated that implementation of the Build Alternatives will have "*No adverse effect anticipated*" on the gopher tortoise.

Birds

Florida Burrowing Owl (*Athene cunicularia floridana*): The Florida burrowing owl is state- listed as threatened due to ongoing habitat degradation and loss. This species inhabits open native dry prairies and sandhill communities, as well as ruderal areas comprised of short, herbaceous groundcover. Although the Build Alternatives contain marginal quality suitable habitat, there are no documented occurrences of the Florida burrowing owl within or adjacent to the project study area, and no individuals or burrows were observed during the field reviews. Therefore, this species was assigned a 'low' probability of occurrence within the project study area.

The FWC noted that this species has been observed within infield regions along I-95 and may occur within the project study area. As such, the selected Build Alternative will be surveyed prior to construction. If Florida burrowing

owls or burrows are later identified within the project area, FDOT will coordinate with the FWC to implement appropriate protection measures for this species. Based on this information, the Build Alternatives are anticipated to have "*No effect anticipated*" on the Florida burrowing owl.

Little Blue Heron (*Egretta caerulea*) and Tricolored Heron (*Egretta tricolor*): The little blue heron and the tricolored heron, both of which are listed as threatened by the FWC, are discussed collectively since they occupy similar habitats and have similar feeding patterns. Their preferred habitats consist of a variety of natural and man-made wetlands, such as ditches, canals, freshwater marshes, shallow ponds, and forested wetlands. The populations of both species have declined due to destruction of wetlands for development and draining of wetlands for flood control and agriculture. The primary concern for impacts to these wading birds is the loss of foraging habitat (i.e., wetlands). The little blue heron was determined to have a 'moderate' probability of occurrence due to the presence of suitable habitat. During the field reviews, a tricolored heron was observed within the vicinity of Surface Water 8; therefore, this species was determined to have a 'high' probability of occurrence within the project study area.

No heron rookeries are documented or otherwise known in the project vicinity; however, suitable foraging habitat for both the little blue heron and tricolored heron exists within the Build Alternatives. Any unavoidable adverse wetland and/or surface water impacts will be fully mitigated as deemed necessary pursuant to Section 373.4137, F.S. to satisfy all mitigation requirements of Part IV of Chapter 373, F.S. and 33 U.S.C. §1344 to prevent a net loss of functions and values to wetlands and other surface waters that may provide suitable habitat for this species. The proposed surface water features observed within the study area mainly consist mainly of excavated stormwater management facilities (swales, ditches and retention areas) associated with the existing roadway network. No net loss of functions and values to surface waters that may provide suitable habitat for this species will occur as unavoidable impacts to these features are anticipated to be compensated through construction of the new stormwater management system.

Based on the provision of compensatory mitigation to offset unavoidable surface water habitat impacts, the proposed project, regardless of the selected Build Alternative, is anticipated to have "*No effect anticipated*" on the little blue heron or tricolored heron.

Southeastern American Kestrel (*Falco sparverius paulus*): The Southeastern American kestrel is state-listed as threatened due to population declines. This species typically occupies woodland edges, dry prairies, and open pine flatwoods; preferring tall, dead trees or utility poles with unobstructed view for nesting. The project study area contains marginal quality suitable habitat for the Southeastern American kestrel; however, this species has not been documented within or adjacent to the project study area, and it was not observed during field reviews. Therefore, this species was determined to have a 'low' probability of occurrence within the project study area, and it is anticipated that implementation of the Build Alternatives will have "*No effect anticipated*" for the southeastern American kestrel.

Florida Sandhill Crane (*Grus canadensis pratensis*): The Florida sandhill crane is state-listed as threatened due to population declines. This species utilizes wet and dry prairies, freshwater marshes, open lawns, and agricultural areas such as pastures, crop fields, and feedlots. The primary concern for impacts to the Florida sandhill crane is the loss of nesting habitat (i.e., wetlands). The Build Alternatives contain marginal quality habitat; however, this species has not been documented within or adjacent to the project study area, and it was not observed during the field reviews. For these reasons, the Florida sandhill crane was determined to have a 'low' probability of occurrence within the project study area, and it is anticipated that implementation of the Build Alternatives will have "*No effect anticipated*" on the Florida sandhill crane.

Roseate Spoonbill (*Platalea ajaja*): The roseate spoonbill is state-listed as threatened by the FWC. Its preferred habitat types consist of a variety of natural and man-made wetlands, such as ditches, canals, freshwater marshes, shallow ponds, and forested wetlands. This wading bird primarily forages on minnows and aquatic invertebrates; occasionally feeding on plant material such as roots and stems. The roseate spoonbill population has

declined primarily due to the filling and draining of wetlands for residential and commercial development, flood control, and agricultural activities. The primary concern for impacts to wading bird species is the loss of foraging habitat (i.e., wetlands and other surface waters). Marginal quality habitat exists within the Build Alternatives; however, no roseate spoonbills have been documented within or adjacent to the project study area, and this species was not observed during field reviews. Therefore, this species was assigned a 'low' probability to occur within the project study area, and it is anticipated that implementation of the Build Alternatives will have "*No effect anticipated*" on the roseate spoonbill.

Least Tern (*Stemula antillarum*): The least tern is listed as threatened by the FWC due to loss and degradation of habitat. The preferred nesting habitat for this species is sparsely vegetated coastal beaches above the high tide line. The least tern forages in near-shore open water habitats by diving into the water after prey items. Marginal quality suitable habitat exists within the Build Alternatives and nearby within the Hillsboro Canal (outside the limits of the study area). However, no least terns have been documented within or adjacent to the project study area, and this species was not observed during field reviews. Therefore, this species was assigned a 'low' probability to occur within the project study area, and it is anticipated that implementation of the Build Alternatives will have "*No effect anticipated*" on the least tern.

5.3.2 State and Federally Listed Plant Species

5.3.2.1 Federally Listed Species

Okeechobee Gourd (*Cucurbita okeechobeensis* ssp. *Okeechobeensis*): The Okeechobee Gourd is federally listed as endangered and occurs on wetland, pond, and lake edges. The Okeechobee gourd is now restricted in the wild to two small disjunct populations- one along the St. Johns River which separates Volusia, Seminole, and Lake counties in north Florida, and a second around the shoreline of Lake Okeechobee in South Florida. Therefore, this species was determined to have an occurrence probability of 'none', and it has been determined that implementation of the Build Alternatives would have "*No Effect*" on the Okeechobee gourd.

Florida Prairie-Clover (*Dalia carthagenesis floridana*) and Tiny Polygala (*Polygala smallii*): These two species are discussed collectively due to similar habitat types; both are federally listed as endangered. Florida prairie clover is found on pine rocklands, marl prairies, coastal berms, and rockland hammock habitats. Tiny polygala occurs within pine rocklands, scrub, high pine, and open coastal spoil. Since these habitat types do not exist within or adjacent to the project corridor, both species were determined to have an occurrence probability of 'none'. Therefore, FDOT has determined that implementation of the Build Alternatives would have "*No Effect*" on Florida prairie-clover or tiny polygala.

Beach Jacquemontia (*Jacquemontia reclinata*): The beach jacqemontia is federally listed as endangered and occurs on open areas of crest and lee sides of dunes, hammocks or coastal strands. Since this habitat types does not exist within or adjacent to the project corridor, this species was determined to have an occurrence probability of 'none', and it has been determined that implementation of the Build Alternatives would have "*No Effect*" on the beach jacqemontia.

5.3.2.2 State Listed Species

Golden Leather Fern (*Acrostichum aureum*) and Hoop Vine (*Trichostigma octandrum*): These two species are discussed collectively due to similarity of habitat; the golden leather fern is state listed as threatened, and the hoop vine is state listed as endangered. The golden leather fern resides in freshwater and brackish marshes, and the hoop vine occurs in coastal habitat and the Everglades. Since neither habitat type is present within or adjacent to the project study area, both species were determined to have an occurrence probability of 'none', and FDOT has determined that implementation of the Build Alternatives would have "*No effect anticipated*" on the golden leather fern or hoop vine.

Meadow Jointvetch (*Aeschynomene pratensis var. pratensis*): The meadow jointvetch occurs in disturbed areas, woodlands, roadway edges, and stream banks. This species is state listed as endangered and was assigned a 'moderate' probability of occurrence within the project study area due to the

presence of suitable habitat. To minimize potential impacts to this species, additional vegetative surveys will be undertaken within suitable habitats, coordination with FDACS will occur (as necessary) during the project design and permitting phase, and appropriate mitigation measures will be provided for any adverse impacts. Therefore, FDOT has determined that implementation of the Build Alternatives will have "*No adverse effect anticipated*" on the meadow jointvetch.

American Toothed Spleenwort (*Asplenium dentatum*), America's Bird's Nest Fern (*Asplenium serratum*), Florida Tree Fern (*Ctenitis sloanei*), Night Scented Orchid (*Epidendrum noctumum*), Hand Fern (*Ophioglossum palmatum*), and Banded Wild Pine (*Tillandsia flexousa): These species are discussed collectively due to similarity of habitat types. All species except the banded wild pine are state listed as endangered; the banded wild pine is state listed as threatened. These plants occur in tropical hardwood forests, maritime hammocks, forested wetlands, and wet hammocks. Since these habitat types are not present within or adjacent to the project study area, all six species were determined to have an occurrence probability of 'none', and FDOT has determined that implementation of the Build Alternatives would have "*No effect anticipated*" on the American toothed spleenwort, America's bird's nest fern, Florida tree fern, night scented orchid, hand fern, or banded wild pine.

Sand Dune Spurge (*Champaesyce cumulicola*), Large Flowered Rosemary (*Conradina grandiflora*), Sea Rosemary (*Heliotropium gnaphalodes*), Nodding Pinweed (*Lechea cernua*), Burrowing Four O'Clock (*Okenia hypogaea*), and Biscayne Prickly Ash (*Zanthoxylum coriaceum*): These six species are discussed collectively due to similarity of suitable habitat types. All species except the nodding pinweed and large flowered rosemary are state listed as endangered; the nodding pinweed and large flowered rosemary are state listed as threatened. These plants can be found in coastal upland habitats such as coastal scrub, dunes, sandhill, sandy flats, sand pine, and coastal hammocks. Due to the lack of available habitat for any of these species within or adjacent to the project study area, all were determined to have a probability occurrence of 'none', and it has been determined that implementation of the Build Alternatives would have "*No*

effect anticipated" on the sand dune spurge, large flowered rosemary, sea rosemary, nodding pinweed, burrowing four o'clock, or Biscayne prickly ash.

5.3.3 Other Protected Species

Gopher Frog (*Lithobates capito*): The gopher frog is no longer federally or state listed as a protected species in Florida as of January 11, 2017, but is included in the FWC Florida's Imperiled Species Management Plan. The gopher frog inhabits longleaf pine, xeric oak, and sandhills mostly, but also occurs in upland pine forest, scrub, xeric hammock, mesic and scrubby flatwoods, dry prairie, mixed hardwood-pine communities, and a variety of disturbed habitats. This species inhabits gopher tortoise burrows, which is how its name originated. Due to the lack of available habitat for this species and the absence of gopher tortoise burrows within or directly adjacent to the project study area, this species has a probability occurrence of 'none', and it has been determined that implementation of the Build Alternatives would have "*No effect anticipated*" on the gopher frog.

Bald Eagle (*Haliaeetus leucocephalus*): The bald eagle is protected under the MBTA, the federal Bald and Golden Eagle Protection Act, and Florida's bald eagle rule (68A-16.002, F.A.C.). On April 20, 2017, the FWC approved revisions to the state's bald eagle rule that eliminate the need for applicants to obtain both a state and federal permit for activities with the potential to take or disturb bald eagles or their nests. Under the approved revisions, only a federal permit is required. No bald eagle nests are reported within one mile of the project study area; therefore, it is anticipated that the Build Alternatives will have "*No effect anticipated*" on the bald eagle.

Limpkin (*Aramus guarauna*), snowy egret (*Egretta thula*), white ibis (*Eudocimus albus*): The limpkin, snowy egret, and white ibis are no longer federally or state listed as protected species in Florida as of January 11, 2017, but are included in the FWC Florida's Imperiled Species Management Plan. The limpkin inhabits shallows along rivers, streams, lakes, and in marshes, swamps and sloughs in Florida. Historically, the limpkin was almost extirpated from Florida due to overhunting. New laws and conservation efforts prevented this from happening and the population recovered. Snowy egrets commonly

prefer shallow estuarine areas including mangroves, shallow bays, saltmarsh pools, and tidal channels. Historically, the snowy egret was overhunted for their plumage which were often used for women's clothing and hats. Today's threats to the species are not well understood, but coastal development, recreational disturbance at foraging and breeding sites, habitat degradation, human disturbance, and increased pressure from predators are primary concerns. White ibis prefer coastal marshes and wetlands, feeding in fresh, brackish, and saltwater environments. The main threat to the white ibis is the loss of wetland habitat due to the human development of coastal areas and their freshwater feeding areas. The primary concern for impacts to these wading birds is the loss of foraging habitat (i.e., wetlands). During the field reviews, a limpkin was observed within the vicinity of Surface Water 11; therefore, this species was determined to have a 'high' probability of occurrence within the project study area. The snowy egret and white ibis were determined to have a 'moderate' probability of occurrence due to the presence of suitable habitat.

No rookeries for these species are documented or otherwise known in the project vicinity; however, suitable foraging habitat for these species exists within the limits of the Build Alternatives. Any unavoidable adverse wetland and/or surface water impacts will be fully mitigated as deemed necessary pursuant to Section 373.4137, F.S. to satisfy all mitigation requirements of Part IV of Chapter 373, F.S. and 33 U.S.C. §1344 to prevent a net loss of functions and values to wetlands and other surface waters that may provide suitable habitat for this species. The proposed surface water features observed within the study area mainly consist mainly of excavated stormwater management facilities (swales, ditches and retention areas) associated with the existing roadway network. No net loss of functions and values to surface waters that may provide suitable habitat for this species will occur as unavoidable impacts to these features are anticipated to be compensated through construction of the new stormwater management system.

Based on the provision of compensatory mitigation to offset unavoidable surface water habitat impacts, the proposed project, regardless of the

selected Build Alternative, is anticipated to have "*No effect anticipated*" on the limpkin, snowy egret, and white ibis.

5.3.4 Candidate Species

While the gopher tortoise currently has state designation only, this species has been added to the list of candidate species eligible for federal protection under the Endangered Species Act.

6.0 WETLANDS AND SURFACE WATERS

6.1 Introduction

In accordance with Presidential Executive Order 11990 entitled "Protection of Wetlands" and United States Department of Transportation Order 5660.1A, "Preservation of the Nation's Wetlands" and Part 2, Chapter 9 of the FDOT PD&E Manual, the project study area was reviewed to identify, quantify, and map wetland communities that are located within the proposed project boundaries. In order to protect, preserve, and enhance wetlands to the fullest extent possible, the FDOT has assessed wetlands that may be affected by proposed roadway improvements.

Regulatory agencies that provided comments during the ETDM Process included the Florida Department of Environmental Protection (FDEP), USACE, U.S. Environmental Protection Agency (USEPA), South Florida Water Management District (SFWMD), NMFS, and FWS. The Degree of Effect (DOE) for the Wetlands issue varied by alternative from 0 (None) to 3 (Moderate). The NMFS assigned a 0 (None) DOE for the project since it does not affect coastal or marine resources. The USEPA expressed concerns regarding potential water quality issues and assigned a 3 (Moderate) DOE to the project. The USACE noted that, while the Hillsboro Canal is federally jurisdictional, the remaining surface waters within the project study area are not federally jurisdictional as they are excavated features associated with a stormwater management system. The USACE also noted that the project may qualify for a Regional General Permit-92 or a Nationwide Permit. The wetland permitting agencies indicated that impacts to wetlands should be avoided and minimized to the greatest extent practicable, the design should meet state water quality and quantity standards, and best management practices should be implemented during construction.

6.2 Methodology

On December 7 and 8, 2017 and June 11, 2020, environmental scientists familiar with Florida's natural communities conducted a field review of the project study area to verify preliminary surface water habitat boundaries and

land use classifications. Mapped surface water habitat boundaries were field-verified in accordance with the State of Florida Wetlands Delineation Manual (Chapter 62-340, F.A.C.) and the guidelines found within the Regional Supplement to the USACE Wetlands Delineation Manual: Atlantic and Gulf Coastal Plain Region (USACE 2010). During field investigations, each surface water habitat within the project study area was visually inspected and photographed (see **Appendix F**). Attention was given to identifying plant species composition for each community. Exotic plant infestations and other disturbances (such as soil subsidence, clearing, canals, power lines, etc.) were noted. Wildlife observations and signs of wildlife usage within each surface water habitat within the project study area were also documented.

6.3 Individual Surface Waters

The surface water habitats within the Build Alternatives are identical in size and nature and consist primarily of upland-cut drainage conveyances and stormwater retention features associated with I-95. Based on in-house reviews and field verification, a total of 12 individual surface water features, comprising a total of 20.53 acres, were identified within the limits of the project study area (see **Figure 6-1** for individual surface water locations). Individual surface water habitats located within the project study area, by FLUCFCS code and FWS classification, are summarized in **Table 6-1**. Descriptions of each are also provided below.

Table 6 - 1: Summary of Individual Surface Waters

SW ID	FLUCFCS Description	FLUCFCS Code	FWS Wetland Classification*	Acres in Study Area
SW-1	Reservoirs <10 acres	534	POWHx	5.46
SW-2	Reservoirs <10 acres	534	POWHx	0.22
SW-3	Reservoirs <10 acres	534	POWHx	6.06
SW-4	Reservoirs <10 acres	534	POWHx	1.47
SW-5	Reservoirs <10 acres	534	POWHx	0.29
SW-6	Streams and Waterways	510	PEM1Cx	0.66
SW-7	Reservoirs <10 acres	534	POWHx	2.69
SW-8	Reservoirs <10 acres	534	POWHx	1.97
SW-9	Streams and Waterways	510	PEM1Cx	0.57
SW-10	Streams and Waterways	510	PEM1Cx	0.27
SW-11	Reservoirs <10 acres	534	POWHx	0.50
SW-12	Streams and Waterways	510	PEM1Cx	0.37
Total				**20.53**

***FWS Wetland Descriptions:**

PEM1Cx: Palustrine, Emergent, Persistent, Seasonally Flooded, Excavated

POWHx: Palustrine, Open Water, Permanently Flooded, Excavated

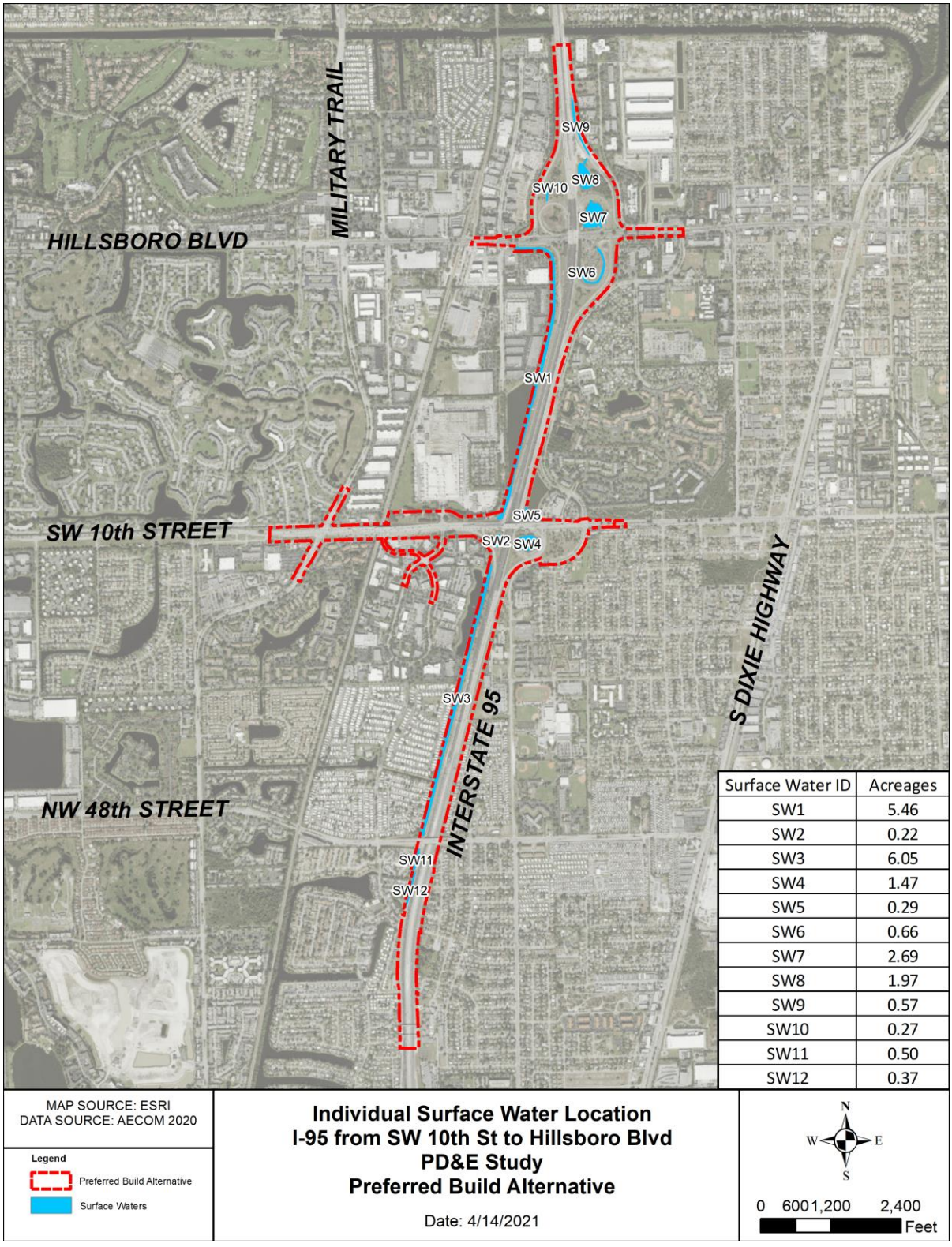

Figure 6 - 1: Individual Surface Water Locations

6.3.1 Surface Water 1

FLUCFCS 534
FWS: POWHx (Palustrine, Open Water, Permanently Flooded, Excavated)

Surface Water 1 (SW-1) is an excavated linear stormwater conveyance feature located along the west side of I-95, extending from SW 10th Street to Hillsboro Boulevard. The channel widens into a reservoir between Hillsboro Boulevard and SW 10th Street. Dominant vegetation along the banks include torpedograss (*Panicum repens*), flat sedge (*Cyperus*), hydrilla (*Hydrilla verticillata*), knotted spikerush (*Eleocharis interstincta*), cattail (*Typha*), and common reed (*Phragmites australis*). The center region of the channel and reservoir consist of deep open water. The side slopes are regularly mowed and contain scattered cabbage palms (*Sabal palmetto*). This feature is hydrologically connected to SW-2 via a culvert beneath SW 10th Street. A white ibis (*Eudocimus albus*), white peacock butterfly (*Anartia jatrophae*), and several Muscovy ducks (*Cairina moschata*) were observed within the vicinity of SW-1 during the December 7, 2018 field review. This surface water is not federally jurisdictional but is state jurisdictional due to its function as part of a permitted stormwater management system.

