

Natural Resources Evaluation

Florida Department of Transportation

District VI

SR 826 / Palmetto Expressway Express Lanes

Limits of Project: From US 1 / SR 5/Dixie Highway to SR 836 / Dolphin Expressway

Miami-Dade, Florida

Financial Management Number: 432639-1

ETDM Number: 14308

Date: 9/13/19

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.

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## EXECUTIVE SUMMARY

The Florida Department of Transportation (FDOT) is conducting a Project Development and Environment (PD&E) Study, in accordance with the National Environmental Policy Act (NEPA), to assess corridor improvements that will add highway and interchange capacity with the implementation of an express lanes system and interchange improvements. Presently, the No Build Alternative and several Build Alternatives are being considered as part of this PD&E Study.

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, protected habitats, and Essential Fish Habitat (EFH). 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 (Protected Species and Habitat) 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 six federally listed animal species, four state listed animal species, three state listed plant species, and two federally 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*) and the osprey (*Pandion haliaetus*) 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 state-designated Critical Habitat exists for the West Indian manatee (*Trichechus manatus*) within the C-3 (Coral Gables Canal), C-4 Canal (Tamiami Canal), North

Line Canal, and Loop Canal. Based on the availability of habitat, including designated Critical Habitat, the potential for occurrence of this species within the study area is High. However, no West Indian manatees were observed during the field surveys.

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

Common Name	Scientific Name	Federal Status	State Status	Occurrence Potential	Effect Determination
<b>Mammals</b>					
Florida Bonneted Bat	<i>Eumops floridanus</i>	E	FE	Low	May affect, not likely to adversely affect
West Indian Manatee <sup>(1)</sup>	<i>Trichechus manatus</i>	T	FT	High	May affect, not likely to adversely affect
<b>Reptiles</b>					
American Crocodile	<i>Crocodylus acutus</i>	T	FT	Low	No effect
Eastern Indigo Snake	<i>Drymarchon corais couperi</i>	T	FT	Low	No effect
<b>Birds</b>					
Bald Eagle <sup>(2)</sup>	<i>Haliaeetus leucocephalus</i>	NL	NL	Moderate	N/A
Osprey <sup>(2)</sup>	<i>Pandion haliaetus</i>	NL	NL	High	N/A
Everglade Snail Kite	<i>Rostrhamus sociabilis plumbeus</i>	E	FE	Low	No effect
Wood Stork	<i>Mycteria americana</i>	T	FT	Moderate	May affect, not likely to adversely affect
Little Blue Heron	<i>Egretta caerulea</i>	NL	ST	Moderate	No effect anticipated
Reddish Egret	<i>Egretta rufescens</i>	NL	ST	Low	No effect anticipated
Roseate Spoonbill	<i>Platalea ajaja</i>	NL	ST	Low	No effect anticipated
Southeastern American Kestrel	<i>Falco sparverius paulus</i>	NL	ST	High	No effect anticipated
<b>Plants</b>					
West Indian mahogany	<i>Swietenia mahagoni</i>	NL	T	High	No effect (planted as part of landscaping along roadway)

Florida royal palm	<i>Roystonea regia</i>	NL	E	High	No effect (planted as part of landscaping along roadway)
Simpson's stopper	<i>Myrcianthes fragrans</i>	NL	T	High	No effect (planted as part of landscaping along roadway)
Carter's small-flowered Flax	<i>Linum carteri carteri</i>	E	FE	Low	No effect
Florida brickell-bush	<i>Brickellia mosieri</i>	E	FE	Low	No effect

Federal Status: E = Endangered, T = Threatened, NL = Not Listed

State Status: FE = Federally-designated endangered, FT = Federally-designated threatened, NL = Not Listed, ST = State threatened.

<sup>1</sup> The West Indian manatee, including the Florida manatee subspecies, is also federally-protected by the *Marine Mammal Protection Act*.

<sup>2</sup> The bald eagle and osprey are not listed by the FWS or FWC but still federally-protected by the *Bald and Golden Eagle Protection Act* and the *Migratory Bird Treaty Act*.

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, three SFWMD-owned canals, one Miami Dade County-owned canal, six surface water features, twelve stormwater detention/retention features, and nine drainage conveyance 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.

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 EFH]. Therefore, no EFH discussion is included in this NRE.