6.3.2 Surface Water 2

FLUCFCS 534
FWS: POWHx (Palustrine, Open Water, Permanently Flooded, Excavated)

Surface Water 2 (SW-2) is an excavated stormwater conveyance feature located in the southwest quadrant of the I-95 and SW 10th Street Interchange. Side slopes are regularly mowed and contain dense cabbage palm trees. The channel banks are dominated by torpedo grass, and the center is characterized by deep open water. A culvert beneath SW 10th Street hydrologically connects SW-2 to SW-1. A green iguana (*Iguana iguana*) was observed along the banks of SW-2 during the December 7, 2017 field inspection. This surface water is not federally jurisdictional but is state jurisdictional due to its function as part of the permitted stormwater management system.

6.3.3 Surface Water 3

FLUCFCS 534
FWS: POWHx (Palustrine, Open Water, Permanently Flooded, Excavated)

Surface Water 3 (SW-3) is an upland-cut stormwater pond located along the east side of I-95, immediately south of SW 10th Street. This retention pond extends south along I-95 into a linear conveyance channel that flows offsite south of the project terminus. This feature connects to SW-2 at the north end via a culvert located beneath the southbound on-ramp from SW 10th Street to I-95. This surface water is characterized primarily of deep open water, with hydrilla and eelgrass (*Vallisneria americana*) observed within shallow regions. Pond apple (*Annona glabra*) and cabbage palm dominate the mowed and maintained banks of the pond. This excavated surface water is not federally jurisdictional but is state jurisdictional due to its function as part of a permitted stormwater management system.

6.3.4 Surface Water 4

FLUCFCS 534
FWS: POWHx (Palustrine, Open Water, Permanently Flooded, Excavated)

Surface Water 4 (SW-4) is an excavated stormwater retention pond located in the infield of the southeast quadrant of the I-95 and SW 10th Street interchange. This surface water is comprised primarily of deep open water, with live oak (*Quercus virginiana),* cabbage palm, coco plum (*Chrysobalanus icaco*), red maple (*Acer rubrum*), Everglades palm (*Acoelorrhaphe wrightii*), Brazilian-pepper (*Schinus terebinthifolius*), and bald-cypress (*Taxodium distichum*) scattered along its banks. Shallow regions of the pond are dominated by nuisance/exotic vegetative species such as cattail (*Typha*), creeping primrose-willow (*Ludwigia repens*), and torpedo grass. Green iguanas were observed within the vicinity of SW-4 during the December 7, 2017 field review. This excavated surface water is not federally jurisdictional but is state jurisdictional due to its function as part of a permitted stormwater management system.

6.3.5 Surface Water 5

FLUCFCS 534
FWS: POWHx (Palustrine, Open Water, Permanently Flooded, Excavated)
Surface Water 5 (SW-5) is an excavated stormwater pond located in the northeast quadrant of the I-95 and SW 10th Street interchange. Side slopes are gradual and are regularly mowed and maintained. The pond consists primarily of deep open water with live oak, cabbage palm, carrotwood (*Cupaniopsis anacardioides*), and earleaf acacia (*Acacia auriculiformis*) scattered along the banks. Shallow regions are dominated by nuisance/exotic vegetative species such as torpedograss and hydrilla. A double-crested cormorant (*Phalacrocorax auritus*) and a white ibis were observed within the vicinity of SW-5 during the December 8, 2017 field inspection. This excavated surface water is not federally jurisdictional but is state jurisdictional due to its function as part of a permitted stormwater management system.

6.3.6 Surface Water 6

FLUCFCS: 510
FWS: PEM1Cx (Palustrine, Emergent, Persistent, Seasonally Flooded, Excavated)
Surface Water 6 (SW-6) is an excavated linear stormwater swale located within the infield region of the southeast quadrant of the I-95 and Hillsboro Boulevard interchange. A system of culverts connects this feature to other surface waters associated with the I-95 stormwater management system. Dominant vegetation observed within this swale consists of torpedograss, various flat sedges (*Cyperus* spp.), marsh pennywort (*Hydrocotyle*), false daisy (*Eclipta prostrata*), shrubby false buttonweed (*Spermacoce verticillata*), Texas frogfruit (*Phyla nodiflora*), and creeping primrose-willow. This excavated drainage swale is not federally jurisdictional but is state jurisdictional due to its function as part of a permitted stormwater management system.

6.3.7 Surface Water 7

FLUCFCS 534
FWS: POWHx (Palustrine, Open Water, Permanently Flooded, Excavated)

Surface Water 7 (SW-7) is an excavated stormwater pond located in the northeast quadrant of the I-95 and Hillsboro Boulevard interchange. Side slopes are gradual and regularly mowed and maintained. The pond consists primarily of deep open water with cabbage palm, earleaf acacia, live oak, pond apple, bald-cypress, Florida strangler fig (*Ficus aurea*), Brazilian-pepper, muscadine grape (*Vitis rotundifolia*), sea grape (*Coccoloba uvifera*), and dahoon holly (*Ilex cassine*) scattered along the banks. Shallow regions near the banks are dominated by nuisance/exotic species such as hydrilla and torpedograss. Green iguanas and a great egret (*Ardea alba*) were observed near SW-7 during the December 7, 2017 field evaluation. This excavated surface water is not federally jurisdictional but is state jurisdictional due to its function as part of a permitted stormwater management system.

6.3.8 Surface Water 8

FLUCFCS 534
FWS: POWHx (Palustrine, Open Water, Permanently Flooded, Excavated)

Surface Water 8 (SW-8) is an excavated stormwater pond located in the northeast quadrant of the I-95 and Hillsboro Boulevard interchange, just north of SW-7. Side slopes are gradual and regularly mowed and maintained. The pond consists primarily of deep open water with cabbage palm, live oak, and Brazilian-pepper scattered sparsely along the banks. Shallow regions near the banks are dominated by nuisance/exotic species such as hydrilla, primrose-willow (*Ludwegia* spp.), and torpedograss. An iguana burrow and a tricolored heron were observed within the vicinity of SW-8 during the December 7, 2017 field evaluation. This excavated surface water is not federally jurisdictional but is state jurisdictional due to its function as part of a permitted stormwater management system.

6.3.9 Surface Water 9

FLUCFCS: 510
FWS: PEM1Cx (Palustrine, Emergent, Persistent, Seasonally Flooded, Excavated)

Surface Water 9 (SW-9) is an upland-cut vegetated stormwater conveyance swale located along the east side of I-95, between the southbound off-ramp and the southbound on-ramp from Hillsboro Boulevard. Dominant vegetation identified within this swale includes primarily nuisance/exotic species such as primrose-willow, Mexican primrose-willow (*Ludwigia octovalvis*), and torpedograss; with dotted smartweed (*Persicaria punctata*) also present. Side slopes are regularly mowed and maintained, and culverts are located at the north and south ends of this swale, hydrologically connecting it to SW-8 and other offsite surface waters. SW-9 is not federally jurisdictional but is state-jurisdictional due to its function as part of a permitted stormwater management system.

6.3.10 Surface Water 10

FLUCFCS: 510
FWS: PEM1Cx (Palustrine, Emergent, Persistent, Seasonally Flooded, Excavated)

Surface Water 10 (SW-10) is an upland-cut stormwater conveyance swale located within the infield of the northeast quadrant of the I-95 and Hillsboro Boulevard interchange. Dominant vegetation observed within the swale consists primarily of nuisance/exotic species such as primrose-willow and torpedograss. Scattered cabbage palm and slash pine (*Pinus elliotii*) trees are also present along the banks. This excavated swale is not federally jurisdictional but is state jurisdictional due to its function as part of a permitted stormwater management system.

6.3.11 Surface Water 11

FLUCFCS 534
FWS: POWHx (Palustrine, Open Water, Permanently Flooded, Excavated)

Surface Water 11 (SW-11) is an excavated stormwater conveyance feature located along the west side of I-95 immediately south of NE 48th Street. Side slopes are regularly mowed with occasional woody species present such as cabbage palms, live oaks, seagrape (*Coccoloba uvifera*), and Carolina willow (*Salix caroliniana*). A narrow band of torpedo grass extends waterward of the side slopes, and the center is characterized by deep open water with eelgrass present. Culverts beneath NE 48th Street hydrologically connects SW-11 to SW-3. A limpkin (*Aramus guarauna*) was observed foraging along the banks of SW-11 during the June 11, 2020 field inspection and numerous empty apple snail (*Pomacea* sp.) shells littered the side slopes. Several green iguanas along with their burrows on the side slopes were observed. This surface water is not federally jurisdictional, but is state jurisdictional due to its function as part of the permitted stormwater management system.

6.3.12 Surface Water 12

FLUCFCS: 510
FWS: PEM1Cx (Palustrine, Emergent, Persistent, Temporarily Flooded, Excavated)

Surface Water 12 (SW-12) is an upland-cut regularly-mowed stormwater detention/retention feature located along the west side of I-95 south of SW-11 and NE 48th Street. Dominant vegetation identified within this stormwater feature includes torpedograss along with capeweed, various flatsedges, marsh pennywort, and shrubby false buttonweed. Side slopes are regularly mowed and maintained, and culverts are located at the north end of this feature. SW-12 is not federally jurisdictional, but is state-jurisdictional due to its function as part of a permitted stormwater management system.

6.4 Wetland and Surface Water Impacts

The proposed surface water feature impact locations are identified on aerial photographs included in **Appendix G**. No wetland or surface water impacts will result from the No-Action Alternative. The viable Build Alternatives will result in identical acreage of impacts to state and federally jurisdictional surface waters. The existing surface waters within the project study area all provide low quality habitat due to their location with a densely developed

urban area and proximity to the existing roadway corridor. The proposed surface water impacts will occur to excavated stormwater management facilities associated with I-95 in which water quality/quantity impacts will be addressed through improvements to the existing stormwater management system. As such, compensatory mitigation is not proposed, and a wetland functional assessment was not conducted as part of this NRE. **Table 6-2** below provides a summary of proposed impacts to individual surface water features within the project study area. Individual impact areas were determined based on the footprint of proposed new roadway construction (not the total acreage of each surface water feature within the project ROW). As shown below in **Table 6-2**, no impacts are proposed to Surface Waters 4, 5 or 10.

Table 6 - 2: Summary of Proposed Surface Water Impacts

SW ID	FLUCFCS Description	FLUCFCS Code	Acres of Impact	Total Acres in Study Area
SW-1	Reservoirs <10 acres	534	3.90	5.46
SW-2	Reservoirs <10 acres	534	0.22	0.22
SW-3	Reservoirs <10 acres	534	1.19	6.06
SW-4	Reservoirs <10 acres	534	0.00	1.47
SW-5	Reservoirs <10 acres	534	0.00	0.29
SW-6	Streams and Waterways	510	0.06	0.66
SW-7	Reservoirs <10 acres	534	0.12	2.69
SW-8	Reservoirs <10 acres	534	0.07	1.97
SW-9	Streams and Waterways	510	0.01	0.57
SW-10	Streams and Waterways	510	0.00	0.27
SW-11	Reservoirs <10 acres	534	0.04	0.50
SW-12	Streams and Waterways	510	0.27	0.37
Total			**5.88**	**20.53**

6.5 Avoidance and Minimization

Avoidance and minimization of impacts were demonstrated through utilization of the existing, previously disturbed ROW for the majority of the study area. Additionally, all unavoidable surface water impacts will be minimized to greatest extent practicable during the project's design and permitting phase, and best management practices will be implemented during construction and

operation of the project in accordance with FDOT's Standard Specifications for Road and Bridge Construction (FDOT 2017).

6.6 Agency Coordination

While mitigation is not anticipated for this project, the FDOT will coordinate with the USACE and SFWMD to ensure that any unanticipated mitigation requirements are fully satisfied. The specific type and extent of any required mitigation will be finalized during permitting.

An EFH Assessment is not required for this project as the affected surface waters are not tidally influenced and do not contain EFH. The ETDM Programming Screen Summary Report includes a statement from the NMFS that impacts to EFH are not anticipated to occur as a result of this project.

Refer to Section 6.0, Anticipated Permits, of this document for additional agency coordination details.

7.0 ANTICIPATED PERMITS

Both the USACE and SFWMD regulate impacts to wetlands and surface waters within the project study area. Other resource agencies, including the NMFS, United States USEPA, and FWS, and FWC, review and comment on wetland permit applications. In addition, the FDEP regulates stormwater discharges from construction sites. The complexity of the permitting process will depend greatly on the degree of the impact to jurisdictional areas. As a precursor to the permitting process, the project was introduced to the SFWMD and USACE on June 21, 2018 (see **Appendix H** for meeting minutes). No comments adverse to the proposed project were received during this agency meeting.

It is anticipated that the following permits will be required for this project:

Permit	**Issuing Agency**
Section 404 Wetland Dredge and Fill Permit	USACE
Environmental Resource Permit (ERP)	SFWMD
National Pollutant Discharge Elimination System (NPDES)	FDEP

It is anticipated that a Regional General or Nationwide Permit will be required from the USACE. These permits will require compliance with the 404(b)(1) guidelines including verification that all impacts have first been avoided to the greatest extent possible; that unavoidable impacts have been minimized to the greatest extent possible; and that unavoidable impacts have been mitigated in the form of wetlands creation, restoration, and/or enhancement.

The SFWMD requires an ERP when construction of any project results in the creation of a new or modification of an existing stormwater management system or results in impacts to waters of the state. As with USACE permits, the complexity associated with the ERP permitting process will depend on the size of the project and/or the extent of wetland impacts. The SFWMD will likely require an Individual ERP for this project.

40 C.F.R. Part 122 prohibits point source discharges of stormwater to waters of the United States without a NPDES permit. Under the State of Florida's delegated authority (from the USEPA) to administer the NPDES program,

construction sites that will result in greater than one acre of disturbance must file for and obtain either coverage under an appropriate generic permit contained in Chapter 62- 621, F.A.C. or an individual permit issued pursuant to Chapter 62-620, F.A.C. A major component of the NPDES permit is the development of a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP identifies potential sources of pollution that may reasonably be expected to affect the quality of stormwater discharges from the site and identifies specific engineering practices (i.e., best management practices) that will be used to reduce the pollutants from stormwater discharge.

Depending on the types of permits needed from the regulatory agencies, the permitting process typically ranges from 90 to 180 days.

8.0 CONCLUSIONS

8.1 Protected Species and Habitats

The project study area was evaluated for the presence of federal and state protected species and their suitable habitats in accordance with Section 7 of the ESA and Part 2, Chapter 16 of the FDOT PD&E Manual. The Build Alternatives will result in unavoidable impacts to habitats potentially used by federally listed and state-listed species. **Table 8-1** below presents the respective effect determinations assigned to each federally listed and state-listed species based on their probability ranking and the implementation measures and/or commitments to be followed to offset potential impacts to the species. None of the Build Alternatives will adversely affect any federally designated critical habitat.

Table 8 - 1: Summary of Listed Species and Effect Determinations

	Scientific Name	Common Name	Effect Determination	Status	
				Federal	State
Federally Listed Wildlife Species	*Aphelocoma coerulescens*	Florida scrub-jay	No Effect	T	FT
	Calidris canutus rufa	Red knot	No Effect	T	FT
	Charadrius melodus	Piping plover	No Effect	T	FT
	Rostrhamus sociabilis plumbeus	Everglade snail kite	No Effect	E	FE
	Picoides borealis	Red-cockaded woodpecker	No Effect	E	FE
	Grus americana	Whooping Crane	May Affect, Not Likely to Adversely Affect	E	FE
	Mycteria americana	Wood stork	May Affect, Not Likely to Adversely Affect	T	FT
	Crocodylus acutus	American crocodile	May Affect, Not Likely to Adversely Affect	T	FT
	Drymarchon corais couperi	Eastern indigo snake	May Affect, Not Likely to Adversely Affect	T	FT

	Peromyscus polionotus Niveiventris	Southeastern beach mouse	No Effect	T	FT
	Puma concolor	Puma	No Effect	T(S/A)	FT(S/A)
	Puma concolor coryi	Florida panther	No Effect	E	FE
	Trichechus manatus latirostris	West Indian manatee	No Effect	T	FT
	Strymon acis bartrami	Bartram's Hairstreak Butterfly	No Effect	E	FE
	Anaea troglodyta floridalis	Florida leafwing butterfly	No Effect	E	FE
	Cyclargusthomasi bethunebakeri	Miami blue butterfly	No Effect	E	FE
Federally Listed Plant Species	*Cucurbita okeechobeensis* ssp. *Okeechobeensis*	Okeechobee gourd	No Effect	E	FE
	Dalea carthagenesis var. *floridana*	Florida prairie-clover	No Effect	E	FE
	Jacquemontia reclinata	Beach jacquemontia	No Effect	E	FE
	Polygala smallii	Tiny polygala	No Effect	E	FE
State-Listed Wildlife Species	*Athene cunicularia floridana*	Florida burrowing owl	No Effect Anticipated	NL	ST
	Egretta caerulea	Little blue heron	No Effect Anticipated	NL	ST
	Egretta tricolor	Tricolored heron	No Adverse Effect Anticipated	NL	ST
	Falco sparverius paulus	Southeastern American kestrel	No Effect Anticipated	NL	ST
	Gopherus polyphemus	Gopher tortoise	No Effect Anticipated	C(1)	ST
	Grus canadensis pratensis	Florida sandhill crane	No Effect Anticipated	NL	ST
	Platalea ajaja	Roseate spoonbill	No Effect Anticipated	NL	ST
	Sternula antillarum	Least tern	No Effect Anticipated	NL	ST
	Haliaeetus leucocephalus	Bald eagle	No Effect Anticipated	NL(2)	NL

	Lithobates capito	Gopher frog	No Effect Anticipated	NL(3)	NL
	Aramus guarauna	Limpkin	No Effect Anticipated	NL(3)	NL
	Egretta thula	Snowy egret	No Effect Anticipated	NL(3)	NL
	Eudocimus albus	White ibis	No Effect Anticipated	NL(3)	NL
State-Listed Plant Species	*Acrostichum aureum*	Golden leather fern	No Effect Anticipated	NL	ST
	Aeschynomene pratensis var. *pratensis*	Meadow jointvetch	No Effect Anticipated	NL	SE
	Asplenium dentatum	American toothed spleenwort	No Effect Anticipated	NL	SE
	Asplenium serratum	American bird's nest fern	No Effect Anticipated	NL	SE
	Euphorbia (=*Chamaesyce*) *cumulicola*	Sand-dune spurge	No Effect Anticipated	NL	SE
	Conradina grandiflora	Large-flowered rosemary	No Effect Anticipated	NL	ST
	Ctenitis sloanei	Florida tree fern	No Effect Anticipated	NL	SE
	Epidendrum nocturnum	Night scented orchid	No Effect Anticipated	NL	SE
	Heliotropium gnaphalodes	Sea rosemary	No Effect Anticipated	NL	SE
	Lechea cernua	Nodding pinweed	No Effect Anticipated	NL	ST
	Okenia hypogaea	Burrowing four-o'clock	No Effect Anticipated	NL	SE
	Ophioglossum palmatum	Hand fern	No Effect Anticipated	NL	SE
	Tillandsia flexuosa	Banded wild-pine	No Effect Anticipated	NL	ST
	Trichostigma octandrum	Hoop vine	No Effect Anticipated	NL	SE
	Zanthoxylum coriaceum	Biscayne prickly ash	No Effect Anticipated	NL	SE

F = Federally Listed / S = State Listed / E = Endangered / T = Threatened / T(S/A) = Threatened due to similar appearance / NL =Not Listed

(1) The gopher tortoise is currently a candidate species for federal protection under the ESA.

(2) The bald eagle is neither state nor federally listed; however, this species is federally protected by the Bald and Golden Eagle Act and the Migratory Bird Treaty Act. The bald eagle is also managed in Florida by the FWC's bald eagle rule (FAC 68A- 16.002).

(3) The gopher frog, limpkin, snowy egret, and white ibis are no longer listed in Florida as of January 11, 2017. However, these species are part of the FWC Florida's Imperiled Species Management Plan, as amended (December 2018).

8.2 Wetlands Findings

The proposed Build Alternatives were evaluated for impacts to wetlands and surface waters in accordance with Executive Order (EO) 11990. No impacts to vegetated wetland resources will occur as a result of the viable Build Alternatives. However, based on the location of the existing roadway network (I-95) and the need for the proposed improvements, the FDOT has determined that there is no practicable alternative to completely avoid impacts to the surface water features identified. The proposed project will have no significant short-term or long-term adverse impacts to wetlands or surface waters. In accordance with EO 11990, the FDOT has undertaken all actions to avoid and minimize the destruction, loss or degradation of wetlands and surface waters, and to preserve and enhance the natural and beneficial values of wetlands/surface waters in carrying out the agency's responsibilities.

The proposed viable Build Alternatives will result in 5.88 acres of impacts to excavated stormwater conveyance features. The final area of surface water impact for the selected alternative is anticipated to be refined during the final design and permitting phase of the project. No wetland impacts are proposed at this time.

8.3 Implementation Measures

Based on the field and literature reviews outlined in this report, federally listed or state-listed protected species have the potential to occur within the project study area. In order to ensure that the proposed project will not adversely impact these species, the FDOT will adhere to the following measures:

- While mitigation is not anticipated, any adverse impacts to suitable foraging habitat for the federally listed wood stork for which mitigation is deemed necessary will be mitigated through the purchase of credits from a FWS-approved mitigation bank pursuant to Section 373.4137, F.S. or as otherwise agreed to by the FDOT and the FWS.

- Should protected plant species be identified within the project impact area during the design and permitting phase, coordination will be initiated with the FDACS or other appropriate agencies to allow for relocation to adjacent habitat or other suitable protected lands prior to construction.

- Should gopher tortoise burrows be identified within the project area, the FDOT will avoid burrows in accordance with FWC regulations. For burrows that cannot be avoided during construction, the FDOT will apply for a gopher tortoise relocation permit from the FWC.

- During the construction phase of this project, the FDOT will implement the *Standard Specifications for Road and Bridge Construction* and other best management practices to avoid, where possible, and otherwise minimize adverse impacts to wetlands/surface waters and water quality within the project limits to the maximum extent practicable.

8.4 Commitments

Based on the field and literature reviews outlined in this report, federally listed or state listed protected species have the potential to occur within the project study area. In order to assure that the proposed project will not adversely impact these species, the FDOT will adhere to the following commitment:

- During the construction phase of this project, the FDOT will adhere to the most recent version of the FWS' *Standard Protection Measures for the Eastern Indigo Snake* to minimize the potential for adverse effects.

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APPENDIX A

AGENCY CORRESPONDENCE

Agency Comments - Project Effects

#14244 I-95 from SW 10th St to Hillsboro Blvd

District: District 4
County: Broward
Planning Organization: FDOT District 4
Plan ID: Not Available
Federal Involvement: FHWA Funding Other Federal Permit

Phase: Programming Screen
From:
To:
Financial Management No.: 436964-1-22-01

Contact Information: Anson Sonnett (954) 777-4474 anson.sonnett@dot.state.fl.us
Snapshot Data From: Current Draft Data

Alternative #1

Project Effects Overview for Alternative #1

Issue	Degree of Effect	Organization	Date Reviewed
Natural			
Wildlife and Habitat	2 Minimal	FL Fish and Wildlife Conservation Commission	10/20/2015

ETAT Reviews and Coordinator Summary: Natural

Wildlife and Habitat

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 12/09/2015 by FDOT District 4

Comments:

Core Foraging Areas (CFA) of two active wood stork nests and the USFWS designated consultation area for snail kites overlap the project area. No areas of designated Critical Habitat are present. FHWA rated the wildlife and habitat issue as Minimal. USFWS rated the wildlife and habitat issue as Minimal but recommended that FDOT prepare a Biological Assessment due to the potential occurrence of the wood stork. FFWCC stated that impacts could be minimal provided that construction avoids the Tivoli Sand Pines Preserve and that water quality best management practices are implemented. FFWCC recommended that FDOT perform plant mapping and wildlife surveys and develop a plan to address potential impacts, including avoidance measures for the Florida burrowing owl. Therefore, the Summary DOE assigned to the Wildlife and Habitat issue is ***Minimal***.

During the PD&E phase further coordination will occur with USFWS and FFWCC to determine what documentation will be required to analyze potential wildlife issues. The final design of the project will avoid and/or minimize impacts to wetlands and wildlife and habitat to the greatest extent possible and best management practices will be utilized during project design and construction. Appropriate mitigation will also be provided for unavoidable impacts.

Degree of Effect: 2 *Minimal* assigned 10/20/2015 by Jennifer Goff, FL Fish and Wildlife Conservation Commission

Coordination Document: To Be Determined: Further Coordination Required

Direct Effects

Identified Resources and Level of Importance:

Florida Fish and Wildlife Conservation Commission (FWC) staff has reviewed ETDM #14244, Broward County, and provides the following comments related to potential effects to fish and wildlife resources of this Programming Phase project.

The Project Description Summary states that this project involves improvements to the I-95 partial cloverleaf interchanges at SW 10th Street and Hillsboro Boulevard and along I-95 between these interchanges, a distance of approximately 1.8 miles. The project also proposes improvements along both SW 10th Street and Hillsboro Boulevard in the vicinity of I-95. The Project Description did not address the possible need for new Drainage Retention Areas (DRAs) to handle the stormwater runoff from the expanded roadways.

An assessment of the project area was performed on lands within 500 feet of the proposed alignment to determine potential impacts to habitat which supports listed species and other fish and wildlife resources. Our inventory included a review of aerial and ground-level photography, various wildlife observation and landcover data bases, along with coordination with FWC biologists and other State and Federal agencies. A GIS analysis was performed using the Florida Department of Transportation's (FDOT) Environmental Screening Tool to determine the potential quality and extent of upland and wetland habitat, and other wildlife and fisheries resource information. We have reviewed the Preliminary Environmental Discussion Comments Report provided by the FDOT, and offer the following comments and recommendations.

Our assessment reveals that land use in the project area is almost entirely urban, with 93.99% of the assessment area classified as Transportation and High or Low Intensity Urban. Other landcover types include Open Water (borrow/stormwater lakes and their associated drainage canals at 4.37%, 253.0 acres), Sand Pine Scrub (within the Tivoli Sand Pine Preserve at 1.53%, 7.5 acres), and Rural Lands (0.11%, 0.6 acres). The Tivoli Sand Pine Preserve, a 22.52-acre area adjacent to the north side of SW 10th Street, and which is owned and managed by the City of Deerfield Beach, provides the most valuable wildlife habitat in the project vicinity.

Based on range and preferred habitat type, the following species listed by the Federal Endangered Species Act and the State of Florida as Federally Endangered (FE), Federally Threatened (FT), State-Threatened (ST), or State Species of Special Concern (SSC) have the potential to occur in the project area: American alligator (FT based on similarity of appearance to American crocodile), Eastern indigo snake (FT), wood stork (FT), gopher frog (SSC), gopher tortoise (ST), Florida burrowing owl (SSC), least tern (ST), limpkin (SSC), snowy egret (SSC), little blue heron (SSC), tricolored heron (SSC), roseate spoonbill (SSC), and white ibis (SSC). Special attention is warranted regarding burrowing owls, which have been documented in the I-95 interchange infields at nearby

Glades Road, and may also utilize similar habitat at the subject interchanges.

The GIS analysis revealed several specific characteristics associated with lands along the project alignment that provide an indication of potential habitat quality or sensitivity that will require field studies to verify the presence or absence of listed wildlife species and the quality of wildlife habitat resources. In the FWC's Integrated Wildlife Habitat Ranking System, 2.9% of the assessment area is ranked Medium, and in the Florida Natural Areas Inventory Critical Lands and Waters Identification Project (CLIP), 1.58% is ranked Priority 2 (high) for Biodiversity Resources. The project is within the Core Foraging Area of four wood stork colonies, and is within the U.S. Fish and Wildlife Service Consultation Area for the Snail Kite.

Comments on Effects to Resources:
Primary wildlife issues associated with this project include: potential adverse impacts to the Tivoli Sand Pine Preserve; potential adverse effects to a moderate number of species listed by the Federal Endangered Species Act as Endangered or Threatened, or by the State of Florida as Threatened or Species of Special Concern; and potential for water quality impacts during construction.

Based on the project information provided, we believe that direct and indirect effects of this project could be minimal provided that construction, including any new DRAs, avoids impacting the Tivoli Sand Pine Preserve, and that water quality BMPs are included in the project design.

Recommended Avoidance, Minimization, and Mitigation Opportunities:
We recommend that the Project Development and Environment Study address natural resources by including the following measures for conserving fish and wildlife and habitat resources that may occur within and adjacent to the project area.

1. Plant community mapping and wildlife surveys for the occurrence of wildlife species listed by the Federal Endangered Species Act as Endangered or Threatened, or by the State of Florida as Threatened or Species of Special Concern should be performed. Basic guidance for conducting wildlife surveys may be found in the FWC's Florida Wildlife Conservation Guide at: http://myfwc.com/conservation/value/fwcg/.

2. Based on the survey results, a plan should be developed to address direct, indirect, and cumulative effects of the project on wildlife and habitat resources, including listed species. Avoidance, minimization, and mitigation measures should also be formulated and implemented. Equipment staging areas should be located in previously disturbed sites to avoid habitat destruction or degradation. The plan should address specific habitat needs which are biologically compatible with the recovery of the target species. For guidance in this effort, FWC's Draft Species Action Plans should be consulted at: http://myfwc.com/wildlifehabitats/imperiled/species-action-plans/.

3. Florida burrowing owls may be present in the project area. Avoidance and minimization measures for burrowing owls include:
Avoid construction activities that would impact active burrowing owl nests. Burrowing owl nests are generally considered to be active from February to July.
Avoid adverse impacts to burrowing owl nests by establishing a 150-foot radius around the burrow entrance that is staked and roped -off prior to construction.
Take care to avoid digging or using heavy equipment near burrow entrances during the breeding season so as not to collapse burrows and potentially trap owls or destroy eggs.
If impacts to burrowing owl burrows or nests are unavoidable, please contact the FWC staff identified below to discuss potential permitting alternatives.

4. For impacts to other state-listed species, refer to the FWC's Draft Species Action Plans which include methods for avoidance as well as options and state requirements for minimizing and mitigating potential impacts.

5. A compensatory mitigation plan should include the replacement of any wetland, upland, or aquatic habitat functional values for listed species which are lost as a result of the project. Replacement habitat for mitigation should be type for type, as productive, and equal to or of higher functional value. Please notify us immediately if the design, extent, or footprint of the current project is modified, as we may choose to provide additional comments and/or recommendations.

We appreciate the opportunity to provide input on highway design and the conservation of fish and wildlife resources. Please contact Brian Barnett at (772) 579-9746 or email brian.barnett@MyFWC.com to initiate the process for further overall coordination on this project.

Additional Comments (optional):

CLC Recommendations:

Indirect Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Agency Comments - Project Effects

#14244 I-95 from SW 10th St to Hillsboro Blvd

District: District 4
County: Broward
Planning Organization: FDOT District 4
Plan ID: Not Available
Federal Involvement: FHWA Funding Other Federal Permit

Phase: Programming Screen
From:
To:
Financial Management No.: 436964-1-22-01

Contact Information: Anson Sonnett (954) 777-4474 anson.sonnett@dot.state.fl.us
Snapshot Data From: Current Draft Data

Alternative #1

Project Effects Overview for Alternative #1

Issue	Degree of Effect	Organization	Date Reviewed
Natural			
Wetlands	2 Minimal	US Fish and Wildlife Service	09/11/2015
Wildlife and Habitat	2 Minimal	US Fish and Wildlife Service	09/11/2015

ETAT Reviews and Coordinator Summary: Natural

Wetlands

Project Effects

Coordinator Summary Degree of Effect: 3 *Moderate* assigned 12/09/2015 by FDOT District 4

Comments:

The surrounding area is largely developed, paved, cleared and landscaped, with minimal wetland habitat. Some of the stormwater swales located within and adjacent to the right-of-way may support hydrophytic vegetation, but are components of the highway drainage system and are constructed man-made features. Potential impacts to wetlands will be assessed during the PD&E study and avoidance and minimization strategies will be implemented during the design process. FHWA, FDEP, USFWS, SFWMD, and USACE assigned a Minimal DOE for the wetlands issue and emphasized the desire for avoidance and minimization strategies. NMFS rated wetlands impacts as None. USEPA rated wetlands as Moderate due to concern about contaminated stormwater runoff impacting the freshwater ponds in the project corridor. Therefore, the Summary DOE for the wetlands issue is ***Moderate***.

A new ERP or modification of the existing permit 88-0040-S will be required from the SFWMD. Depending on the extent of impacts jurisdictional palustrine wetlands, the project may qualify for the USACE Regional General Permit-92 or may be verified with a Nationwide Permit.

During the PD&E phase, further coordination will occur with the agencies to determine what documentation will be required to address agency concerns over potential wetland impacts. Necessary measures will be taken to avoid and/or minimize impacts to wetlands to the greatest extent practicable during project design. Should avoidance and/or minimization not be practicable, a Mitigation Plan will be prepared. In addition, existing compensatory mitigation sites within the area of influence will be identified and reviewed. Further, best management practices will be utilized during project construction and all applicable permits (including an ERP) will be obtained in accordance with federal, state, and local laws and regulations.

Degree of Effect: 2 *Minimal* assigned 09/11/2015 by John Wrublik, US Fish and Wildlife Service

Coordination Document: To Be Determined: Further Coordination Required

Direct Effects

Identified Resources and Level of Importance:

Wetlands

Comments on Effects to Resources:

Wetlands provide important habitat for fish and wildlife, and are known to occur within the project area. We recommend that these valuable resources be avoided to the greatest extent practicable. If impacts to these wetlands are unavoidable, we recommend the FDOT provide mitigation that fully compensates for the loss of important resources.

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Additional Comments (optional):

CLC Recommendations:

Indirect Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Wildlife and Habitat

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 12/09/2015 by FDOT District 4

Comments:
Core Foraging Areas (CFA) of two active wood stork nests and the USFWS designated consultation area for snail kites overlap the project area. No areas of designated Critical Habitat are present. FHWA rated the wildlife and habitat issue as Minimal. USFWS rated the wildlife and habitat issue as Minimal but recommended that FDOT prepare a Biological Assessment due to the potential occurrence of the wood stork. FFWCC stated that impacts could be minimal provided that construction avoids the Tivoli Sand Pines Preserve and that water quality best management practices are implemented. FFWCC recommended that FDOT perform plant mapping and wildlife surveys and develop a plan to address potential impacts, including avoidance measures for the Florida burrowing owl. Therefore, the Summary DOE assigned to the Wildlife and Habitat issue is ***Minimal***.

During the PD&E phase further coordination will occur with USFWS and FFWCC to determine what documentation will be required to analyze potential wildlife issues. The final design of the project will avoid and/or minimize impacts to wetlands and wildlife and habitat to the greatest extent possible and best management practices will be utilized during project design and construction. Appropriate mitigation will also be provided for unavoidable impacts.

Degree of Effect: 2 *Minimal* assigned 09/11/2015 by John Wrublik, US Fish and Wildlife Service

Coordination Document: To Be Determined: Further Coordination Required

Direct Effects

Identified Resources and Level of Importance:
Federally listed species and fish and wildlife resources

Comments on Effects to Resources:
Federally-listed species -

The Service has reviewed our Geographic Information Systems (GIS) database for recorded locations of Federally listed threatened and endangered species on or adjacent to the project study area. The GIS database is a compilation of data received from several sources. Based on review of our GIS database, the Service notes that the following Federally listed species may occur in or near the project area.

Wood Stork

The project corridor is located in the Core Foraging Areas (CFA)(within 18.6 miles) of two active nesting colonies of the endangered wood stork (*Mycteria americana*). The Service believes that the loss of wetlands within a CFA due to an action could result in the loss of foraging habitat for the wood stork. To minimize adverse effects to the wood stork, we recommend that any lost foraging habitat resulting from the project be replaced within the CFA of the affected nesting colony. Moreover, wetlands provided as mitigation should adequately replace the wetland functions lost as a result of the action. The Service does not consider the preservation of wetlands, by itself, as adequate compensation for impacts to wood stork foraging habitat, because the habitat lost is not replaced. Accordingly, any wetland mitigation plan proposed should include a restoration, enhancement, or creation component. In some cases, the Service accepts wetlands compensation located outside the CFA of the affected wood stork nesting colony. Specifically, wetland credits purchased from a "Service Approved" mitigation bank located outside of the CFA would be acceptable to the Service, provided that the impacted wetlands occur within the permitted service area of the bank.

For projects that impact 5 or more acres of wood stork foraging habitat, the Service requires a functional assessment be conducted using our "Wood Stork Foraging Analysis Methodology" (Methodology) on the foraging habitat to be impacted and the foraging habitat provided as mitigation. The Methodology can be found at: http://www.fws.gov/verobeach/ ListedSpecies Birds.html .
The Service believes that the following federally listed species have the potential to occur in or near the project site include the wood stork.Accordingly, the Service recommends that the Florida Department of Transportation (FDOT) prepare a Biological Assessment for the project (as required by 50 CFR 402.12) during the FDOT's Project Development and Environment process.

Fish and Wildlife Resources -

Wetlands provide important habitat for fish and wildlife, and are known to occur within the project area. We recommend that these valuable resources be avoided to the greatest extent practicable. If impacts to these wetlands are unavoidable, we recommend the FDOT provide mitigation that fully compensates for the loss of important resources.

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Additional Comments (optional):

CLC Recommendations:

Indirect Effects
Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Agency Comments - Project Effects

#14244 I-95 from SW 10th St to Hillsboro Blvd

District: District 4
County: Broward
Planning Organization: FDOT District 4
Plan ID: Not Available
Federal Involvement: FHWA Funding Other Federal Permit

Phase: Programming Screen
From:
To:
Financial Management No.: 436964-1-22-01

Contact Information: Anson Sonnett (954) 777-4474 anson.sonnett@dot.state.fl.us
Snapshot Data From: Current Draft Data

Alternative #1

Project Effects Overview for Alternative #1

Issue	Degree of Effect	Organization	Date Reviewed
Natural			
Wetlands	0 None	National Marine Fisheries Service	09/15/2015
Coastal and Marine	0 None	National Marine Fisheries Service	09/15/2015

ETAT Reviews and Coordinator Summary: Natural

Wetlands

Project Effects

Coordinator Summary Degree of Effect: 3 *Moderate* assigned 12/09/2015 by FDOT District 4

Comments:

The surrounding area is largely developed, paved, cleared and landscaped, with minimal wetland habitat. Some of the stormwater swales located within and adjacent to the right-of-way may support hydrophytic vegetation, but are components of the highway drainage system and are constructed man-made features. Potential impacts to wetlands will be assessed during the PD&E study and avoidance and minimization strategies will be implemented during the design process. FHWA, FDEP, USFWS, SFWMD, and USACE assigned a Minimal DOE for the wetlands issue and emphasized the desire for avoidance and minimization strategies. NMFS rated wetlands impacts as None. USEPA rated wetlands as Moderate due to concern about contaminated stormwater runoff impacting the freshwater ponds in the project corridor. Therefore, the Summary DOE for the wetlands issue is ***Moderate***.

A new ERP or modification of the existing permit 88-0040-S will be required from the SFWMD. Depending on the extent of impacts jurisdictional palustrine wetlands, the project may qualify for the USACE Regional General Permit-92 or may be verified with a Nationwide Permit.

During the PD&E phase, further coordination will occur with the agencies to determine what documentation will be required to address agency concerns over potential wetland impacts. Necessary measures will be taken to avoid and/or minimize impacts to wetlands to the greatest extent practicable during project design. Should avoidance and/or minimization not be practicable, a Mitigation Plan will be prepared. In addition, existing compensatory mitigation sites within the area of influence will be identified and reviewed. Further, best management practices will be utilized during project construction and all applicable permits (including an ERP) will be obtained in accordance with federal, state, and local laws and regulations.

Degree of Effect: 0 *None* assigned 09/15/2015 by Brandon Howard, National Marine Fisheries Service

Coordination Document: No Involvement

Direct Effects

Identified Resources and Level of Importance:

None

Comments on Effects to Resources:

None

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Magnuson-Stevens Act: Based on a site inspection on September 9, 2015, the project location, information provided in the ETDM website, and GIS-based analysis of impacts, NOAA's National Marine Fisheries Service (NMFS) concludes the proposed work would not directly impact areas that support essential fish habitat (EFH) or NOAA trust fishery resources. NMFS has no comments or recommendations to provide pursuant to the EFH requirements of the Magnuson-Stevens Fishery Conservation and Management Act (P.L. 104-297); and this project will not require an EFH Assessment. Further consultation on this matter is not necessary unless future modifications are proposed and you believe that the proposed action may result in adverse impacts to EFH.