**Table ES - 2: Summary of Individual Surface Waters**

Name	Acres in Study Area	FLUCFCS Code	FLUCFCS Description	FWS Wetland Classification
SF01	0.22	510	Streams and Waterways	PEM1A/h
SF02	0.03	510	Streams and Waterways	PEM1A/h
SF03	0.04	510	Streams and Waterways	PEM1A/h
SF04	1.41	530	Reservoirs	PUBHx
SF05	0.35	530	Reservoirs	PUBHx
SF06	1.11	530	Reservoirs	PUBHx
SF07	2.19	530	Reservoirs	PUBHx
SF08	0.25	530	Reservoirs	PUBHx
SF09	0.87	530	Reservoirs	PUBHx
SF10	0.87	510	Streams and Waterways	PEM1A/h
SF11	0.12	530	Reservoirs	PUBHx
SF12	0.12	510	Streams and Waterways	PEM1A/h
SF13	0.50	510	Streams and Waterways	PEM1A/h
SF14	1.29	530	Reservoirs	PUBHx
SF15	0.17	530	Reservoirs	PUBHx
SF16	0.05	510	Streams and Waterways	PEM1A/h
SF17	0.02	510	Streams and Waterways	PEM1A/h
SF18	0.22	530	Reservoirs	PUBHx
SF19	2.44	530	Reservoirs	PUBHx
SF20	0.64	530	Reservoirs	PUBHx
SF21	1.35	530	Reservoirs	PUBHx
SF22	7.57	530	Reservoirs	PUBHx
SF23	1.28	530	Reservoirs	PUBHx
SF24	2.97	530	Reservoirs	PUBHx
SF25	0.00	530	Reservoirs	PUBHx
SF26	1.52	530	Reservoirs	PUBHx
SF27	0.63	530	Reservoirs	PUBHx
Snapper Creek Canal (C-2)	2.87	510	Streams and Waterways	R2UBHx / R5UBH
Coral Gables Canal (C-3)	12.80	510	Streams and Waterways	R2UBHx
Tamiami Canal (C-4)	3.49	510	Streams and Waterways	R2UBHx
North Line Canal	2.82	510	Streams and Waterways	R2UBHx

PEM1A/h – palustrine, emergent, persistent, temporarily flooded/permanently flooded

PUBHx – palustrine, unconsolidated bottom, permanently flooded, excavated

R2UBHx – riverine, lower perennial, unconsolidated bottom, permanently flooded, excavated

R5UBHx - riverine, unknown perennial, unconsolidated bottom, permanently flooded, excavated

## 1.0 PROJECT OVERVIEW

### 1.1 Project Description and Location

The Florida Department of Transportation (FDOT) District Six has recently started a Project Development and Environment (PD&E) Study for SR 826 (Palmetto Expressway) from US 1 (SR 5) to SR 836 (Dolphin Expressway), a distance of approximately seven miles (see [Figure 1-1](#)). The PD&E Study is proposing corridor improvements that will add highway and interchange capacity with the implementation of an express lanes system and interchange improvements. The project is located in Miami-Dade County, Florida and is contained within unincorporated Miami-Dade.

The PD&E Study will evaluate the following potential types of improvements:

- Implementation of dynamically priced express lanes.
- Access and ramp connections to and from the express lanes (ingress and egress access points).
- Interchange improvements – Modification of existing entrance and exit ramps serving the interchanges within the project limits.
- Intersection improvements – Widening and turn lane modifications along the cross streets to facilitate the ramp modifications and improve the access and operation of the corridors upstream and downstream from the interchanges.

SR 826, between US 1 and SR 874 (Don Shula Expressway), consists primarily of six travel lanes (three lanes in each direction). Between SR 874 and SR 836, the corridor consists primarily of ten travel lanes (five lanes in each direction) and two undesignated High Occupancy Vehicle (HOV) lanes (one in each direction). This segment of SR 826 is functionally classified as an Urban Other Freeway/Expressway and has a posted speed limit of 55 miles per hour. The access management classification for this corridor is Class 1.2, Freeway in an existing urbanized area with limited access.

There are ten existing interchanges within the project limits. Eight of the ten interchanges provide connection to arterial/collector facilities. The other two are major system-to-system interchanges (SR 826 with SR 874 and SR 826 with SR 836). These system-to-system interchanges provide a connection between major expressways, which services and distributes traffic originating from or destined to the north, south, east, and west portions of Miami-Dade County.



Figure 1 - 1: Project Study Area

## 1.2 Purpose and Need

The overall goals and objectives of this PD&E Study are described below:

- Evaluate the implementation of an express lanes system that will improve safety, capacity, operations, regional express lane network connectivity, expressway/interchange access, mobility and emergency evacuation.
- Identify the appropriate express lanes typical section that, combined with strategic ingress and egress locations, will service the users of the area and achieve the Purpose and Need.
- Provide relief from existing and projected traffic congestion.
- Improve the safety of the SR 826 mainline corridor by addressing speed differentials and lane weaving deficiencies between interchanges.
- Support the optimal operations of the existing roadway network.
- Maintain consistency with the current SR 826 Express Lanes Project, from SR 836 to I-75, and local projects.
- Once a conceptual alternative is selected, the improvements will be prioritized based on the area needs (short-term vs. long-term), logical segmentation and funding.

The need for this project is to add capacity to the SR 826 corridor to meet future transportation demand, improve travel time reliability and to provide long-term mobility options. Other considerations for the Purpose and Need of this project include safety, system linkage, freight movement and emergency evacuation. The primary and secondary needs for the project are discussed in further detail below.