Endangered Species Act: We are not aware of any threatened or endangered species or critical habitat under the purview of NMFS that occur within the project area. However, it should be noted that a "no effect" determination must be made by the action agency and the reasoning underlying the determination should be documented in a project file. Please coordinate closely with the U.S. Fish and Wildlife Service for other species listed under the Endangered Species Act that may require consultation.

Fish and Wildlife Coordination Act: Based on the project location, information provided in the ETDM website, and GIS-based analysis of impacts, NOAA's National Marine Fisheries Service (NMFS) concludes the proposed work would not directly impact wetlands areas that support NOAA trust fishery resources. NMFS has no comments or recommendations to provide pursuant to the Fish and Wildlife

Coordination Act.

Additional Comments (optional):

CLC Recommendations:

Indirect Effects
Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Coastal and Marine

Project Effects

Coordinator Summary Degree of Effect: 0 *None* assigned 12/09/2015 by FDOT District 4

Comments:
The proposed project corridor is not located within a Coastal Barrier Resource Area, and Essential Fish Habitat is not located within the project limits. Consequently, FHWA, SFWMD, and NMFS anticipated that the effect to coastal and marine will be None; therefore, the Summary DOE is ***None***.

Degree of Effect: 0 *None* assigned 09/15/2015 by Brandon Howard, National Marine Fisheries Service

Coordination Document: No Involvement

Direct Effects
Identified Resources and Level of Importance:
None

Comments on Effects to Resources:
None

Recommended Avoidance, Minimization, and Mitigation Opportunities:
Magnuson-Stevens Act: Based on a site inspection on September 9, 2015, the project location, information provided in the ETDM website, and GIS-based analysis of impacts, NOAA's National Marine Fisheries Service (NMFS) concludes the proposed work would not directly impact areas that support essential fish habitat (EFH) or NOAA trust fishery resources. NMFS has no comments or recommendations to provide pursuant to the EFH requirements of the Magnuson-Stevens Fishery Conservation and Management Act (P.L. 104-297); and this project will not require an EFH Assessment. Further consultation on this matter is not necessary unless future modifications are proposed and you believe that the proposed action may result in adverse impacts to EFH.

Endangered Species Act: We are not aware of any threatened or endangered species or critical habitat under the purview of NMFS that occur within the project area. However, it should be noted that a "no effect" determination must be made by the action agency and the reasoning underlying the determination should be documented in a project file. Please coordinate closely with the U.S. Fish and Wildlife Service for other species listed under the Endangered Species Act that may require consultation.

Fish and Wildlife Coordination Act: Based on the project location, information provided in the ETDM website, and GIS-based analysis of impacts, NOAA's National Marine Fisheries Service (NMFS) concludes the proposed work would not directly impact wetlands areas that support NOAA trust fishery resources. NMFS has no comments or recommendations to provide pursuant to the Fish and Wildlife Coordination Act.

Additional Comments (optional):

CLC Recommendations:

Indirect Effects
Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Agency Comments - Project Effects

#14244 I-95 from SW 10th St to Hillsboro Blvd

District: District 4
County: Broward
Planning Organization: FDOT District 4
Plan ID: Not Available
Federal Involvement: FHWA Funding Other Federal Permit

Phase: Programming Screen
From:
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Financial Management No.: 436964-1-22-01

Contact Information: Anson Sonnett (954) 777-4474 anson.sonnett@dot.state.fl.us
Snapshot Data From: Current Draft Data

Alternative #1

Project Effects Overview for Alternative #1

Issue	Degree of Effect	Organization	Date Reviewed
Special Designations			
Special Designations	0 None	South Florida Water Management District	10/16/2015
Natural			
Wetlands	2 Minimal	South Florida Water Management District	10/16/2015
Water Quality and Quantity	2 Minimal	South Florida Water Management District	10/16/2015
Floodplains	2 Minimal	South Florida Water Management District	10/16/2015
Coastal and Marine	0 None	South Florida Water Management District	10/16/2015
Physical			
Contamination	3 Moderate	South Florida Water Management District	10/16/2015
Cultural			
Recreation Areas	2 Minimal	South Florida Water Management District	10/16/2015

ETAT Reviews and Coordinator Summary: Special Designations

Special Designations

Degree of Effect: 0 *None* assigned 10/16/2015 by Mindy Parrott, South Florida Water Management District

Coordination Document: No Involvement

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Additional Comments (optional):

CLC Recommendations:

Indirect Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

ETAT Reviews and Coordinator Summary: Natural

Wetlands

Project Effects

Coordinator Summary Degree of Effect: 3 *Moderate* assigned 12/09/2015 by FDOT District 4

Comments:

The surrounding area is largely developed, paved, cleared and landscaped, with minimal wetland habitat. Some of the stormwater swales located within and adjacent to the right-of-way may support hydrophytic vegetation, but are components of the highway drainage system and are constructed man-made features. Potential impacts to wetlands will be assessed during the PD&E study and avoidance and minimization strategies will be implemented during the design process. FHWA, FDEP, USFWS, SFWMD, and USACE assigned a Minimal DOE for the wetlands issue and emphasized the desire for avoidance and minimization strategies. NMFS rated wetlands impacts as None. USEPA rated wetlands as Moderate due to concern about contaminated stormwater runoff impacting the freshwater ponds in the project corridor. Therefore, the Summary DOE for the wetlands issue is ***Moderate***.

A new ERP or modification of the existing permit 88-0040-S will be required from the SFWMD. Depending on the extent of impacts jurisdictional palustrine wetlands, the project may qualify for the USACE Regional General Permit-92 or may be verified with a Nationwide Permit.

During the PD&E phase, further coordination will occur with the agencies to determine what documentation will be required to address agency concerns over potential wetland impacts. Necessary measures will be taken to avoid and/or minimize impacts to wetlands to the greatest extent practicable during project design. Should avoidance and/or minimization not be practicable, a Mitigation Plan will be prepared. In addition, existing compensatory mitigation sites within the area of influence will be identified and reviewed. Further, best management practices will be utilized during project construction and all applicable permits (including an ERP) will be obtained in accordance with federal, state, and local laws and regulations.

Degree of Effect: 2 *Minimal* assigned 10/16/2015 by Mindy Parrott, South Florida Water Management District

Coordination Document: Permit Required
Coordination Document Comments:
A new ERP or modification of permit 88-00040-S would be required.

Direct Effects
Identified Resources and Level of Importance:
As described in the preliminary comments.

Comments on Effects to Resources:
None expected based on the project description and the preliminary evaluation. At the time of application for an Environmental Resource Permit, wetland and surface water impacts will be evaluated. Impacts to wetlands and surface waters must meet the criteria in Section 10 of Applicant's Handbook Volume I, including Elimination and Reduction as well as mitigation.

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Additional Comments (optional):
A new ERP or modification of permit 88-00040-S would be required.

CLC Recommendations:

Indirect Effects
Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Water Quality and Quantity

Project Effects

Coordinator Summary Degree of Effect: 3 *Moderate* assigned 12/09/2015 by FDOT District 4

Comments:
Presently, stormwater drainage and treatment is provided primarily by a series of dry swales and ponds. The project would increase the impervious area. A new ERP or modification of the existing permit 88-0040-S will be required from the SFWMD. FHWA, SFWMD, and FDEP concurred with a Minimal DOE to the issue of water quality and quantity provided that the project is designed to meet water quality and quantity criteria of the ERP Applicant's Handbook Volumes I and II, including Appendix E. USEPA assigned a Moderate rating due to the potential for contaminated stormwater runoff which could impact the Biscayne Sole Source Aquifer and Broward County's 2A Wellfield Protection Area. Therefore, the Summary DOE assigned to the Water Quality and Quantity issue is ***Moderate***.

During the PD&E phase, FDOT District Four will conduct a Water Quality Impact Evaluation, in accordance with Part 2, Chapter 20 of the FDOT PD&E Manual. FDOT will coordinate with appropriate agencies for the design of the proposed stormwater system and the requirements for stormwater treatment, evaluating existing stormwater treatment adequacy and details on the future stormwater treatment facilities. All necessary permits will be obtained in accordance with federal, state, and local laws and regulations. The project will be designed to meet state water quality and quantity requirements, and best management practices will be utilized during construction.

Degree of Effect: 2 *Minimal* assigned 10/16/2015 by Mindy Parrott, South Florida Water Management District

Coordination Document: Permit Required
Coordination Document Comments:
A new ERP or modification of 88-00040-S will be necessary.

Direct Effects
Identified Resources and Level of Importance:
As described in the preliminary evaluation.

Comments on Effects to Resources:
SFWMD concurs with the assignment of a minimal degree of effect, provided that the project is designed to meet the stormwater water quality and quantity criteria of the ERP Applicant's Handbook Vols. I & II., including appendix E.

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Additional Comments (optional):
A new ERP or modification of 88-00040-S will be necessary.

CLC Recommendations:

Indirect Effects
Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Floodplains

Project Effects

Coordinator Summary Degree of Effect: 3 *Moderate* assigned 12/09/2015 by FDOT District 4

Comments:
A new Environmental Resource Permit (ERP) or modification of the existing permit 88-0040-S will be required from the SFWMD. SFWMD and FHWA rated the floodplains issue as Minimal. USEPA rated the floodplains issue as Moderate because the PED Comments Report indicates that the project will increase the impervious area, which will increase stormwater runoff and affect existing drainage patterns in the surrounding area. Therefore, a Summary DOE of ***Moderate*** has been assigned to the Floodplain issue.

A Location Hydraulic Report will be prepared during the PD&E phase in accordance with the PD&E Manual, Part 2, Chapter 24.

Degree of Effect: 2 *Minimal* assigned 10/16/2015 by Mindy Parrott, South Florida Water Management District
Coordination Document: Permit Required
Coordination Document Comments:
A new ERP or modification of 88-00040-S will be necessary.

Direct Effects
Identified Resources and Level of Importance:
As described in the preliminary evaluation.

Comments on Effects to Resources:
SFWMD concurs with the assignment of a minimal degree of effect, provided that the project is designed to meet the stormwater water quality and quantity criteria of the ERP Applicant's Handbook Vols. I & II., including appendix E.

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Additional Comments (optional):
A new ERP or modification of 88-00040-S will be necessary.

CLC Recommendations:

Indirect Effects
Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Coastal and Marine

Project Effects

Coordinator Summary Degree of Effect: 0 *None* assigned 12/09/2015 by FDOT District 4

Comments:
The proposed project corridor is not located within a Coastal Barrier Resource Area, and Essential Fish Habitat is not located within the project limits. Consequently, FHWA, SFWMD, and NMFS anticipated that the effect to coastal and marine will be None; therefore, the Summary DOE is ***None***.

Degree of Effect: 0 *None* assigned 10/16/2015 by Mindy Parrott, South Florida Water Management District

Coordination Document: No Involvement

Direct Effects
Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Additional Comments (optional):

CLC Recommendations:

Indirect Effects
Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

ETAT Reviews and Coordinator Summary: Physical Contamination

Project Effects

Coordinator Summary Degree of Effect: 3 *Moderate* assigned 12/09/2015 by FDOT District 4

Comments:
A review of Geographic Information System data revealed the presence of dry cleaning sites, hazardous waste facilities, petroleum contamination monitoring sites, storage tank contamination monitoring sites, and Resource Conservation and Recovery Act regulated facilities within a quarter mile of the project, and two solid waste, CERCLA, and/or superfund sites within one mile of the project.

Due to the potential presence or documented presence of contamination associated with these sites and a Moderate degree of effect being assigned by SFWMD, USEPA, FDEP, and FHWA, a Summary DOE of ***Moderate*** has been assigned to the contamination issue.

A CSER will be prepared in accordance with Part 2, Chapter 22 of the FDOT PD&E Manual, including site specific surveys to assess existing or historical contamination sources and their proximity to construction activities. Contamination (including any required permits) will be evaluated during project development in accordance with federal, state and local laws and regulations. SFWMD noted that if dewatering is necessary, a water use permit may be required. A general permit under rule 40E-2.061(2), FAC may be applicable.

Degree of Effect: 3 *Moderate* assigned 10/16/2015 by Mindy Parrott, South Florida Water Management District

Coordination Document: Permit Required
Coordination Document Comments:
If dewatering is necessary, a water use permit may be required. A general permit is available in rule 40E-2.061(2), FAC. Projects that do not qualify for the general permit will require a water use permit from SFWMD.

Direct Effects
Identified Resources and Level of Importance:
Staff concurs with the preliminary evaluation.

Comments on Effects to Resources:
Construction methodologies, such as dewatering, must be designed to minimize movement of contaminant plumes.

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Additional Comments (optional):
If dewatering is necessary, a water use permit may be required. A general permit is available in rule 40E-2.061(2), FAC. Projects that do not qualify for the general permit will require a water use permit from SFWMD.

CLC Recommendations:

Indirect Effects
Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

ETAT Reviews and Coordinator Summary: Cultural

Recreation Areas

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 12/09/2015 by FDOT District 4

Comments:
There are three public parks owned and maintained by the City of Deerfield Beach in the project vicinity:
- Tivoli Sand Pine Park/Sand Pine Preserve located along SW 10th Street between SW 3rd Avenue and Natura Boulevard,
- Mayo Howard Park located at 1131 FAU Research Park Boulevard, and
- Westside Park located at 445 SW 2nd Street, south of Hillsboro Boulevard.

The project will be limited to existing right-of-way and therefore minimal impacts are anticipated to these resources. FHWA, SFWMD, USEPA, and FDEP also rated effects to recreation as minimal. NPS identified No Involvement. Therefore, a Summary DOE of ***Minimal*** has been assigned to the Recreation Areas issue.

Degree of Effect: 2 *Minimal* assigned 10/16/2015 by Mindy Parrott, South Florida Water Management District
Coordination Document: No Involvement

Direct Effects
Identified Resources and Level of Importance:
As described in the preliminary comments.

Comments on Effects to Resources:
As described in the preliminary comments.

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Additional Comments (optional):

CLC Recommendations:

Indirect Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Recommended Avoidance, Minimization, and Mitigation Opportunities:

Agency Comments - Project Effects

#14244 I-95 from SW 10th St to Hillsboro Blvd

District: District 4
County: Broward
Planning Organization: FDOT District 4
Plan ID: Not Available
Federal Involvement: FHWA Funding Other Federal Permit

Phase: Programming Screen
From:
To:
Financial Management No.: 436964-1-22-01

Contact Information: Anson Sonnett (954) 777-4474 anson.sonnett@dot.state.fl.us
Snapshot Data From: Current Draft Data

Alternative #1

Project Effects Overview for Alternative #1

Issue	Degree of Effect	Organization	Date Reviewed
Natural			
Wetlands	2 Minimal	US Army Corps of Engineers	10/09/2015
Physical			
Navigation	N/A N/A / No Involvement	US Army Corps of Engineers	10/09/2015

ETAT Reviews and Coordinator Summary: Natural

Wetlands

Project Effects

Coordinator Summary Degree of Effect: 3 *Moderate* assigned 12/09/2015 by FDOT District 4

Comments:

The surrounding area is largely developed, paved, cleared and landscaped, with minimal wetland habitat. Some of the stormwater swales located within and adjacent to the right-of-way may support hydrophytic vegetation, but are components of the highway drainage system and are constructed man-made features. Potential impacts to wetlands will be assessed during the PD&E study and avoidance and minimization strategies will be implemented during the design process. FHWA, FDEP, USFWS, SFWMD, and USACE assigned a Minimal DOE for the wetlands issue and emphasized the desire for avoidance and minimization strategies. NMFS rated wetlands impacts as None. USEPA rated wetlands as Moderate due to concern about contaminated stormwater runoff impacting the freshwater ponds in the project corridor. Therefore, the Summary DOE for the wetlands issue is ***Moderate***.

A new ERP or modification of the existing permit 88-0040-S will be required from the SFWMD. Depending on the extent of impacts jurisdictional palustrine wetlands, the project may qualify for the USACE Regional General Permit-92 or may be verified with a Nationwide Permit.

During the PD&E phase, further coordination will occur with the agencies to determine what documentation will be required to address agency concerns over potential wetland impacts. Necessary measures will be taken to avoid and/or minimize impacts to wetlands to the greatest extent practicable during project design. Should avoidance and/or minimization not be practicable, a Mitigation Plan will be prepared. In addition, existing compensatory mitigation sites within the area of influence will be identified and reviewed. Further, best management practices will be utilized during project construction and all applicable permits (including an ERP) will be obtained in accordance with federal, state, and local laws and regulations.

Degree of Effect: 2 *Minimal* assigned 10/09/2015 by Randy Turner, US Army Corps of Engineers

Coordination Document: Permit Required

Coordination Document Comments:

The project as proposed, may qualify for the Department of the Army's Regional General Permit (RGP) - 92 for impacts to the palustrine wetlands. Depending on the amount of proposed impacts to waters of the U.S., the project maybe verified with a Nationwide Permit.

Direct Effects

Identified Resources and Level of Importance:

A review of the EST revealed the presence of approximately 30.7 acres of palustrine wetlands within a 500 foot buffer; 13.4 palustrine acres within a 200 foot buffer; and, 7.9 acres within a 100 foot buffer. The project area is adjacent to heavily used roadway systems and a surface water canal tributary to the Hillsboro Canal along the west side of the project area. The only jurisdictional waters of the U.S. within the project area appear to be the surface waters of the canal and any adjacent wetlands. The other surface waters appear to be stormwater pond systems. The level of importance would be minimal.

Comments on Effects to Resources:

Upon initial review it appears that any wetland or surface water impacts could be avoided by bridge/culverting the canal waters. The palustrine wetlands are along existing, high-usage roadways which would have already been secondarily impacted so a functional assessment should reveal a lower quality of wetlands along the corridor.

Recommended Avoidance, Minimization, and Mitigation Opportunities:

The Corps recommends a continued emphasis on wetland avoidance and minimization opportunities throughout the planning process. A wetland survey should be conducted along the project corridor to identify any existing wetlands, and if any are found, a jurisdictional determination should be completed. A review of the Corps RIBITS indicates that all of the proposed project corridor

would traverse the geographical service areas of the federally approved FP&L Everglades Phase II Mitigation Bank (MB), which has 462.57 WATER assessed palustrine credits available; Florida Wetlandsbank at Pembroke Pines MB, which has 67.99 Integrated Functional Index assessed palustrine credits available; and Loxahatchee MB, which has 51.99 palustrine forested and 133.13 Modified WRAP palustrine emergent credits available. Any unavoidable wetland impacts should be assessed using the same assessment methodology of the MB (s) that credits may be purchased from.

Additional Comments (optional):
The project as proposed, may qualify for the Department of the Army's Regional General Permit (RGP) - 92 for impacts to the palustrine wetlands. Depending on the amount of proposed impacts to waters of the U.S., the project maybe verified with a Nationwide Permit.

CLC Recommendations:

Indirect Effects
Identified Resources and Level of Importance:
A review of the EST revealed the presence of approximately 30.7 acres of palustrine wetlands within a 500 foot buffer; 13.4 palustrine acres within a 200 foot buffer; and, 7.9 acres within a 100 foot buffer. The project area is adjacent to heavily used roadway systems and a surface water canal tributary to the Hillsboro Canal along the west side of the project area. The only jurisdictional waters of the U.S. within the project area appear to be the surface waters of the canal and any adjacent wetlands. The other surface waters appear to be stormwater pond systems. The level of importance would be minimal.

Comments on Effects to Resources:
Given the current project's location amid high-usage roadway systems, there should not be any significant additional effects to the canal or adjacent wetlands.

Recommended Avoidance, Minimization, and Mitigation Opportunities:
The Corps recommends a continued emphasis on wetland avoidance and minimization opportunities throughout the planning process. A wetland survey should be conducted along the project corridor to identify any existing wetlands, and if any are found, a jurisdictional determination should be completed. A review of the Corps RIBITS indicates that all of the proposed project corridor would traverse the geographical service areas of the federally approved FP&L Everglades Phase II Mitigation Bank (MB), which has 462.57 WATER assessed palustrine credits available; Florida Wetlandsbank at Pembroke Pines MB, which has 67.99 Integrated Functional Index assessed palustrine credits available; and Loxahatchee MB, which has 51.99 palustrine forested and 133.13 Modified WRAP palustrine emergent credits available. Any unavoidable wetland impacts should be assessed using the same assessment methodology of the MB (s) that credits may be purchased from.

ETAT Reviews and Coordinator Summary: Physical

Navigation

Project Effects

Coordinator Summary Degree of Effect: N/A *N/A / No Involvement* assigned 12/09/2015 by FDOT District 4

Comments:
USACE and FHWA assigned a DOE of None because no navigable waters were identified in the project area. Therefore, a Summary DOE of ***No Involvement*** has been assigned to the Navigation issue.

Degree of Effect: N/A *N/A / No Involvement* assigned 10/09/2015 by Randy Turner, US Army Corps of Engineers

Coordination Document: Permit Required
Coordination Document Comments:
Permit required for any discharge of fill material into waters of the U.S. Section 404 of the Clean Water Act.

Direct Effects
Identified Resources and Level of Importance:
No navigable waters were identified within the project area. The project will have no impacts to navigation.

Comments on Effects to Resources:
N/A

Recommended Avoidance, Minimization, and Mitigation Opportunities:
N/A

Additional Comments (optional):
Permit required for any discharge of fill material into waters of the U.S. Section 404 of the Clean Water Act.