**Capacity** – The project traverses four of the six transportation planning areas (Central, Northwest, South, and West) as identified within the Miami-Dade Transportation Planning Organization (TPO) 2040 Long Range Transportation Plan. The greatest population and employment growth between the years 2010 and 2040 within Miami-Dade County is expected to occur within the South transportation planning area. Population within this area is projected to increase by 49.6% while employment is projected to increase by 64.5%. The other three transportation planning areas are also anticipated to grow modestly between this same period. Population within Central is projected to increase by 27.9% and employment by 32.5%. Population within Northwest is projected to increase by 20% and employment by 41.9%. Population within West is projected to increase

by 12.5% and employment by 42.5%. The projected growth in the area will result in a significant increase in travel demand and further deteriorate the conditions of the already congested SR 826 corridor.

**Safety** – According to the FDOT Crash Analysis Reporting System there were a total of 2,531 crashes along the corridor within the project limits between the years 2011 and 2013, of which 1,522 (60.1%) were rear-end crashes and 259 (10.2%) were fixed object crashes. These types of crashes can be attributed to the heavy levels of congestion and operational weaving conditions within the project area. The majority of the total crashes occurred between milepost 5.7 and 6.8 (between SW 24th Street and north of Flagler Street), resulting in 811 injuries and one fatality.

Safety along the corridor will be enhanced with the construction of the express lanes. Implementing express lanes will improve mobility, reduce congestion and provide additional travel options along the corridor. Diverting some of the future traffic volumes from the general use lanes to the express lanes, will help increase gaps along the general use lanes providing more space for vehicles entering SR 826. The express lanes will also help reduce tailgating and improve traffic flow while separating long distance trips from local trips. Separating these trips will reduce weaving and sideswipe crashes. The express lanes will also create added capacity helping the corridor to operate more efficiently during emergency evacuation events.

**System Linkage** – SR 826 connects southern Miami-Dade County to northern Miami-Dade County and serves as a feeder route to the County's busiest east-west transportation corridor, SR 836. The SR 826 corridor provides system-level connections to I-75, Florida's Turnpike, SR 874, and I-95. In addition, SR 826 is designated as a Strategic Intermodal System (SIS) facility. The section of SR 826 from US 1 to SR 836 serves the major western Miami-Dade County growth areas along SW 8th Street, SW 40th Street and the Dadeland South area. The corridor also provides access to Miami International Airport north and east of SR 836 and to the Dadeland Mall at SW 88th Street. This SR 826 southern segment (from US 1 to SR 836) is the final segment of a larger express lanes project for the SR 826 corridor. The northern segment, which extends from SR 836 to I-75, is already under construction. When complete, this regional system will greatly improve capacity, safety, connectivity and peak-hour travel times.

**Freight** – SR 826 is an integral component of the regional freight network carrying over 10,000 trucks a day according to the 2014 Miami-Dade County Freight Plan Update. The addition of express lanes along SR 826 would create a more efficient roadway network, improving traffic flow in the general use lanes. While trucks are not allowed in express lanes, the enhanced traffic conditions along SR 826 would aid in the movement and delivery of freight.

**Emergency Evacuation** – In accordance with the Miami-Dade's Comprehensive Development Master Plan, SR 826 is listed as a local evacuation route in Miami-Dade County. This corridor is critical in facilitating traffic movement during emergency evacuation periods as it connects to other major arterials and highways of the state evacuation route network. Increasing the capacity of the SR 826 corridor will reduce evacuation times needed for residents of Miami-Dade County during emergency and hurricane evacuations.

## 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. 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.

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, protected habitats, and EFH. 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 Efficient Transportation Decision Making (ETDM) Process ([Appendix A](#)) indicated that the proposed project does not appear to directly impact any NMFS trust resources [(listed/protected marine species) or EFH]. Therefore, no EFH discussion is included in this NRE.

### 2.1 Environmental Setting

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);
- Florida Fish and Wildlife Conservation Commission (FWC), Telemetry (2014) and Mortality (2017) data sets;

- FWC, Eagle Nest Locator website (<http://myfwc.com/eagle/eaglenests/nestlocator.aspx>);
- FWC, Florida's Endangered and Threatened Species (updated December 2018);
- Florida Natural Areas Inventory (FNAI) database, reviewed May 2019, [www.FNAI.org](http://www.FNAI.org);
- South Florida Water Management District, Geographic Information System (GIS) Land Use Database (2008);
- United States Department of Agriculture, Natural Resources Conservation Service (NRCS), Soil Survey of Miami-Dade County Area, Florida, 2017;
- 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 other surface water (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 four 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 Land Use

The SR 826 South Express Lanes Corridor is located in the northern portion of Miami-Dade County, which is part of the Southeast Florida Region of Palm Beach, Broward and Miami-Dade Counties. No natural upland areas exist along the project corridor. The upland vegetative communities observed consist predominantly of the following:

### **Landscaped Commercial and Industrial Development, Residential, Government Services, Roadways and Ruderal**

**FLUCFCS – 100/110/130, 141, 155, 175, 800 (Urban and Built-Up / Residential / Retail/Offices / Light Industrial / Governmental / Roads and Highways)**

Upland communities located within and in close proximity to the study area have been altered by human activities. Landscaped areas of various types of residential developments, commercial and light industrial businesses and government facilities consist primarily of buildings surrounded by landscaped (mowed) areas comprised of various lawn grasses and/or plantings of ornamental herbaceous vegetation, shrubs, palms, and trees. Ruderal communities consisting of vacant lots, road right of ways, and other cleared, undeveloped areas are interspersed among the developed areas and vary in size and species composition. Vegetation in these areas is ranged from non-native shrub-dominated habitats with Brazilian-pepper (*Schinus terebinthifolius*), woman's tongue (*Albizia lebbek*), dayflowering jessamine (*Cestrum diurnum*), white leadtree (*Leucaena leucocephala*), Australian-pine (*Casuarina equisetifolia*), earleaf acacia (*Acacia auriculiformis*), elephantgrass (*Cenchrus purpureus*), silkreed (*Neyraudia reynaudiana*), and air-potato (*Dioscorea bulbifera*); to herbaceous vegetation dominated by native opportunistic and exotic species such as beggarticks (*Bidens alba* var. *radiata*), shrubby false buttonweed (*Spermacoce verticillata*), Mexican clover (*Richardia* spp.), crabgrass (*Digitaria* spp.), West Indian dropseed (*Sporobolus jacquemontii*), fanpetals (*Sida* spp.), and wedelia (*Sphagneticola trilobata*), among others. Due to the high level of

disturbance, these areas provide minimal habitat value for resident and migratory wildlife species. Protected plant species are typically not associated with this habitat type and none were encountered during the surveys. Therefore, impacts to this community type are not regulated by the Federal, State, and local environmental agencies and are considered insignificant for the purposes of this report.

A total of 15 land use classifications 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	FLUCFCS Description	Acres	Percent
133	Multiple Dwelling Units - Low Rise	24.64	2.54%
140	Commercial and Services	76.25	7.85%
155	Other Light Industry	22.17	2.28%
1411	Shopping Centers	34.4	3.54%
111	Fixed Single Family Units	297.75	30.64%
530	Reservoirs	17.58	1.81%
185	Parks and Zoos	20.15	2.07%
148	Cemeteries	18.99	1.95%
170	Institutional	8.79	0.90%
171	Educational Facilities	9.8	1.01%
134	Multiple Dwelling Units - High Rise	38.58	3.97%
812	Railroads and Railyards	1.55	0.16%
814	Roads and Highways	372.64	38.34%
190	Open Land	2.73	0.28%
510	Streams and Waterways	25.82	2.66%
<b>Total Land Use/Vegetative Cover</b>		<b>971.84</b>	<b>100%</b>

<sup>1</sup> FDOT, FLUCFCS (Third edition), 1999.

### 2.3 Soils

Based on the Soil Survey of Broward County, Florida (NRCS, 1976), the project study area is comprised of four 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), zero of the four soil types identified within the

project study area are 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	Area (acres)	% of Total
Water	*	34.98	0.04
Udorthents-Water Complex	N	3.53	0.00
Urban Land	N	714.55	0.74
Udorthents, Limestone Substratum-Urban Land Complex	N	217.42	0.22
Opalocka Sand-Rock Outcrop Complex	N	1.35	0.00
<b>Total</b>		<b>971.84</b>	<b>1.00</b>

\*unranked

## 2.4 Drainage

The project is located in Miami-Dade County, Florida, contained within unincorporated Miami-Dade, and is within the jurisdictional boundary of the South Florida Water Management District (SFWMD), USACE, and Miami-Dade Regulatory and Economic Resources (DRER).

SFWMD and DRER have established several criteria for water quality, depending on the proposed type of stormwater treatment facility. Existing facilities provide water quality treatment and attenuation of roadway runoff via dry detention/retention ponds and French Drains. All proposed stormwater management facilities will provide the necessary water quality treatment volume and limit the post-development peak discharge rate into the C-100 A, Snapper Creek, Coral Gables Canal, Tamiami Canal and North Line Canal to the pre-development peak discharge rate. Water quality treatment and discharge attenuation will be provided via existing and proposed dry detention/retention ponds and French Drains.

Based on the conceptual drainage design evaluation for the proposed improvements, the stormwater management facilities will meet FDOT drainage criteria as well as SFWMD permit criteria. The improvements will have no negative drainage impacts to the surrounding areas and the proposed stormwater management facilities will have the capacity to adequately treat and attenuate roadway runoff within the project limits.

## 2.5 Existing Roadway Conditions

SR 826, between US 1 and SR 874, consists of five to six 12-foot wide general use lanes (three lanes in the northbound direction and two to three lanes in the southbound direction) with 12-foot wide auxiliary lanes at selected locations, 11.5-foot to 13-foot wide paved outside shoulders, 11-foot wide paved inside shoulders, a 2-foot wide median barrier wall, and outside barrier walls. Between SR 874 and SR 836 the corridor consists primarily of twelve 11-foot to 14-foot general use lanes (six lanes in each direction), 8-foot to 10.5-foot wide outside shoulders, 11-foot wide paved inside shoulders, a 2-foot wide median barrier wall, and outside barrier walls. The two typical sections for SR 826 are depicted in [Figure 2-1](#) and [Figure 2-2](#).