CLC Recommendations:

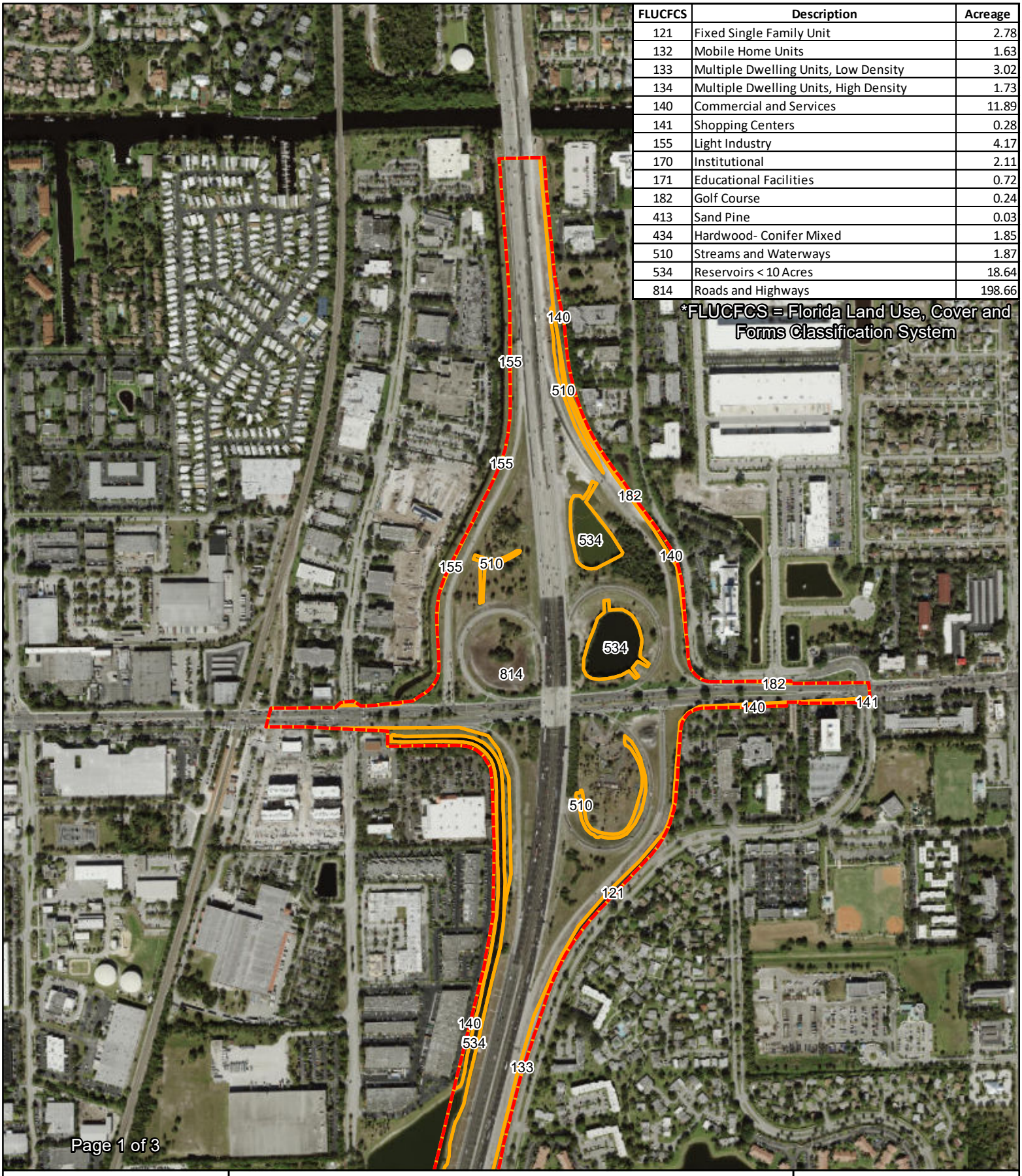
Indirect Effects
Identified Resources and Level of Importance:
N/A

Comments on Effects to Resources:
N/A

Recommended Avoidance, Minimization, and Mitigation Opportunities:
N/A

APPENDIX B-1

LAND USE/VEGETATIVE COVER MAPS



FLUCFCS	Description	Acreage
121	Fixed Single Family Unit	2.78
132	Mobile Home Units	1.63
133	Multiple Dwelling Units, Low Density	3.02
134	Multiple Dwelling Units, High Density	1.73
140	Commercial and Services	11.89
141	Shopping Centers	0.28
155	Light Industry	4.17
170	Institutional	2.11
171	Educational Facilities	0.72
182	Golf Course	0.24
413	Sand Pine	0.03
434	Hardwood- Conifer Mixed	1.85
510	Streams and Waterways	1.87
534	Reservoirs < 10 Acres	18.64
814	Roads and Highways	198.66

*FLUCFCS = Florida Land Use, Cover and Forms Classification System

MAP SOURCE: ESRI
DATA SOURCE: AECOM 2020 & SFWMD

Legend

Preferred Build Alternative

Preferred Build Alternative Soils

Existing Land Uses/Vegetative Cover
I-95 from SW 10th St to Hillsboro Blvd
PD&E Study
Preferred Build Alternative

Date: 7/8/2020

N
W E
S

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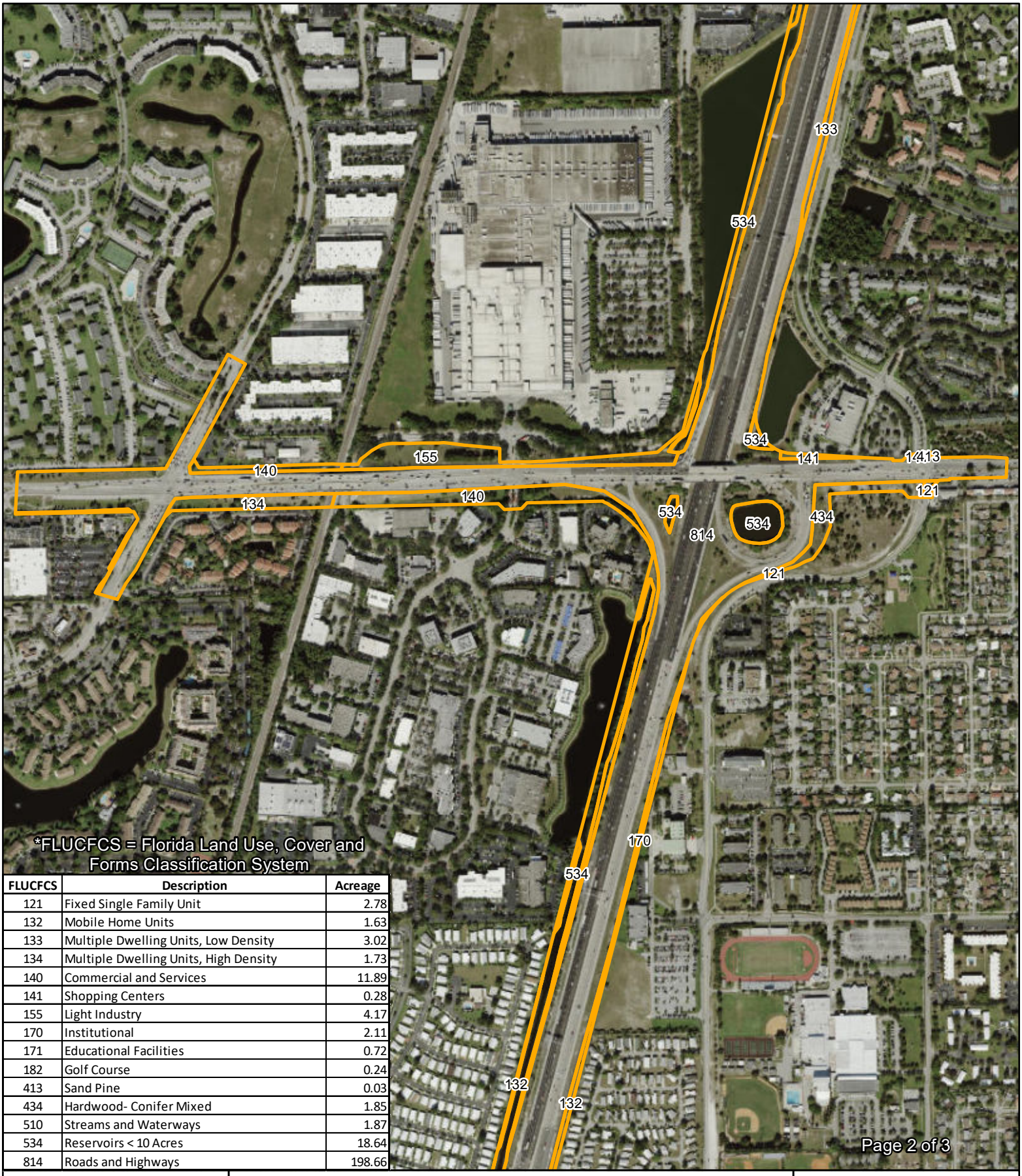

*FLUCFCS = Florida Land Use, Cover and Forms Classification System

FLUCFCS	Description	Acreage
121	Fixed Single Family Unit	2.78
132	Mobile Home Units	1.63
133	Multiple Dwelling Units, Low Density	3.02
134	Multiple Dwelling Units, High Density	1.73
140	Commercial and Services	11.89
141	Shopping Centers	0.28
155	Light Industry	4.17
170	Institutional	2.11
171	Educational Facilities	0.72
182	Golf Course	0.24
413	Sand Pine	0.03
434	Hardwood- Conifer Mixed	1.85
510	Streams and Waterways	1.87
534	Reservoirs < 10 Acres	18.64
814	Roads and Highways	198.66

MAP SOURCE: ESRI
DATA SOURCE: AECOM 2020 & SFWMD

Legend

Preferred Build Alternative

Preferred Build Alternative Soils

Existing Land Uses/Vegetative Cover
I-95 from SW 10th St to Hillsboro Blvd
PD&E Study
Preferred Build Alternative

Date: 7/8/2020

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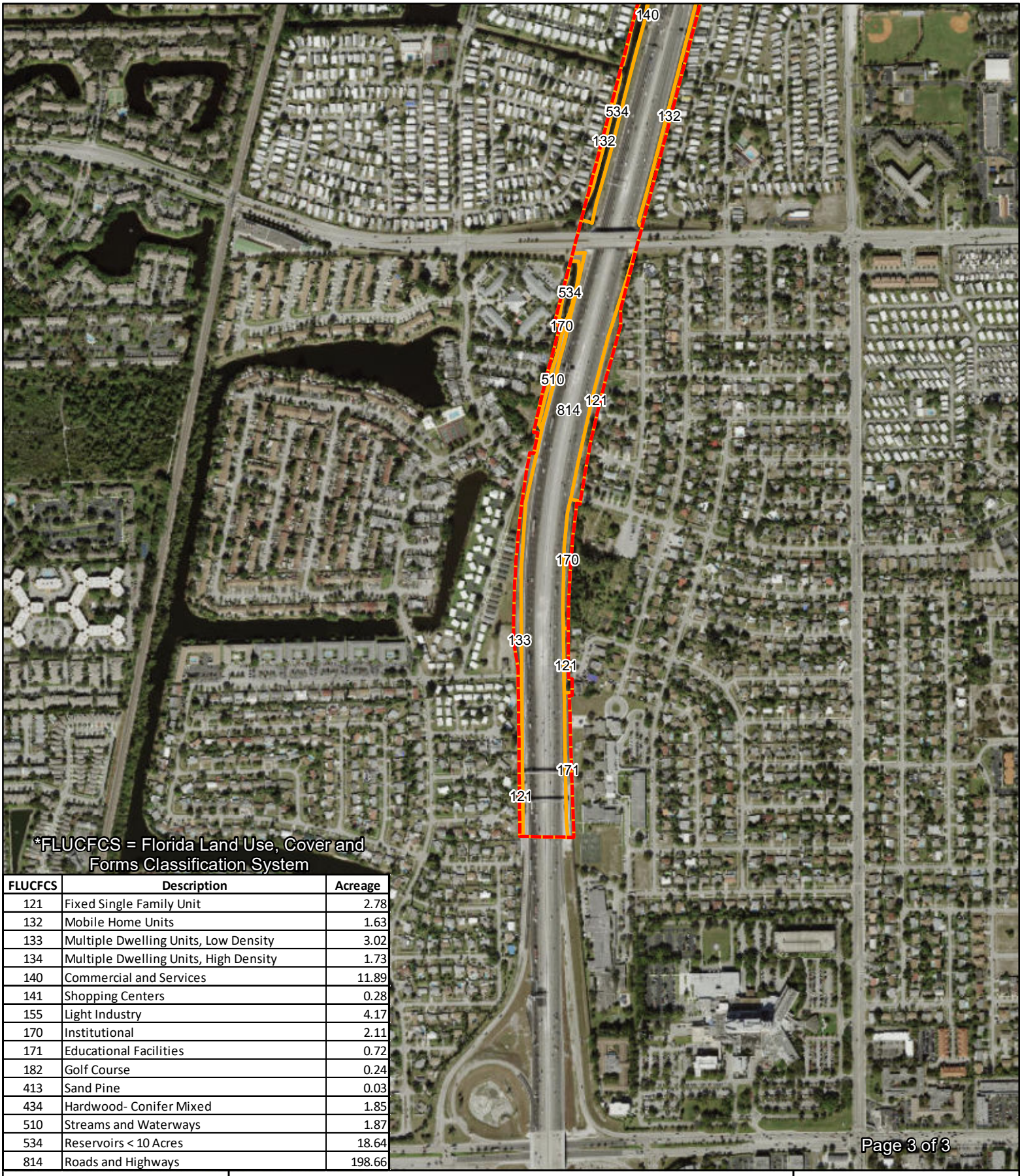

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MAP SOURCE: ESRI
DATA SOURCE: AECOM 2020 & SFWMD

Legend

Preferred Build Alternative

Preferred Build Alternative Soils

Existing Land Uses/Vegetative Cover
I-95 from SW 10th St to Hillsboro Blvd
PD&E Study
Preferred Build Alternative

Date: 7/8/2020

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APPENDIX B-2

LAND USE DESCRIPTIONS

EXISTING LAND USES/VEGETATIVE COVER

UPLAND COMMUNITIES

Residential, Medium Density - Fixed Single-Family Units
FLUCFCS: 121
This land use category consists of fixed single family units with two-to-five dwelling units per acre. This land use occurs along the northern and eastern portions of the existing I-95 corridor and comprises 0.84 acre (0.40%) of Central Build Alternative and 2.78 acres (1.11%) of the North Build Alternative.

Mobile Home Units
FLUCFCS: 132
This land use category consists of mobile home units with six or more dwelling units per acre. This land use occurs along the southern portion of the existing I-95 corridor and comprises 0.45 acres (0.22%) of Central Build Alternative and 1.63 acres (0.66%) of the North Build Alternative.

Multiple Dwelling Units, Low
FLUCFCS: 133
This land use category consists of multiple dwelling units with low rise, two stories or less. This land use occurs along the eastern portion of the existing I-95 corridor and along SW 10th Street, west of I-95. Multiple dwelling units comprise 1.39 acres (0.66%) of Central Build Alternative and 3.02 acres (1.21%) of the North Build Alternative.

Multiple Dwelling Units, High
FLUCFCS: 134
This land use category consists of multiple dwelling units with high rise, three stories or more. This land use occurs along the west side of the existing I-95 corridor along SW 10th Street Multiple dwelling units comprise 1.71 acres (0.81%) of Central Build Alternative and 1.73 acres (0.69%) of the North Build Alternative.

Commercial and Services
FLUCFCS: 140
Commercial and services is primarily devoted to the distribution of products and services and includes all secondary structures associated with an enterprise, such as sheds, warehouses, office buildings, driveways, parking lots, and surrounding landscapes. This land use traverses both sides of the existing I-95 corridor and comprises 12.24 acres (5.78%) of Central Build Alternative and 11.89 acres (4.78%) or the North Build Alternative.

Retail Sales and Services
FLUCFCS: 141
Retail sale and services land use classification primarily comprises of sales and services in central business districts, shopping centers, and office buildings including associated structures, driveways and parking lots. This land use type occurs along the east side of I-95 along the W Hillsboro Blvd. corridor, and comprises 0.28 acre (0.13%) of for the Central Build Alternative and 0.28 acre (0.11%) of the North Build Alternative.

Other Light Industrial
FLUCFCS: 155
Other light industrial land use classification includes steel fabrication businesses in addition to small boat and electronics manufacturing facilities. This land use type occurs along the west side of the I-95 corridor and along the north side of SW 10th Street Other light industrial land use comprises 2.60 acres (1.23%) of Central Build Alternative and 4.17 acres (1.67%) of the North Build Alternative.

Institutional
FLUCFCS: 170
Institutional land use includes all types of public and private facilities including schools, religious institutions, and health and military facilities. This land use category exists along the southeastern portion of the I-95 corridor and comprises 1.02 acres (0.48%) of the Central Build Alternative and 2.11 acres (0.85%) of the North Build Alternative.

Educational Facilities
FLUCFCS: 171
This category includes all supporting facilities including parking lots, stadiums, and all buildings and any other features that can be related to the facility. This land use category exists along the southern portion of the I-95 corridor and comprises 0.00 acre (0.00%) of the Central Build Alternative and 0.72 acre (0.29%) of the North Build Alternative.

Golf Courses
FLUCFCS: 182
This land use category defines recreational land use that is specifically designated as golf courses. Recreational areas are sites containing physical structures that indicate either active or potential user-oriented recreation. The golf course designation denotes an area located along the northeast boundary of the I-95 corridor, and comprises 0.24 acres (0.11%) of the Central Build Alternative and .24 acre (0.09%) of the North Build Alternative.

Sand Pine
FLUCFCS: 413
Sand Pine grows in deep, infertile deposits of marine sands and clay. There are two varieties of sand pine, both occur in Florida. This land use category occurs along the east side of I-95, on W Hillsboro Blvd., and comprises 0.03 acres (0.01%) of all Build Alternatives.

Hardwood-Conifer Mixed
FLUCFCS: 434
Hardwood-conifer mixed consists of forested areas in which neither upland conifers nor hardwoods achieve a 66-% crown canopy dominance. Dominant vegetation within this habitat type consists of longleaf pine, slash pine, live oak, and cabbage palm. Hardwood-conifer mixed habitat is located along the northern and southeastern portion of the existing I-95 corridor, and comprises 1.85 acres (0.87%) of the Central Build Alternative and 1.85 acres (0.74%) of the North Build Alternative.

Roads and Highways
FLUCFCS: 814
Roads and highways are transportation facilities used for the movement of people and goods. This category includes roadways and associated areas used for interchanges and limited access ROW, including pavement, medians, and buffers. Within the project study area, this includes the existing I-95 ROW, from south of NE 48th Street to north of W Hillsboro Blvd., as well as associated cross streets, center medians, grassed shoulders, and embankments. Wetlands and other surface waters located within the existing ROW were classified separately and excluded from the total acreage of the roads and highways designation. This land use category comprises 175.46 acres (82.9%) of Central Build Alternative and 198.66 acres (79.80%) of the North Build Alternative.

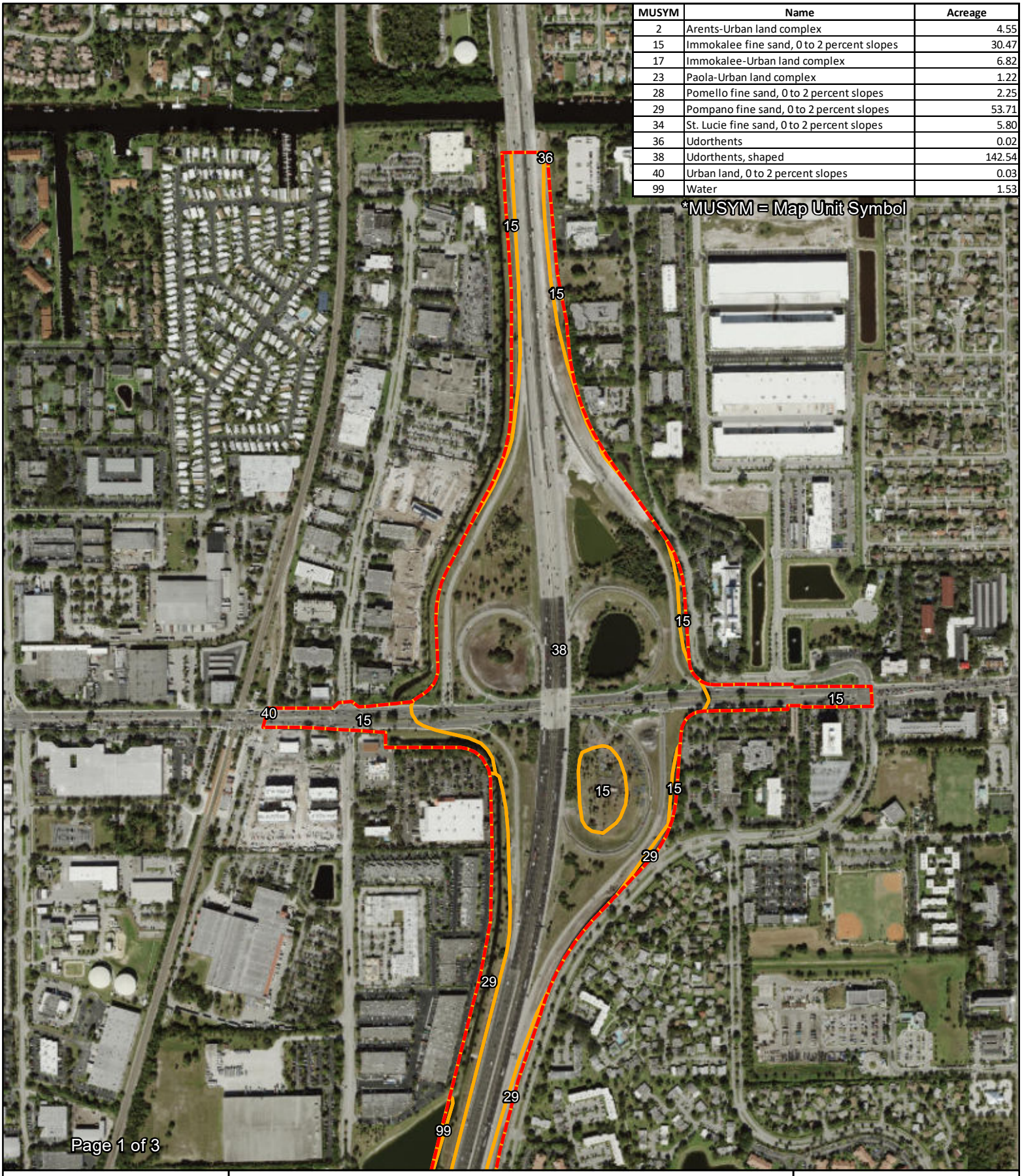
OTHER SURFACE WATER COMMUNITIES

Streams and Waterways
FLUCFCS: 510
FWS: PEM1Cx (Palustrine, Emergent, Persistent, Seasonally Flooded, Excavated)
This category includes rivers, creeks, canals, and other linear water bodies. Within the project study area, these surface water features consist of upland-cut drainage conveyances associated with the existing I-95 stormwater management system. Collectively, these surface waters comprise 1.50 acres (0.71%) of Central Build Alternative and 1.87 acres (0.75%) of the North Build Alternative.

Reservoirs Less than 10 acres
FLUCFCS: 534
FWS: POWHx (Palustrine, Open Water, Permanently Flooded, Excavated)
Reservoirs are artificial impoundments of water which are used for stormwater treatment and attenuation, flood control, irrigation, municipal and rural water supplies, recreation, and hydro-electric power generation. Within the project study area, these surface water features are comprised of stormwater ponds associated with the I-95 stormwater management system. These features collectively comprise 12.13 acres (5.73%) of Central Build Alternative and 18 acres (7.23%) of the North Build Alternative.

APPENDIX C-1

SOILS MAPS



MUSYM	Name	Acreage
2	Arents-Urban land complex	4.55
15	Immokalee fine sand, 0 to 2 percent slopes	30.47
17	Immokalee-Urban land complex	6.82
23	Paola-Urban land complex	1.22
28	Pomello fine sand, 0 to 2 percent slopes	2.25
29	Pompano fine sand, 0 to 2 percent slopes	53.71
34	St. Lucie fine sand, 0 to 2 percent slopes	5.80
36	Udorthents	0.02
38	Udorthents, shaped	142.54
40	Urban land, 0 to 2 percent slopes	0.03
99	Water	1.53

MAP SOURCE: ESRI
DATA SOURCE: AECOM 2020 & NRCS

Legend

Preferred Build Alternative

Preferred Build Alternative Soils

Soils Map
I-95 from SW 10th St to Hillsboro Blvd
PD&E Study
Preferred Build Alternative

Date: 7/8/2020

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* MUSYM = Map Unit Symbol

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DATA SOURCE: AECOM 2020 & NRCS

Legend

Preferred Build Alternative

Preferred Build Alternative Soils

Soils Map
I-95 from SW 10th St to Hillsboro Blvd
PD&E Study
Preferred Build Alternative

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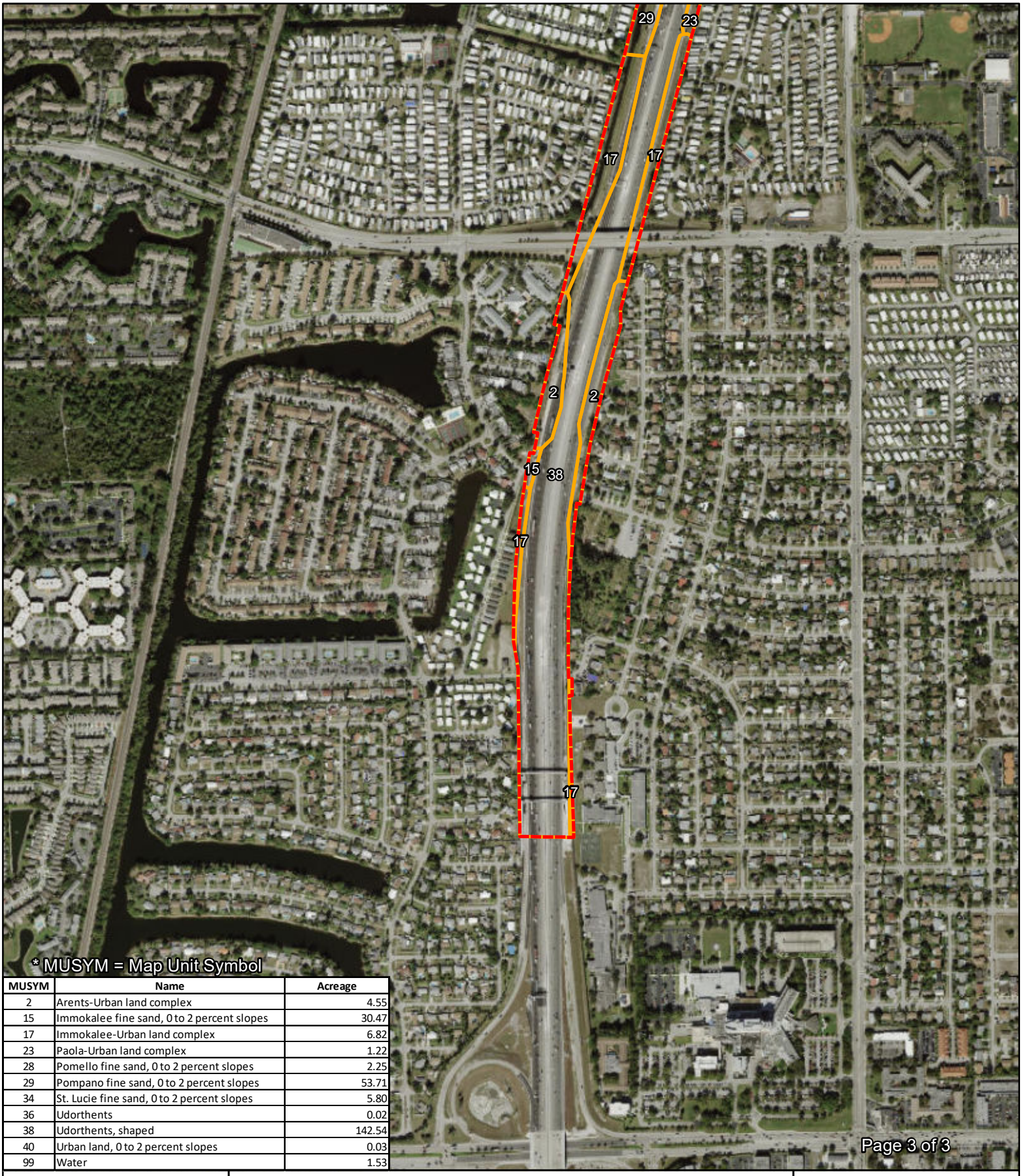

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99	Water	1.53

MAP SOURCE: ESRI
DATA SOURCE: AECOM 2020 & NRCS

Legend

Preferred Build Alternative

Preferred Build Alternative Soils

Soils Map
I-95 from SW 10th St to Hillsboro Blvd
PD&E Study
Preferred Build Alternative

Date: 7/8/2020

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APPENDIX C-2

SOILS DESCRIPTIONS

Soils Descriptions

Map Unit 2 – Arents-Urban land complex

Arents do not have diagnostic horizons because they have been deeply mixed by plowing, spading, or other methods of moving by humans. Arents are used mostly as cropland, urban land, or pasture. Some are used as wildlife habitat. Arents-Urban land complex is not ranked by the Hydric Soils of Florida Handbook (Hurt, 2007). This soil unit comprises 0.00 acre (0.00%) of the Central Alternative and 4.55 acres (1.83%) of the North Alternative.

Map Unit 15 – Immokalee fine sand, 0 to 2 percent slopes

This map unit consists of nearly level, poorly drained soils on flatwoods. The permeability of this soil is slow or very slow. The available water capacity is high. Under natural conditions, the seasonal high water table is within a depth of 10 inches for 1 to 4 months during most years. Immokalee fine sand is not classified as hydric by the Hydric Soils of Florida Handbook (Hurt, 2007). This soil unit comprises 30.13 acres (14.23%) of Central Alternative and 30.47 acres (12.24%) of the North Alternative.

Map Unit 17 - Immokalee-Urban land complex

The Immokalee series consists of very deep, very poorly and poorly drained soils that formed in sandy marine sediments. Immokalee soils are on flatwoods and low broad flats on marine terraces. Slopes range from 0 to 2 percent. Mean annual precipitation is about 1397 millimeters (55 inches) and the mean annual temperature is about 22 degrees C (72 degrees F). Immokalee-Urban land complex is not ranked by the Hydric Soils of Florida Handbook (Hurt, 2007). This soil unit comprises 0.00 (0.00%) of the Central Alternative and 6.82 acres (2.74%) of the North Alternative.

Map Unit 23 – Paola-Urban land complex

This nearly level, excessively drained soil is on low knolls and ridges on unconsolidated marine sediments. The permeability of this soil is high. The available water capacity is low. Under natural conditions, the seasonal high water table is below a depth of 80 inches for 1 to 6 months during most years. Paola-Urban land complex is not classified as hydric by the Hydric Soils of Florida Handbook (Hurt, 2007). This soil unit comprises 1.10 acres (0.52%) of Central Alternative and 1.22 acres (0.49%) of the North Alternative.

Map Unit 26 - Pomello fine sand, 0 to 2 percent slopes
The Pomello series consists of very deep, moderately well to somewhat poorly drained soils that formed in sandy marine sediments. Pomello soils are on ridges, hills, and knolls in the flatwoods on marine terraces. Slopes range from 0 to 5 percent. Mean annual precipitation is about 1397 millimeters (55 inches) and mean annual temperature is about 23 degrees C (72 degrees F). Pomello fine sand is not ranked by the Hydric Soils of Florida Handbook (Hurt, 2007). This soil unit comprises 2.29 acres (1.08%) of Central Alternative and 0.00 acres (0.00%) of North Alternative.

Map Unit 28 – Pomello fine sand, 0 to 2 percent slopes
This nearly level, moderately to well-drained soil is on low ridges east of the Everglades. The permeability of this soil is high. The available water capacity is low. Under natural conditions, the seasonal high water table is at a depth of 24 to 42 inches for 2 to 4 months during most years. Pomello fine sand is not ranked by the Hydric Soils of Florida Handbook (Hurt, 2007). This soil unit comprises 0.00 (0.00%) of the Central Alternative and 2.25 acres (0.90%) of the North Alternative.

Map Unit 29 – Pompano fine sand, 0 to 2 percent slopes
This nearly level, poorly drained sandy soil is found on sloughs and broad flats in the eastern part of the area. The permeability of this soil is very high, and the available water capacity is low. Under natural conditions, the seasonal high water table is within a depth of 10 inches or less for 2 to 6 months during most years. Pompano fine sand is classified as hydric by the Hydric Soils of Florida Handbook (Hurt, 2007). This soil unit comprises 45.52 acres (21.50%) of Central Alternative and 53.71 acres (21.58%) of the North Alternative.

Map Unit 34 – St. Lucie fine, 0 to 2 percent slopes
This nearly level, excessively drained soil is found on low knolls and ridges in the eastern part of the country. The permeability in this soil is high, and the available water capacity is low. Under natural conditions, the seasonal high water table is at a depth below 80 inches for 1 to 6 months during most years. St. Lucie fine sand is not ranked by the Hydric Soils of Florida Handbook (Hurt, 2007). This soil unit comprises 5.88 acres (2.78%) of Central Alternative and 5.80 acres (2.33%) of the North Alternative.

Map Unit 36 – Udorthents

This map unit consists of heterogeneous geologic material that has been excavated from canals and deposited along the bank or that has been hauled in from other locations and spread over natural soil. Where this material occurs as spoil mounds along canals or as embankments in highway interchanges and overpasses, the soil is well-drained to excessively drained, has slopes of 2 to 40 percent. Under natural conditions, the seasonal high water table does not exist within 80 inches throughout the year. The permeability is generally rapid. The available water capacity is very low. Udorthents is not ranked by the Hydric Soils of Florida Handbook (Hurt, 2007). This soil unit comprises 0.24 acres (0.11%) of Central Alternative and 0.02 acre (0.01%) of the North Alternative.

Map Unit 38 – Udorthents, shaped

This nearly level, somewhat poorly drained soil consists of material that has been shaped and contoured mainly for golf courses and major highways. Nearly all areas are covered with fill to a depth of 20 inches or more. The permeability of this soil is high. The available water capacity is low. Under natural conditions, the seasonal high water table is at a depth of 20 to 50 inches for most of the year. Udorthents, shaped is not ranked by the Hydric Soils of Florida Handbook (Hurt, 2007). This soil unit comprises 126.02 acres (59.52%) of Central Alternative and 142.54 acres (57.25%) of the North Alternative.

Map Unit 40 – Urban land

This map unit consists of areas that are more than 70 percent covered by airports, shopping centers, parking lots, large buildings, streets and sidewalks, and other structures, so that the natural soil is not readily observable. Unoccupied areas of this land type, mostly lawns, parks, vacant lots, and playgrounds, consist of soils in the Hallandale, Margate, Immokalee, and Basinger series that have been altered by fill material and spread on the surage to an average thickness of about 12 inches. These unoccupied areas are in tracts too small to be mapped separately. The fill is mostly sandy material, some of which contains limestone and shell fragments. This map unit is not assigned to a capability subclass and is not ranked by the Hydric Soils of Florida Handbook (Hurt, 2007). This soil unit comprises 0.03 acres (0.01%) of Central Alternative and 0.03 acre (0.01%) of the North Alternative.

APPENDIX D

IPAC RESOURCE LIST

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

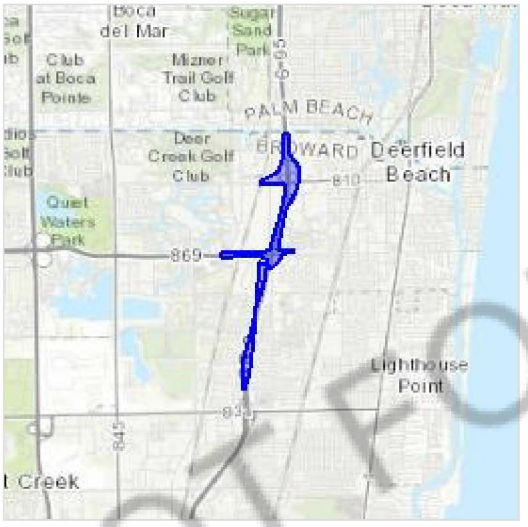
IPaC resource list

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

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

Location

Broward County, Florida



Local office

South Florida Ecological Services Field Office

(772) 562-3909
(772) 562-4288

1339 20th Street
Vero Beach, FL 32960-3559

http://fws.gov/verobeach

Endangered species

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

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

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

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

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

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

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

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

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

Mammals

NAME	STATUS
Florida Panther Puma (=Felis) concolor coryi No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1763	Endangered
Puma (=mountain Lion) Puma (=Felis) concolor (all subsp. except coryi) No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6049	SAT
Southeastern Beach Mouse Peromyscus polionotus niveiventris No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/3951	Threatened

Birds

NAME	STATUS
Everglade Snail Kite Rostrhamus sociabilis plumbeus There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/7713	Endangered
Ivory-billed Woodpecker Campephilus principalis No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8230	Endangered

Wood Stork Mycteria americana — Threatened
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/8477

Reptiles

NAME	STATUS

American Alligator Alligator mississippiensis — SAT
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/776

Eastern Indigo Snake Drymarchon corais couperi — Threatened
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/646

Hawksbill Sea Turtle Eretmochelys imbricata — Endangered
There is **final** critical habitat for this species. Your location is outside the critical habitat.
https://ecos.fws.gov/ecp/species/3656

Leatherback Sea Turtle Dermochelys coriacea — Endangered
There is **final** critical habitat for this species. Your location is outside the critical habitat.
https://ecos.fws.gov/ecp/species/1493

Loggerhead Sea Turtle Caretta caretta — Threatened
There is **final** critical habitat for this species. Your location is outside the critical habitat.
https://ecos.fws.gov/ecp/species/1110

Insects

NAME	STATUS

Bartram's Hairstreak Butterfly Strymon acis bartrami — Endangered
There is **final** critical habitat for this species. Your location is outside the critical habitat.
https://ecos.fws.gov/ecp/species/4837

Florida Leafwing Butterfly Anaea troglodyta floridalis — Endangered
There is **final** critical habitat for this species. Your location is outside the critical habitat.
https://ecos.fws.gov/ecp/species/6652

Miami Blue Butterfly Cyclargus (=Hemiargus) thomasi bethunebakeri — Endangered
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/3797

Flowering Plants

NAME	STATUS
Beach Jacquemontia Jacquemontia reclinata No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1277	Endangered
Tiny Polygala Polygala smallii No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/996	Endangered

Critical habitats

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

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

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

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

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

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

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

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

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
American Kestrel Falco sparverius paulus This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Apr 1 to Aug 31
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31
Common Ground-dove Columbina passerina exigua This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Feb 1 to Dec 31
King Rail Rallus elegans This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8936	Breeds May 1 to Sep 5
Least Tern Sterna antillarum This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Apr 20 to Sep 10

Lesser Yellowlegs Tringa flavipes This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Limpkin Aramus guarauna This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jan 15 to Aug 31
Magnificent Frigatebird Fregata magnificens This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Oct 1 to Apr 30
Prairie Warbler Dendroica discolor This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Prothonotary Warbler Protonotaria citrea This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 1 to Jul 31
Red-headed Woodpecker Melanerpes erythrocephalus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Ruddy Turnstone Arenaria interpres morinella This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Semipalmated Sandpiper Calidris pusilla This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere

Short-tailed Hawk Buteo brachyurus — Breeds Mar 1 to Jun 30
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/8742

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

Willet Tringa semipalmata — Breeds Apr 20 to Aug 5
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Yellow Warbler Dendroica petechia gundlachi — Breeds May 20 to Aug 10
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Probability of Presence Summary

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

Probability of Presence (■)

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

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

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

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

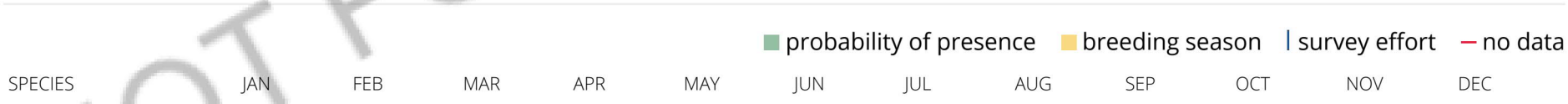
Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

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

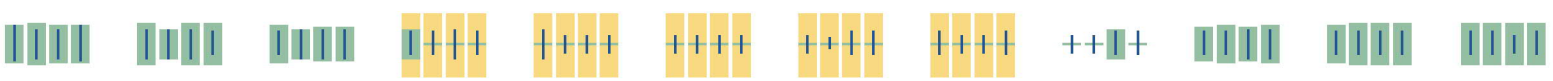
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

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

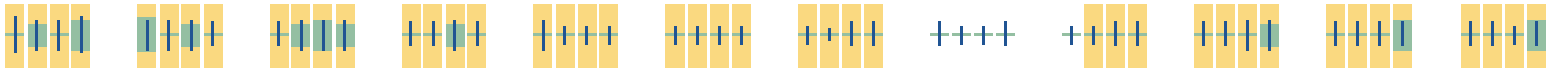
Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



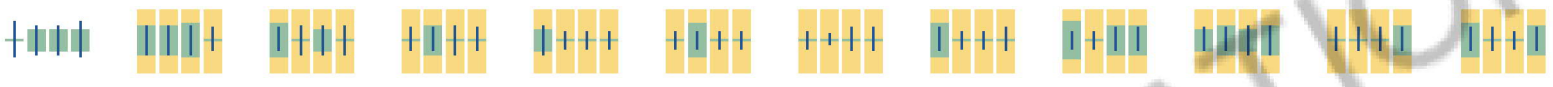
American Kestrel
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



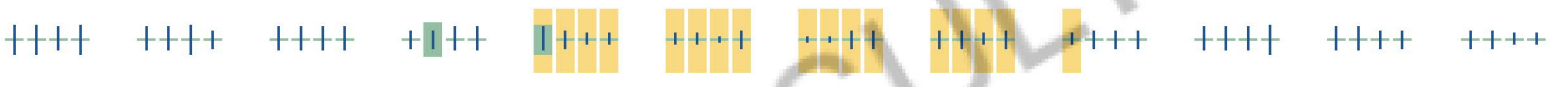
Bald Eagle
Non-BCC Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)