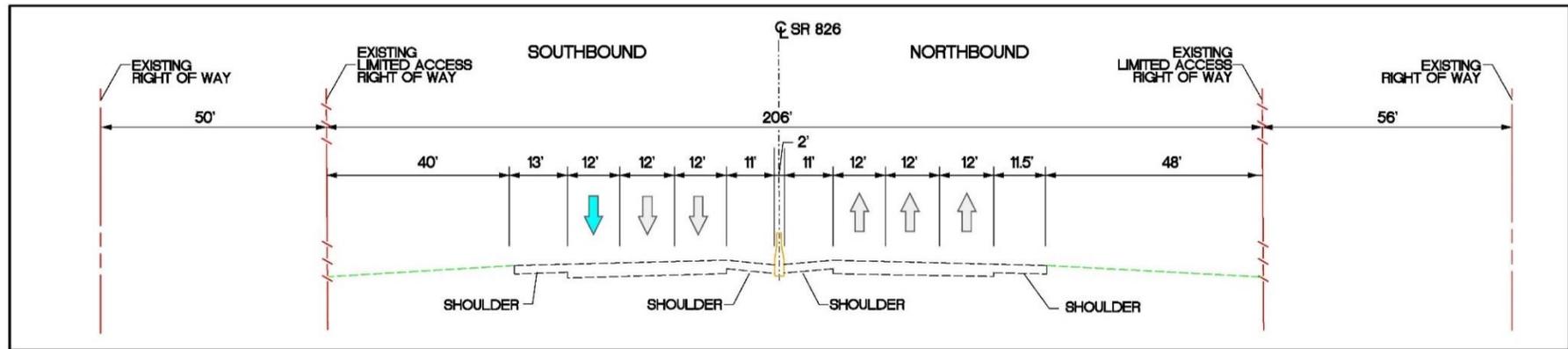


Figure 2 - 1: Existing Roadway Typical Section between US 1 and SR 874

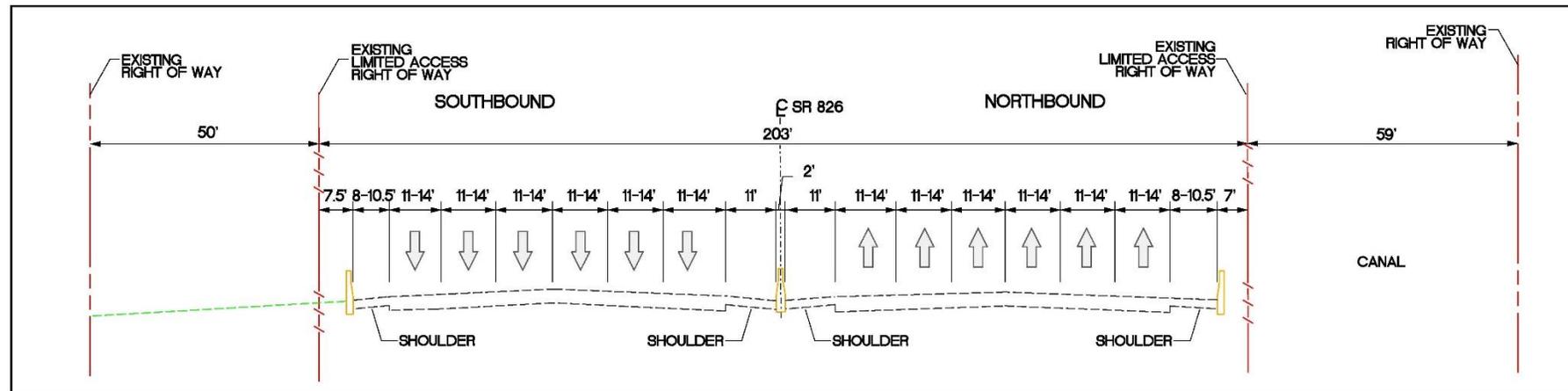


Figure 2 - 2: Existing Roadway Typical Section between SR 874 and SR 836

The existing limited access right of way varies within the study limits. The right of way is generally consistent throughout the corridor except at the interchanges, where it varies to accommodate entrance and exit ramps. **Table 2-3** summarizes the available right of way along the corridor.

**Table 2 - 3: Summary of Existing Right of Way**

	Roadway Section	Right of Way Width (feet)
<b>US 1</b>	SW 104 <sup>th</sup> Street – SR 826	118
<b>SR 826</b>	SW 98 <sup>th</sup> Street – SW 88 <sup>th</sup> Street (Northbound Ramp)	154
	SW 98 <sup>th</sup> Street – SW 88 <sup>th</sup> Street (Southbound Ramp)	147
	SW 88 <sup>th</sup> Street – Sunset Drive	210
	Sunset Drive – Miller Drive	205
	Miller Drive – SR 874	350
	SR 874 – Bird Road	360
	Bird Road – Coral Way	317
	Coral Way – SW 8 <sup>th</sup> Street	200
	SW 8 <sup>th</sup> Street – Flagler Street	250
Flagler Street – SR 836	460	
<b>SR 874</b>	Miller Drive – SR 826	248

Source: FDOT ROW Survey

### 3.0 PROJECT ALTERNATIVES

Alternatives evaluated during the PD&E Study include the No-Build Alternative and the Build Alternatives as described below. Alternatives were developed and evaluated based on the ability to meet the project purpose and needs.