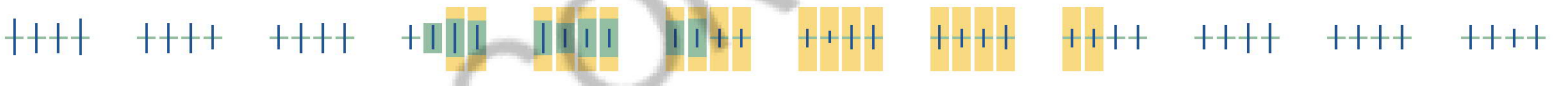
Common Ground-dove
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



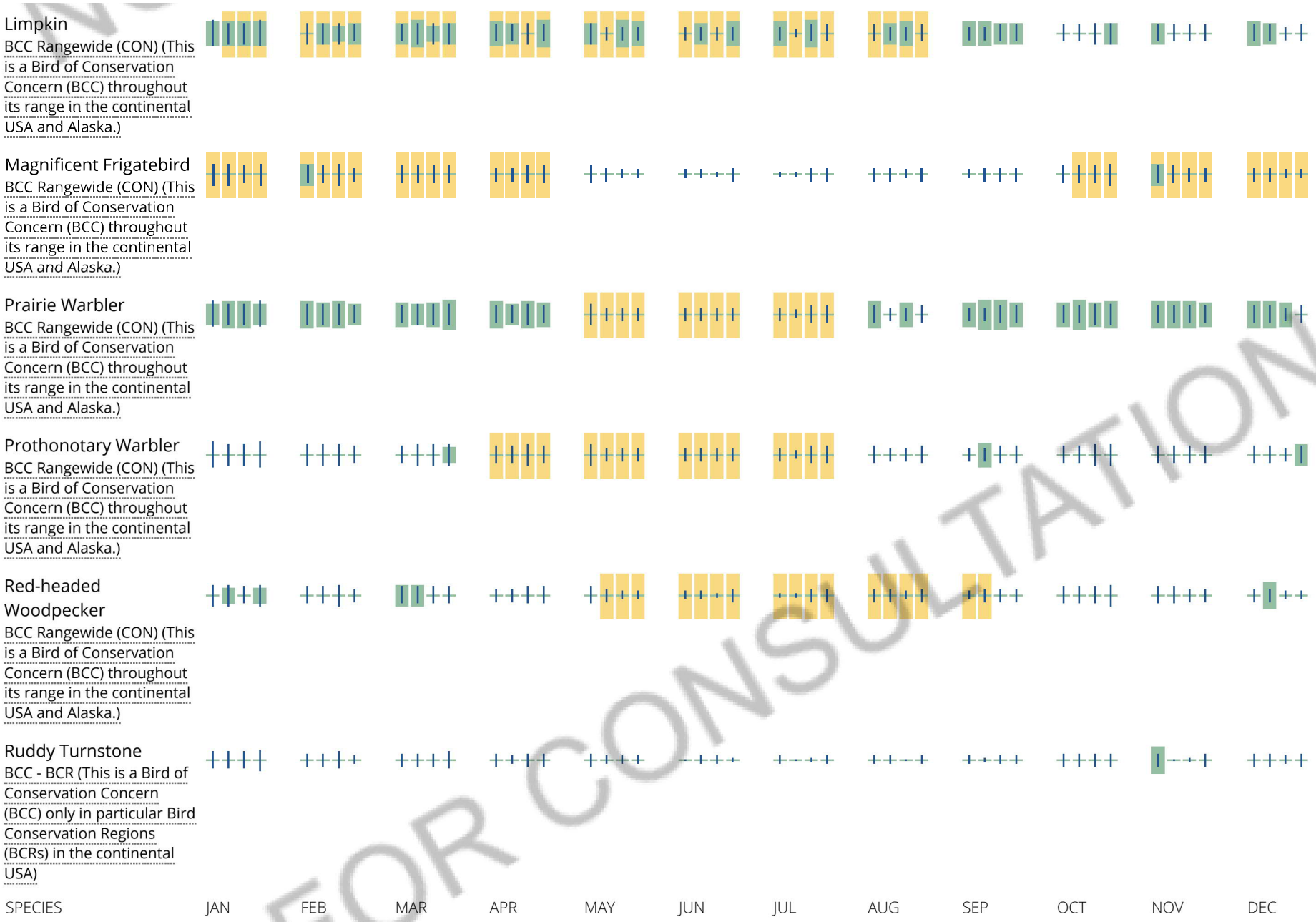
King Rail
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

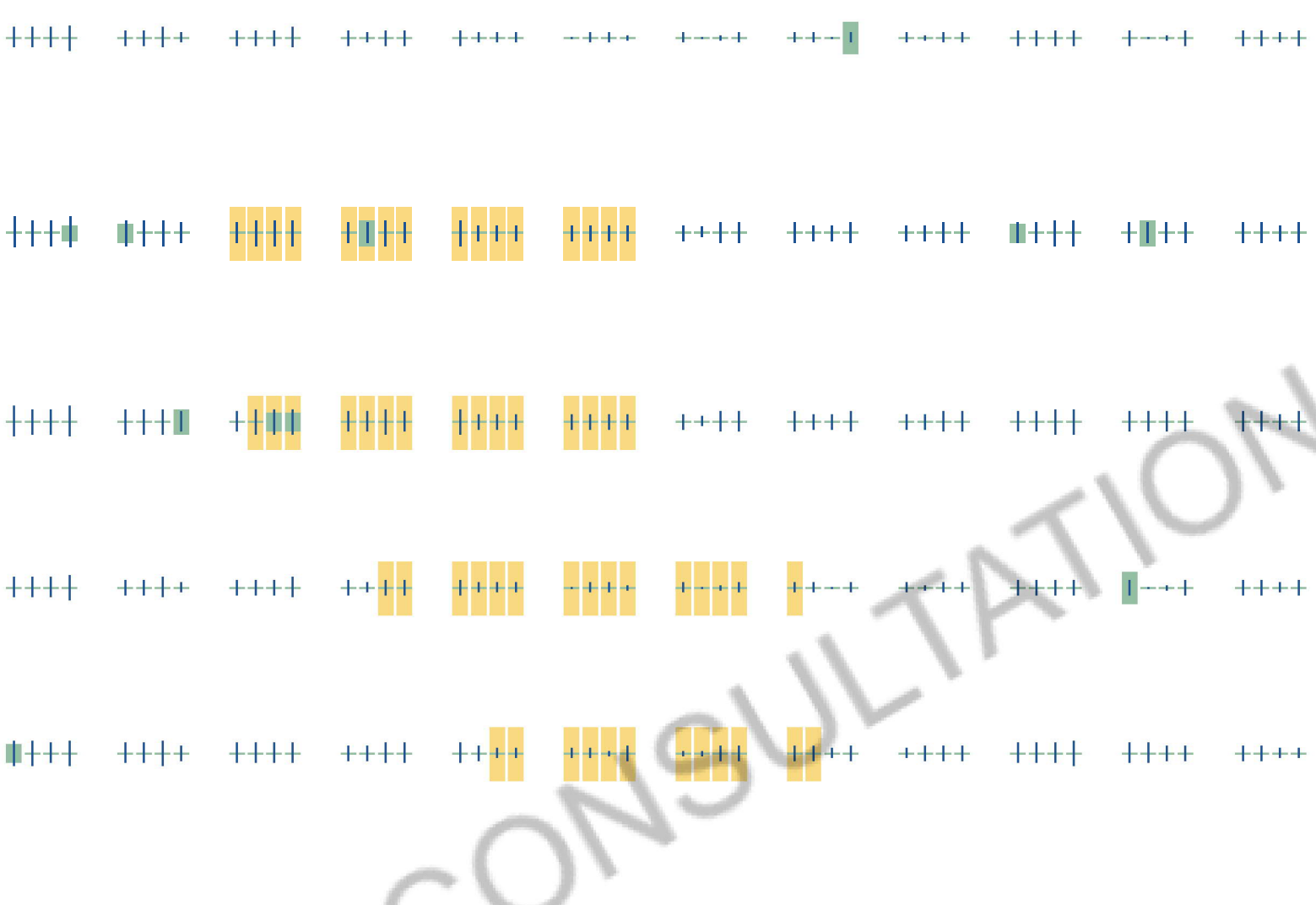


Least Tern
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



Lesser Yellowlegs
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)





Semipalmated Sandpiper
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Short-tailed Hawk
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

Swallow-tailed Kite
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Willet
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Yellow Warbler
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

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

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

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

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

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

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

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

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

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

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

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

energy development or longline fishing).

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

Details about birds that are potentially affected by offshore projects

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

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

What if I have eagles on my list?

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

Proper Interpretation and Use of Your Migratory Bird Report

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

Facilities

National Wildlife Refuge lands

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

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

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

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

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER POND

PUBHx

RIVERINE

R2UBHx

A full description for each wetland code can be found at the National Wetlands Inventory website

Data limitations

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

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

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

Data exclusions

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

Data precautions

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

APPENDIX E

STANDARD PROTECTION MEASURES FOR THE EASTERN INDIGO SNAKE

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

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

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

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

POSTER INFORMATION

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

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

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

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

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

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

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

IF YOU SEE A <u>LIVE</u> EASTERN INDIGO SNAKE ON THE SITE:

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

IF YOU SEE A <u>DEAD</u> EASTERN INDIGO SNAKE ON THE SITE:

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

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

North Florida Field Office – (904) 731-3336
Panama City Field Office – (850) 769-0552
South Florida Field Office – (772) 562-3909

PRE-CONSTRUCTION ACTIVITIES

1. The applicant or designated agent will post educational posters in the construction office and throughout the construction site, including any access roads. The posters must be clearly visible to all construction staff. A sample poster is attached.

2. Prior to the onset of construction activities, the applicant/designated agent will conduct a meeting with all construction staff (annually for multi-year projects) to discuss identification of the snake, its protected status, what to do if a snake is observed within the project area, and applicable penalties that may be imposed if state and/or federal regulations are violated. An educational brochure including color photographs of the snake will be given to each staff member in attendance and additional copies will be provided to the construction superintendent to make available in the onsite construction office (a final brochure for Plan compliance, to be printed double-sided on 8.5" x 11" paper and then properly folded, is attached). Photos of eastern indigo snakes may be accessed on USFWS and/or FWC websites.

3. Construction staff will be informed that in the event that an eastern indigo snake (live or dead) is observed on the project site during construction activities, all such activities are to cease until the established procedures are implemented according to the Plan, which includes notification of the appropriate USFWS Field Office. The contact information for the USFWS is provided on the referenced posters and brochures.

DURING CONSTRUCTION ACTIVITIES

1. During initial site clearing activities, an onsite observer may be utilized to determine whether habitat conditions suggest a reasonable probability of an eastern indigo snake sighting (example: discovery of snake sheds, tracks, lots of refugia and cavities present in the area of clearing activities, and presence of gopher tortoises and burrows).

2. If an eastern indigo snake is discovered during gopher tortoise relocation activities (i.e. burrow excavation), the USFWS shall be contacted within one business day to obtain further guidance which may result in further project consultation.

3. Periodically during construction activities, the applicant's designated agent should visit the project area to observe the condition of the posters and Plan materials, and replace them as needed. Construction personnel should be reminded of the instructions (above) as to what is expected if any eastern indigo snakes are seen.

POST CONSTRUCTION ACTIVITIES

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

APPENDIX F

SURFACE WATER PHOTOGRAPHS

INDIVIDUAL SURFACE WATER PHOTOGRAPHS

Photo 1: Surface Water Feature 1 – facing south from center region
FLUCFCS – 534 / FWS – POWHx

Photo 2: Surface Water 1 – facing north from center region
FLUCFCS – 534 / FWS – POWHx

Photo 3: Surface Water 2 – facing south from north edge
FLUCFCS – 534 / FWS – POWHx

Photo 4: Surface Water 3 – facing south from north region
FLUCFCS – 534 / FWS - POWHx

Photo 5: Surface Water 4 – facing southeast from north region
FLUCFCS – 534 / FWS POWHx

Photo 6: Surface Water 5 – facing northeast from west edge
FLUCFCS – 534 / FWS – POWHx

Photo 7: Surface Water 6 – facing east from west side of infield
FLUCFCS – 510 / FWS – PEM1Cx

Photo 8: Surface Water 7 – facing southeast from north edge
FLUCFCS – 534 / FWS – POWHx

Photo 9: Surface Water 8 – facing northwest from southeast shoreline
FLUCFCS – 534 / FWS – POWHx

Photo 10: Surface Water 9 – facing south from north culvert
FLUCFCS – 510 / FWS – PEM1Cx

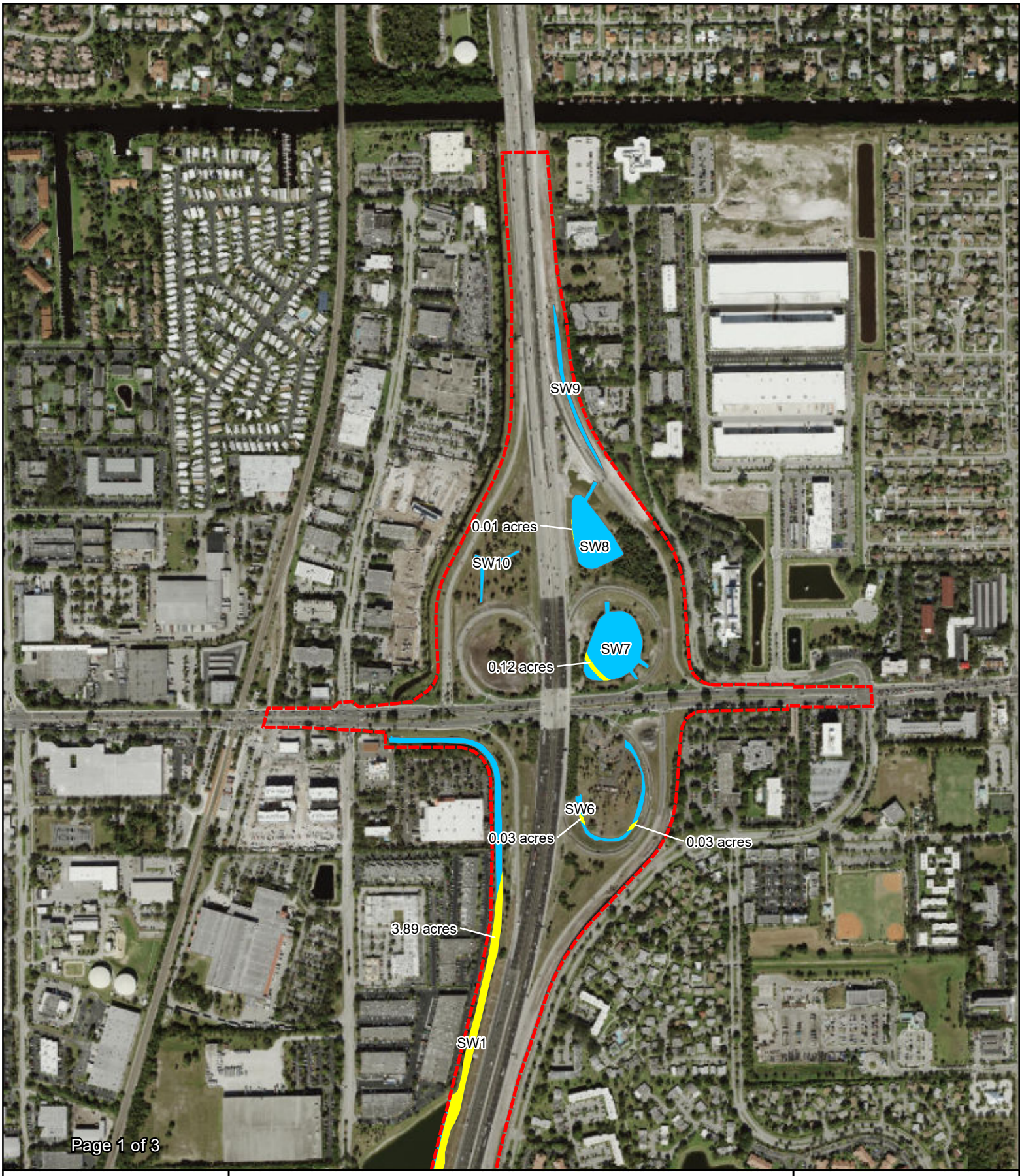
Photo 11: Surface Water 10 – facing north from south edge of swale
FULCFCS – 510 / FWS – PEM1Cx

Photo 12: Surface Water 11 – facing north from south culvert
FLUCFCS – 534 / FWS – POWHx

Photo 13: Surface Water 12 – facing north from south edge
FULCFCS – 510 / FWS – PEM1Cx

APPENDIX G

SURFACE WATER IMPACT LOCATIONS



MAP SOURCE: ESRI
DATA SOURCE: AECOM 2020

Legend

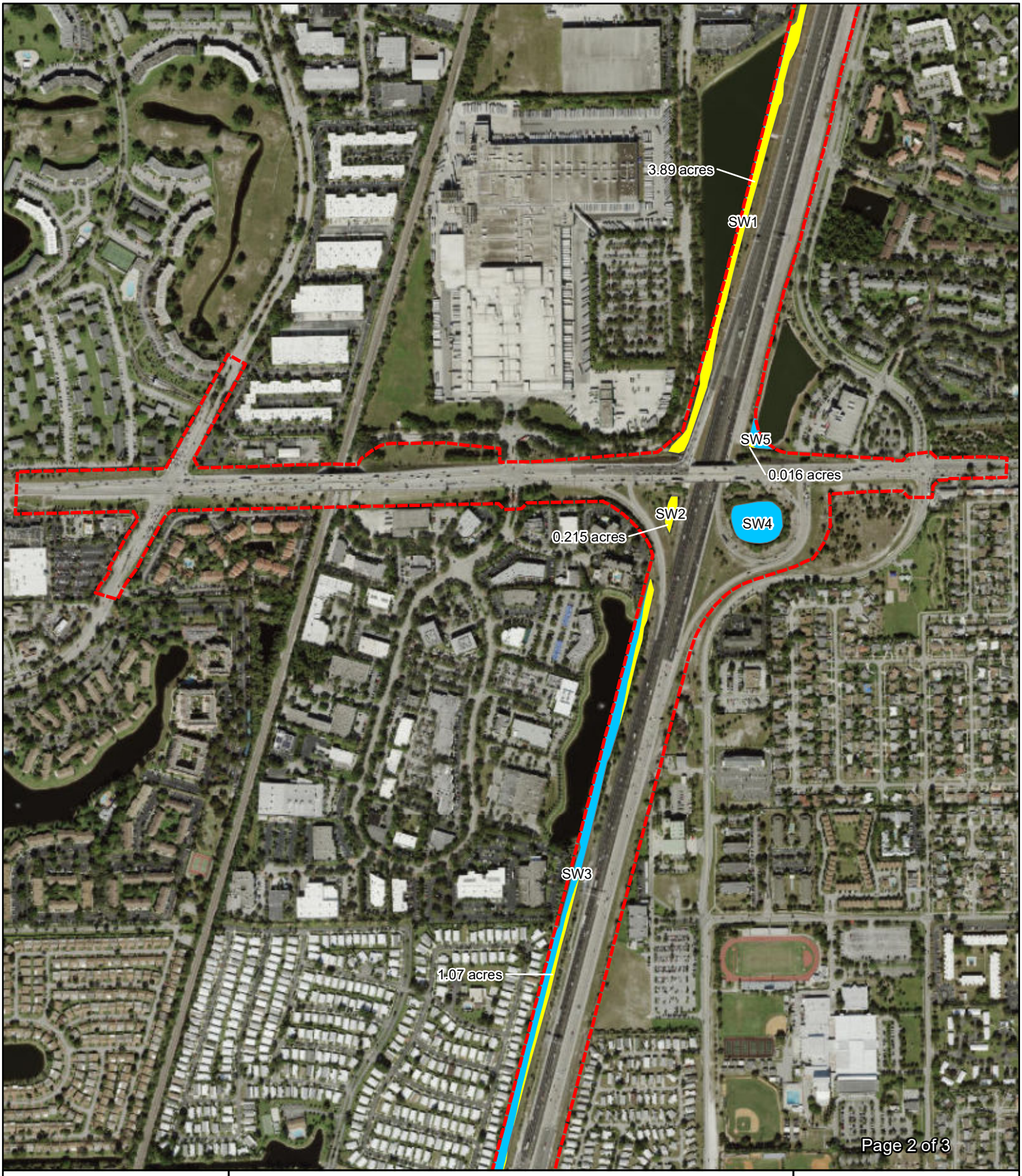
- Preferred Build Alternative
- Surface Waters
- Impact

Surface Water Impact Location
I-95 from SW 10th St to Hillsboro Blvd
PD&E Study
Preferred Build Alternative