- No-Build Alternative – The No-Build (no construction) Alternative will include currently planned and programmed improvements.
- Build Alternatives – The three proposed alternatives from the SR 826 Planning Feasibility Study will be evaluated during the PD&E Study.
  - Alternative 1 proposes one express lane in each direction between SW 56<sup>th</sup> Street and SR 874 and two express lanes in each direction between SR 874 and SR 836.
  - Alternative 2 proposes one express lane in each direction between US 1 and SR 874 and two express lanes between SR 874 and SR 836.
  - Alternative 3 proposes one express lane in each direction between US 1 and SR 874 and two express lanes between SR 874 and SR 836, one at-grade and one elevated.

The PD&E Study will identify other types of reasonable corridor and interchange improvements to support the optimal operations of the express lanes system.

#### 3.1 No-Build Alternative

The No-Build alternative proposes to keep the existing corridor into the future without corridor improvements. No traffic capacity, operation, or safety improvements would be implemented throughout the corridor. The effect associated with this alternative includes the acceptance of existing highly congested traffic conditions. Also, travel demand and truck traffic will increase significantly over the next 20 years, given the continued growth expected in this area of Miami-Dade County. This alternative is considered to be a viable alternative to serve as a comparison to the study's proposed corridor alternatives.

The No-Build alternative has a number of positive aspects, since it would not require expenditure of public funds for design, construction, right of way and/or utility relocation. Traffic would not be temporarily disrupted due to construction, avoiding inconveniences to local residents and businesses. Also, there would be no direct or secondary impacts to the environment, the socio-economic

characteristics, community cohesion, or system linkage of the area. The No-Build alternative includes the existing transportation network and any funded, planned or programmed improvements open to traffic by the design year 2045. The No-Build alternative includes improvements that are elements of the MPO's Transportation Improvement Program, the 2040 Miami-Dade Cost Feasible Long Range Transportation Plan (LRTP), the FDOT's Adopted Five-Year Work Program, any local government comprehensive plans and/or any development mitigation improvement projects that are elements of approved development orders.

The SR 826 corridor, north of SR 874, has a 14-foot wide inside travel lane. This lane is intended to be a High Occupancy Vehicle (HOV) lane once the final improvements are completed at the SR 826/SR 836 Interchange. However, these lanes were never officially designated. This lane was designated as an HOV lane as part of the previous SR 826 Corridor Master Plan and PD&E Study.

The No-Build roadway typical sections, within the study limits, are the same as the existing sections plus any future planned improvements. SR 826, between US 1 and SR 874, consists of five to six 12-foot wide general use lanes (three lanes in the northbound direction and two to three lanes in the southbound direction) with 12-foot wide auxiliary lanes at selected locations, 11.5-foot to 13-foot wide paved outside shoulders, 11-foot wide paved inside shoulders, a 2-foot wide median barrier wall, and outside barrier walls. Between SR 874 and SR 836 the corridor consists primarily of twelve 11-foot to 14-foot general use lanes (six lanes in each direction), 8-foot to 10.5-foot wide outside shoulders, 11-foot wide paved inside shoulders, a 2-foot wide center barrier wall, and outside barrier walls. The two typical sections for SR 826 are depicted in [Figure 3-1](#) and [Figure 3-2](#).

FDOT is currently constructing a SR 826 project adding express lanes between SW 8th Street and I-75 (FPID# 432687-1-52-01), which partially overlaps with the PD&E Study limits. These improvements are expected to be open to traffic before the implementation of this project. Therefore, these improvements will be considered as part of the No-Build Alternative (see [Figure 3-3](#) and [Figure 3-4](#)).