Date: 7/8/2020

N
W E
S

0 250 500 1,000
Feet



MAP SOURCE: ESRI
DATA SOURCE: AECOM 2020

Legend

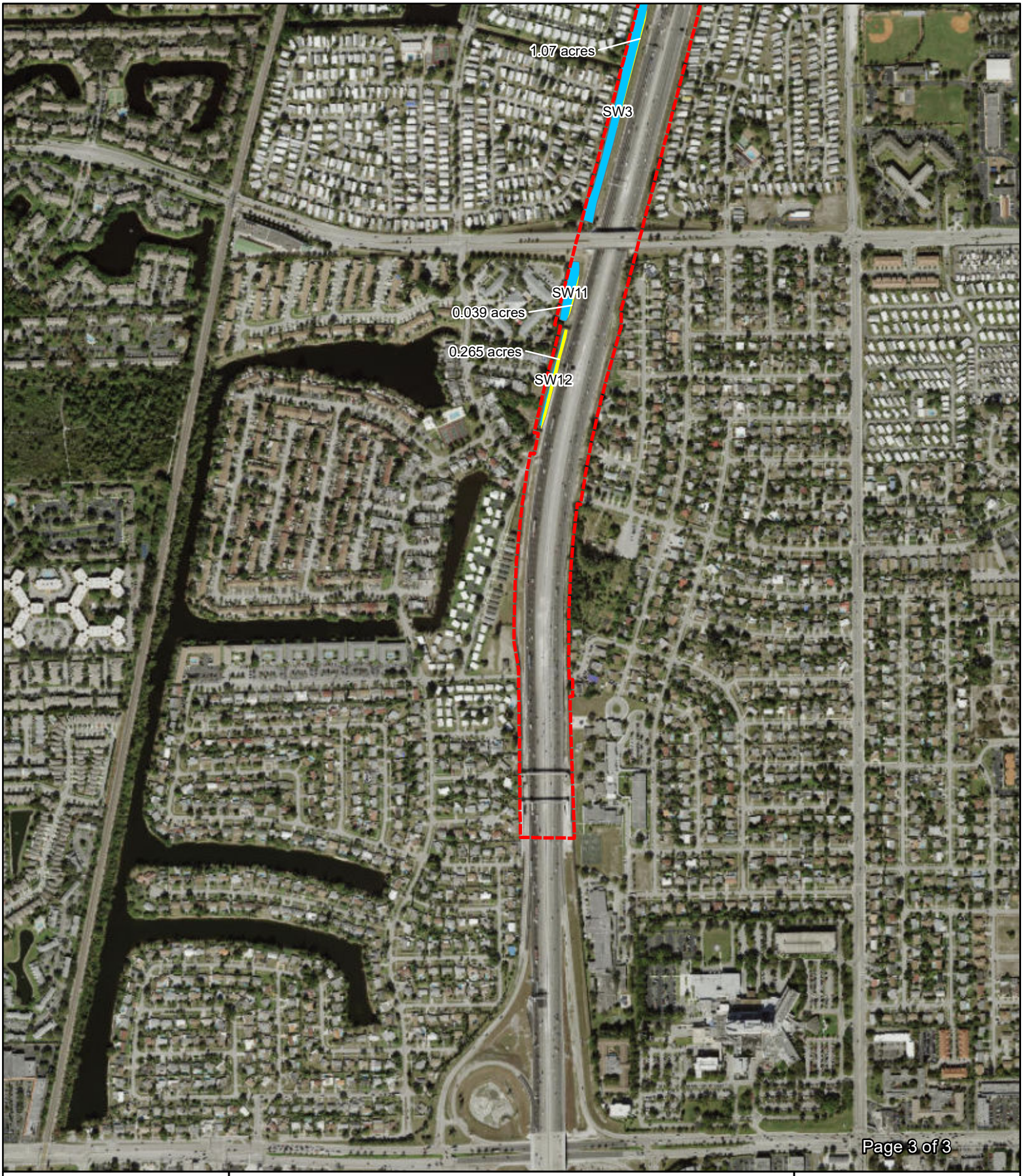
- Preferred Build Alternative
- Surface Waters
- Impact

Surface Water Impact Location
I-95 from SW 10th St to Hillsboro Blvd
PD&E Study
Preferred Build Alternative

Date: 7/8/2020

N
W E
S

0 250 500 1,000
Feet



MAP SOURCE: ESRI
DATA SOURCE: AECOM 2020

Legend

- Preferred Build Alternative
- Surface Waters
- Impact

Surface Water Impact Location
I-95 from SW 10th St to Hillsboro Blvd
PD&E Study
Preferred Build Alternative

Date: 7/8/2020

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APPENDIX H

INTERAGENCY MEETING AGENDA & MINUTES

Agenda Summary: One project for District 4
9:00 AM – 9:30 AM: 436964-1-22-01; SR 9/I-95 from SW 10th Street to Hillsboro Boulevard

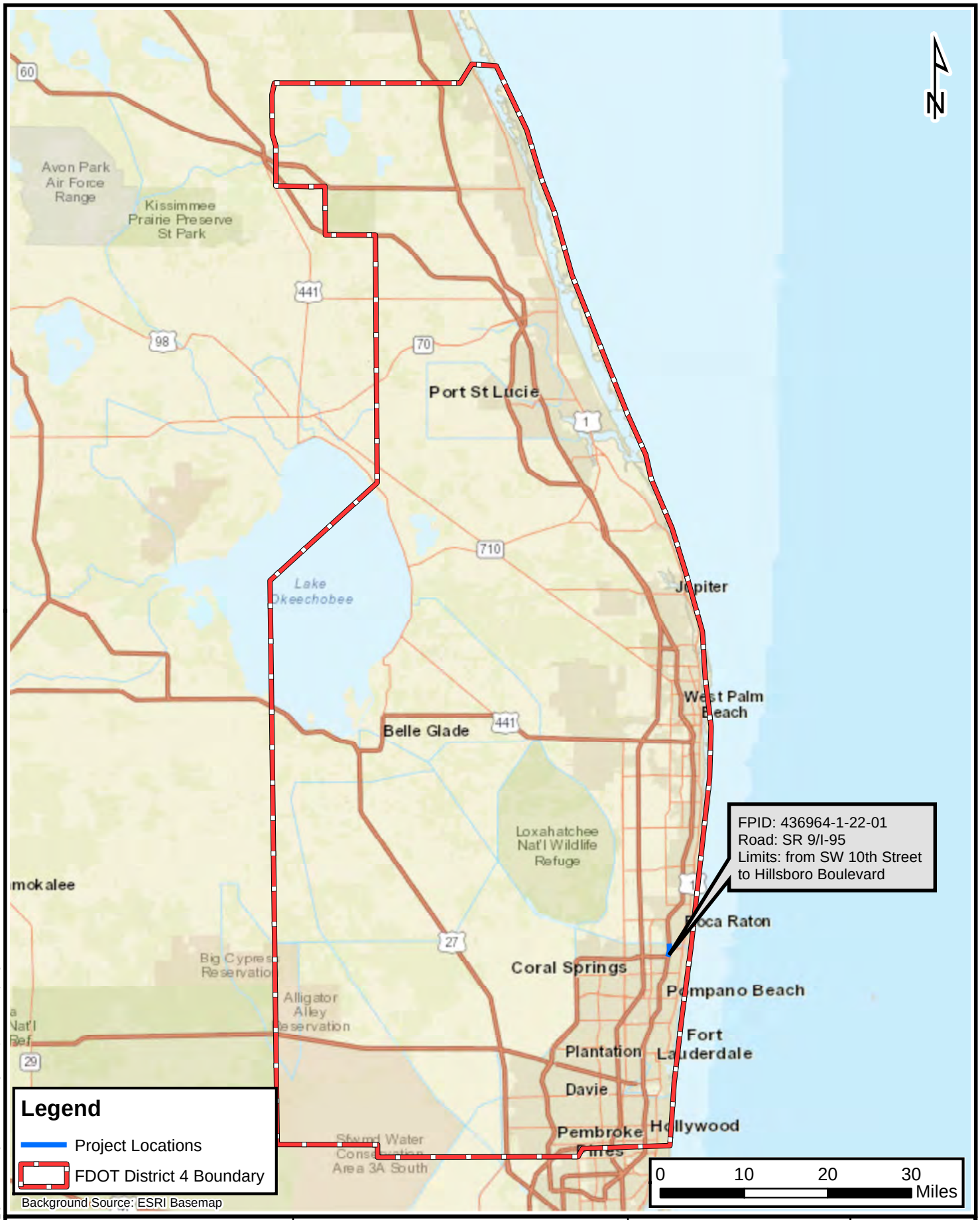
9:00 – 9:30 (District 4 Project, see Figure 1)
1) FPID/FM Number: 436964-1-22-01
2) FDOT Project Manager: Anson Sonnet
3) Consultant/Company Name: HNTB
4) SR/Local Name: SR 9/I-95
5) Project Limits: from SW 10th Street to Hillsboro Boulevard
6) General Scope (include Phase of project - PD&E, Design, Design/Build, Construction, etc.): PD&E Study
7) Does your project include impacts to any environmental resources? If yes, please answer Questions 7a, 7b and 7c:

7a) Have wetland and/or protected species impacts been identified? If so define the impact amount and type: Impacts to surface water drainage features (retention areas/swales) - less than one acre (no impacts to wetlands)

7b) Have project representatives met with PLEMO to discuss avoidance and minimization criteria? Has PLEMO concurred these criteria were applied? (For District IV projects, if elimination and reduction has not been explored with PLEMO, participation in this meeting is not permitted): N/A - no wetland involvement

7c) Have mitigation options for unavoidable impacts been discussed with PLEMO, and concurrence on the amount and type been achieved? (For District IV projects, if elimination and reduction has not been explored with PLEMO, participation in this meeting is not permitted): No mitigation anticipate - no wetland involvement. Impacts to drainage system to be mitigated with construction of new drainage system.

8) Provide specific agenda discussion topic(s): Project Introduction, Review of Viable Design Alternatives, Drainage Discussion, Environmental Impacts Discussion
9) Requested Attendees: SFWMD Environmental Resources and Surface Water Management, and USACE
10) For projects going into the permitting phase: Has a pre-application meeting been held or any preliminary correspondence been made by FDOT PM or Consultant with the regulatory agencies/reviewers? Specify the agencies and dates when meetings were held: N/A
11) For project in the permitting phase, please provide the reviewer's name: N/A
12) Anticipated Permits (or, if you already applied for or received any permits, please forward the application/permit numbers): SFWMD ERP, USACE NWP
13) Discussion Time Needed: 30 minutes



P:\Projects\2-800-89912-0887-0034_figures and drawings\GIS\June 2018 Agenda Map\June 2018 Map - Figure - 1 - District 4.mxd

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FDOT District 4 - SFWMD Interagency Meeting Agenda June 2018

Project Locations Map
District 4

FIGURE
1

DRAWN BY: AC	CHECKED BY: JEF	PROJECT NUMBER: 2-0887-003	SCALE: 1 inch = 15 miles	DATE: 6/11/2018

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT IV INTERAGENCY MEETING MINUTES

TO: Hui Shi, Florida Department of Transportation (FDOT) District 4
FROM: Justin Freedman, E Sciences, Incorporated
MEETING DATE: June 21, 2018
LOCATION: South Florida Water Management District (SFWMD)
3301 Gun Club Road, West Palm Beach, Florida
SUBJECT: FDOT Interagency Meeting Minutes

Meeting started at 9:00 AM: FM 436964-1-22-01

Attendees:

Name	Organization	Email Address
Vilma Croft	HNTB	vcroft@hntb.com
Keith Stannard	AECOM	keith.stannard@aecom.com
Brian McCarthy	HNTB	bmccarthy@hntb.com
Robert Bostion	FDOT	Robert.Bostion@dot.state.fl.us
Barbara Conmy	SFWMD	bconmy@sfwmd.gov
Carlos de Rojas	SFWMD	cderojas@sfwmd.gov
Brian Voelker	E Sciences	bvoelker@esciencesinc.com

District: Four
FPID/FM Number: 436964-1-22-01
FDOT Project Manager: Anson Sonnet
Consultant/Company Name: HNTB
SR/Local Name: SR 9/I-95
Project Limits: From SW 10th Street to Hillsboro Boulevard
General Scope: Roadway widening (Design)
Requested Attendees: SFWMD ERP, USACE NWP
Discussion Items:

- Vilma Croft provided an overview of the project *as described in the project summary hand out* (**see attachment**). Items discussed included:
  - Project limits
  - Project is part of SIS system
  - Purpose and need and secondary considerations
  - Build alternatives – two along SW 10th Street
  - Operational improvements also proposed (off-system intersection improvements, round-about)
  - Some minor ROW acquisition proposed (from Publix and City of Deerfield Beach)

- Brian McCarthy provided an overview of the drainage components of project *as described in the project summary hand out* (**see attachment**). Items discussed included:
  - Existing conditions
    - Within Broward County Water Control District #2
    - Within City of Deerfield Beach Wellfield Zone of Influence
    - Discharge locations provided

        - No OFW impacts
        - Five drainage basins associated with project and two offsite basins
    - Proposed Conditions
        - Proposing to contain stormwater management system within ROW
        - Provide treatment and attenuation within Hillsboro Boulevard interchange
        - Converting dry facilities to wet facilities
        - Expanding wet facilities due to interchange shift
        - Some C-1 Canal impacts anticipated
        - Stormwater analysis is ongoing
        - May need offsite floodplain compensation sites (i.e. within separate project to the west)
            - Carlos de Rojas responded by stating that this concept could be feasible to SFWMD, pending further investigation
        - Some stormwater storage proposed in median
        - Looking at acquiring some ROW areas along north side of project for stormwater management

- Keith Stannard provided an overview of the environmental components of project *as described in the project summary hand out* (**see attachment**). Items discussed included:
    - No wetlands in corridor
    - Some drainage areas/surface water features will be impacted and replaced in kind
    - Listed species - wood stork habitat may be offset with replacement drainage features
    - Cultural resources – coordinating with State Historic Preservation Office
    - No Section 4(f) resource impacts anticipated
    - Contamination – eight potential sites identified; drainage design will avoid impacts
    - Noise impacts will be offset by noise walls; no air impacts anticipated

- Vilma Croft discussed public involvement items *as listed in the project summary hand out* (**see attachment**).
    - Kick of meetings, March and April 2017
    - Alternatives Workshop in April 2018
    - Public Hearing proposed for January 2019
    - Completion of PD&E study anticipated in May 2019
    - Permitting anticipated to be complete by the end of 2019

Meeting ended at 9:30 AM.

FDOT Interagency Meeting - June 21, 2018

436964-1-22-01 - SR 9/I-95 from SW 10th Street to Hillsboro Boulevard

Name	Organization	Email Address
VILMA CROFT	HNTB	VCROFT@HNTB.COM
Keith Stannard	AECOM	keith.stannard@aecom.com
Carlos deRojas	SFWMD	cderojas@sfwmd.gov
Robert Bostrom	FDOT	Robert.Bostrom@dot.state.fl.us
Bob Conmy	SFWMD	bconmy@sfwmd.gov
Brian Voelker	E Sciences	bvoelker@esciencesinc.com
BRIAN MCCARTHY	HNTB	BMCARTHY@HNTB.COM

FDOT

Financial Management Number: 436964-1-22-01

Efficient Transportation Decision Making Number: 14264

Project Development & Environment (PD&E) Study

SR 9/I-95

From South of SW 10th Street to North of Hillsboro Boulevard

June 21, 2018

Presentation Outline

- Project Purpose and Need
- Build Alternatives
- Environmental Analysis
- Public Involvement

Study Area

PD&E Study Limits

South of SW 10 Street to North of Hillsboro Boulevard

City

Deerfield Beach

Strategic Intermodal System (SIS) and National Highway System (NHS) Facility

Hurricane Evacuation Route

Purpose and Need

PRIMARY NEED

- Capacity/Operational Deficiencies
- Safety

- I-95 segment within the Hillsboro Boulevard interchange area is classified as a high crash segment
- Crash rates along SW 10th Street in the vicinity of I-95 exceed the statewide average for similar facilities for all 5 study years

Purpose and Need

SECONDARY CONSIDERATIONS

- Evacuation and Emergency Services
- Transportation Demand
- System Linkage
- Modal Interrelationships
- Social Demands and Economic Development

Build Alternatives- I-95

Build Alternatives - SW 10th Street

North Alignment

FDOT SR 9/I-95 from South of SW 10th Street to North of Hillsboro Boulevard

Build Alternatives - SW 10th Street

Center Alignment

FDOT SR 9/I-95 from South of SW 10th Street to North of Hillsboro Boulevard

Drainage and Floodplain

Existing Conditions

- Within BCWCD #2
- Within City of Deerfield Beach Wellfield zone of influence
- Discharging to BCWCD C-1 and C-2 canals
- No OFW
- Impacts to FEMA 100-yr floodplain

5 Drainage Basins

Drainage and Floodplain

Proposed Conditions

Approach

- Stormwater management facilities within the FDOT ROW
- Compensatory treatment within the Hillsboro Blvd Interchange
- Convert dry facilities into wet
- Expansion of existing wet facilities

Potential roadway impacts to BCWCD C-1 Canal

- Along southbound I-95 between Hillsboro Blvd and SW10th St
- Along interchange ramp traveling from SW10th St to southbound I-95

Stormwater analysis is on-going

- Floodplain analysis is on-going
  - May need offsite floodplain compensation sites

Drainage and Floodplain

Potential SMF Locations along SW 10th

Drainage and Floodplain

Potential SMF Locations along Hillsboro Blvd

Environmental Analysis

Natural Environment

Wetlands and Surface Waters

Total acreage of wetlands within project area = 0.0 acres (impacts both alternatives are identical)

Total acreage of surface water features within project area = 14.44 acres (impact acres is anticipated to be very low based on preliminary alternative footprints – less than 1 acre)

Stormwater retention areas and/or linear drainage conveyance features (swales) will be impacted by the project. These features are all permitted stormwater facilities; therefore, mitigation should not be required.

Threatened and Endangered Species

An evaluation is currently being conducted to determine loss of wood stork foraging habitat. Any loss is expected to be replaced with construction of the new drainage system.

Environmental Analysis

Cultural and Socio-Cultural Environment

Historic and Archaeological - Anticipate No Adverse Effect

- Hillsboro Canal,
- Seaboard Coast RR
- SCL Railroad Depot

Section 4(f) – Approved DOA and No use

- Mayo Howard Park
- Oveta McKeithen Recreational Complex
- Tivoli Sand Preserve
- Willie James Linear Park

Environmental Analysis

- **Physical Environment**
- Contamination

  Eight (8) sites were identified to pose possible contamination concerns to the proposed project.

  The risk ratings for these sites are provided below:
  Five (5) No Risk sites,
  Two (2) Low Risk sites
  One (1) Medium Risk site

Environmental Analysis

Site	Property Description	Permit # / Facility ID	Environmental Compliance Agency	Regulated Storage Tanks	Contamination Concern/ Regulatory Status	Risk Rating
N1	Former Dry-clean USA 1379 South Military Trail Deerfield Beach FL 33441	9500804	FDEP	No	Drycleaners	No
N2	One Stop Dry Cleaning and Shoe Repair 1323 South Military Trail Deerfield Beach FL 33441	9800795	FDEP	No	Drycleaners	No
N3	Personal Choice Linen and Laundry Inc. 160 SW 12th Avenue, Deerfield Beach, FL 33442	9814933	FDEP	No	Drycleaners	No
N4	7-Eleven Store No. 34801 1200 W Hillsboro Blvd. Deerfield Beach FL 33442	8502350	FDEP	Yes	Petroleum	No
N5	Posh French Cleaners 498 W Hillsboro Blvd Deerfield Beach FL 33441	9500590	FDEP	No	Drycleaners	No
L1	Marathon – Deerfield Petro Inc 299 W Hillsboro Blvd Deerfield Beach FL 33441	8501838	FDEP	Yes	Petroleum	Low
L2	Deerfield Country Club 50 Fairway Dr Deerfield Beach FL 33441	18988	Broward County	No	Arsenic, Pesticides, and Herbicides	Low
M1	Deerfield Shell 301 W Hillsboro Blvd Deerfield Beach FL 33441	8943503	FDEP	Yes	Petroleum	Medium

Environmental Analysis

Environmental Analysis

- **Physical Environment**
- Air Quality
  - Air Quality Screening
  - Reduced congestion = improved air quality
- Noise Analysis

In accordance with Chapter 18 of the PD&E Manual (Noise), noise impacts due to the improvements planned with the I-95/SW 10th Street PD&E are being evaluated at noise sensitive locations along I-95 and SW 10th Street.

Field monitoring of existing noise levels along this segment of I-95 and SW 10th Street were measured during Spring 2018.

Environmental Analysis

As a result of the FDOT's 2013 PD&E for the I-95 Express Project (FPID 409355-1-22-01/409359-1-22-01), a 20-foot tall ground-mounted noise barrier was recommended along the eastern right-of-way line of I-95 between the SW 10th Street and Hillsboro Boulevard interchanges to mitigate traffic noise impacts to the Natura and Tivoli Park communities.

- The I-95 Express project is now under construction as a Design-Build
- The Natura/Tivoli Park noise barrier is scheduled to begin construction Summer 2018.

Environmental Analysis

The improvements planned with the I-95/SW 10th Street PD&E include elevated braided ramps along the outside of the northbound lanes north of SW 10th Street.

- These improvements may result in physical impacts to the Natura/Tivoli Park noise barrier.
- Also, the height of the elevated ramps may impact the effectiveness of the south end of the Natura/Tivoli Park noise barrier.
- The physical and performance impacts of the proposed improvements are being evaluated at this time.
- Anticipated that some modifications to the Natura/Tivoli Park noise barrier may be recommended prior to construction.

Public Involvement

MEETINGS

- Elected Officials/Agencies/Public Kick-off Meeting – March 14, 2017
- Public Kick-off Meeting – April 6, 2017
- Alternatives Public Workshop – April 24, 2018
- Public Hearing – January 2019
- LDCA – May 2019

Project Contact

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Florida Department of Transportation – District Four
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Fort Lauderdale, FL 33309
Phone: 954-777-4427
Email: Robert.Bostian@dot.state.fl.us

ONE TEXT OR CALL COULD WRECK IT ALL

CLICK IT OR TICKET