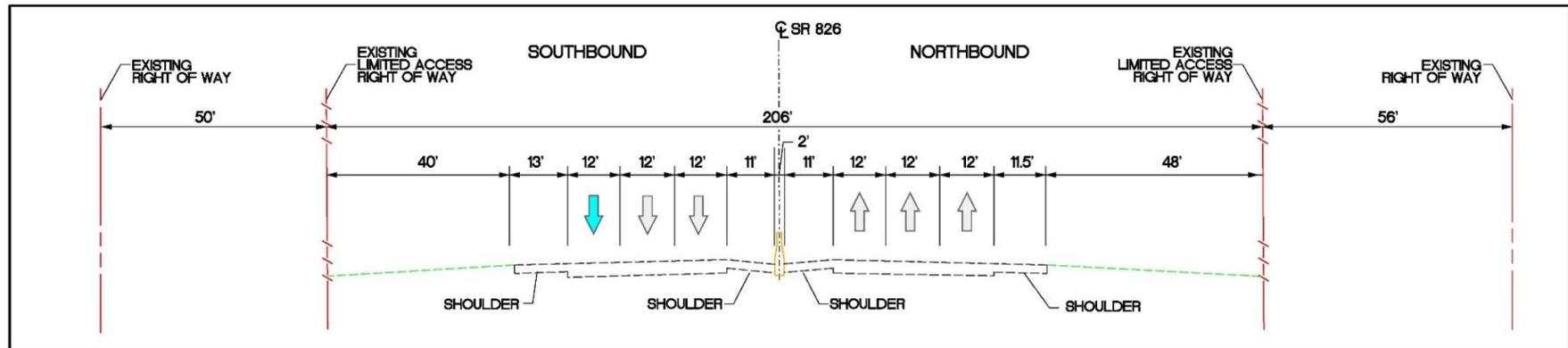


Figure 3 - 1: No-Build Roadway Typical Section between US 1 and SR 874

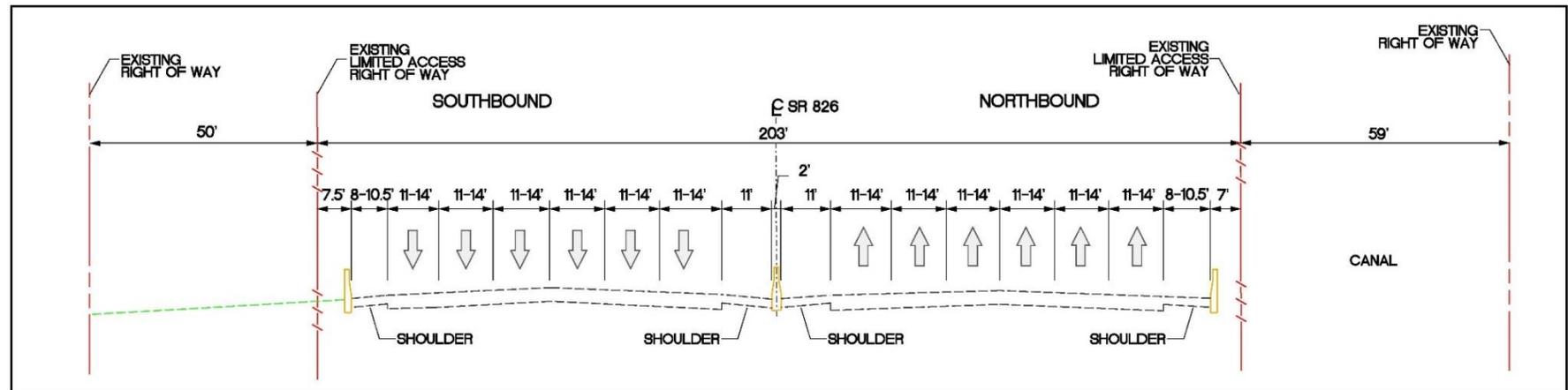
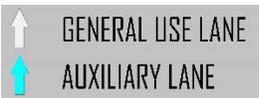


Figure 3 - 2: No-Build Roadway Typical Section between SR 874 and SR 836

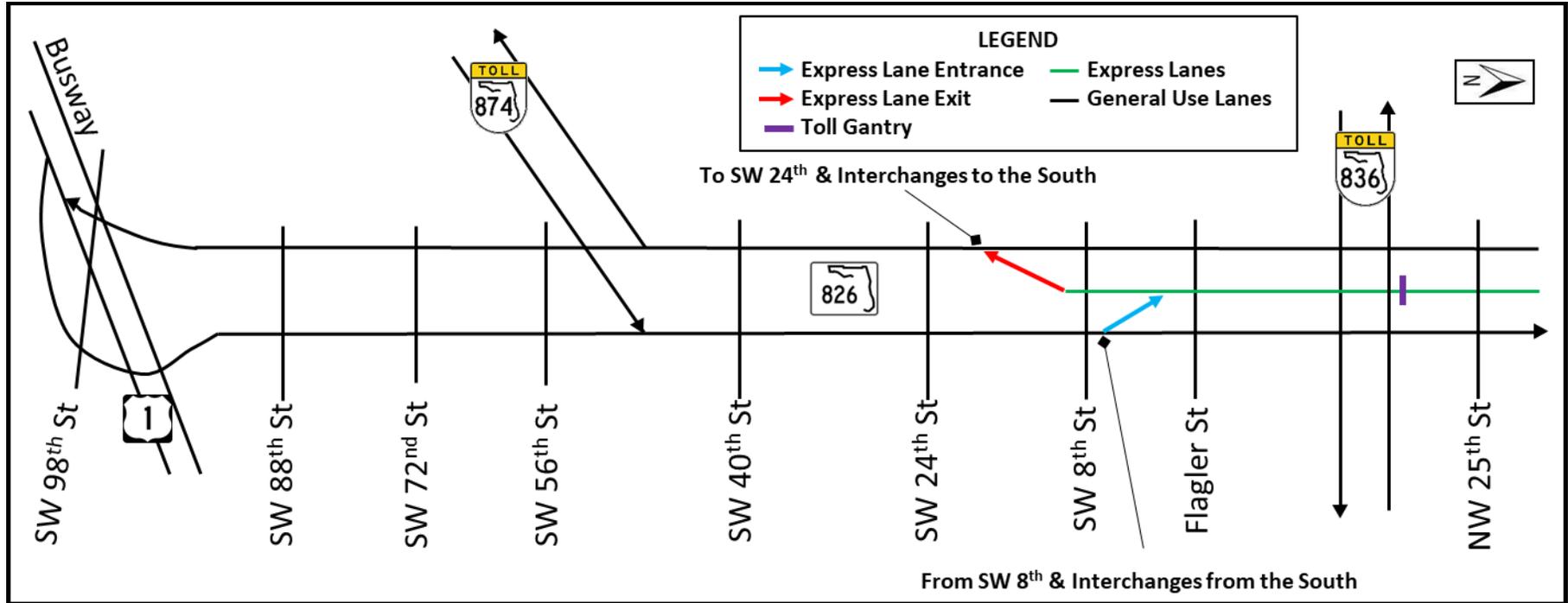


Figure 3 - 3: No-Build Schematic Line Diagram

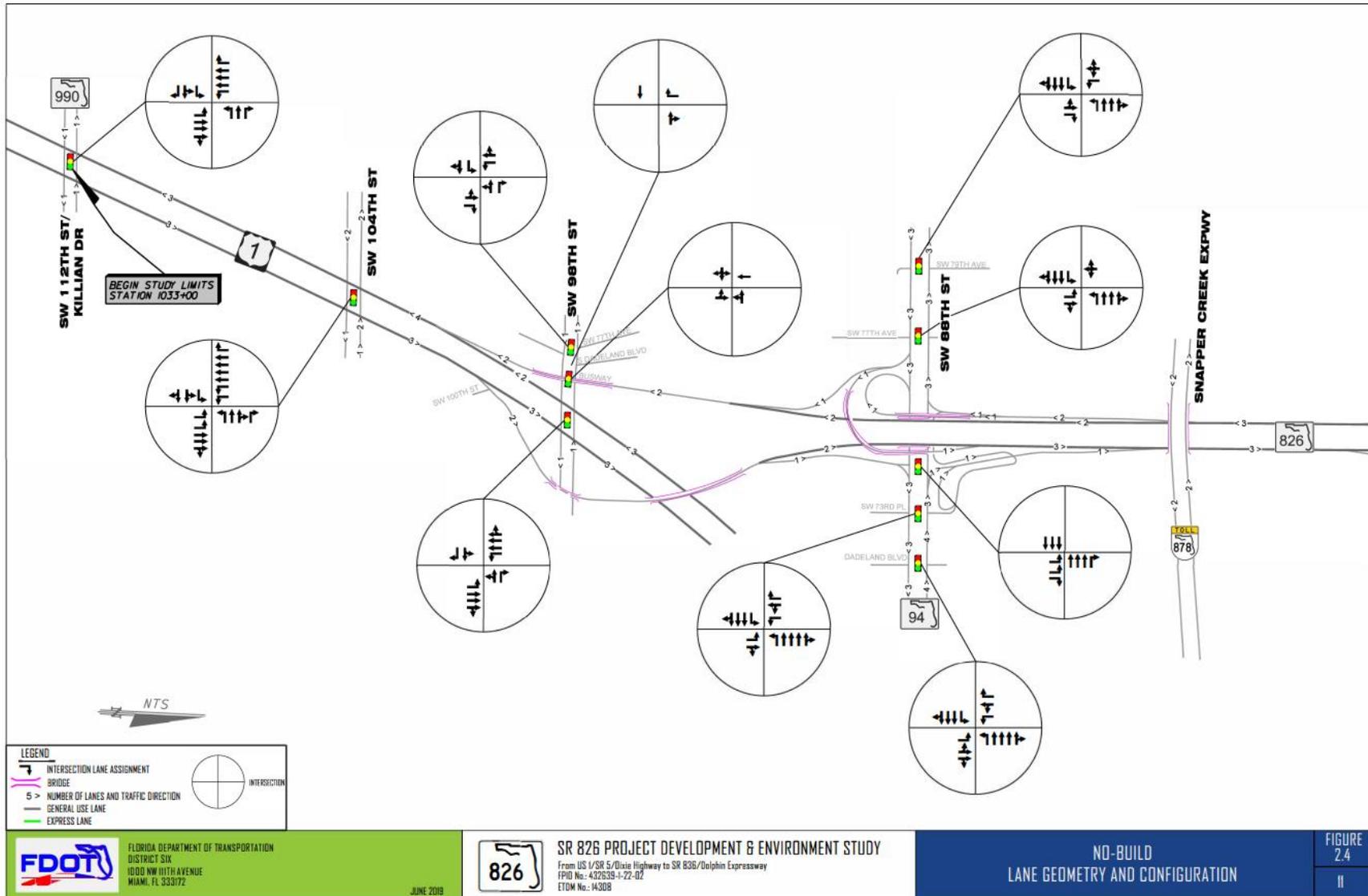


Figure 3 - 4: No-Build Alternative Lane Geometry and Configuration (1 of 4)

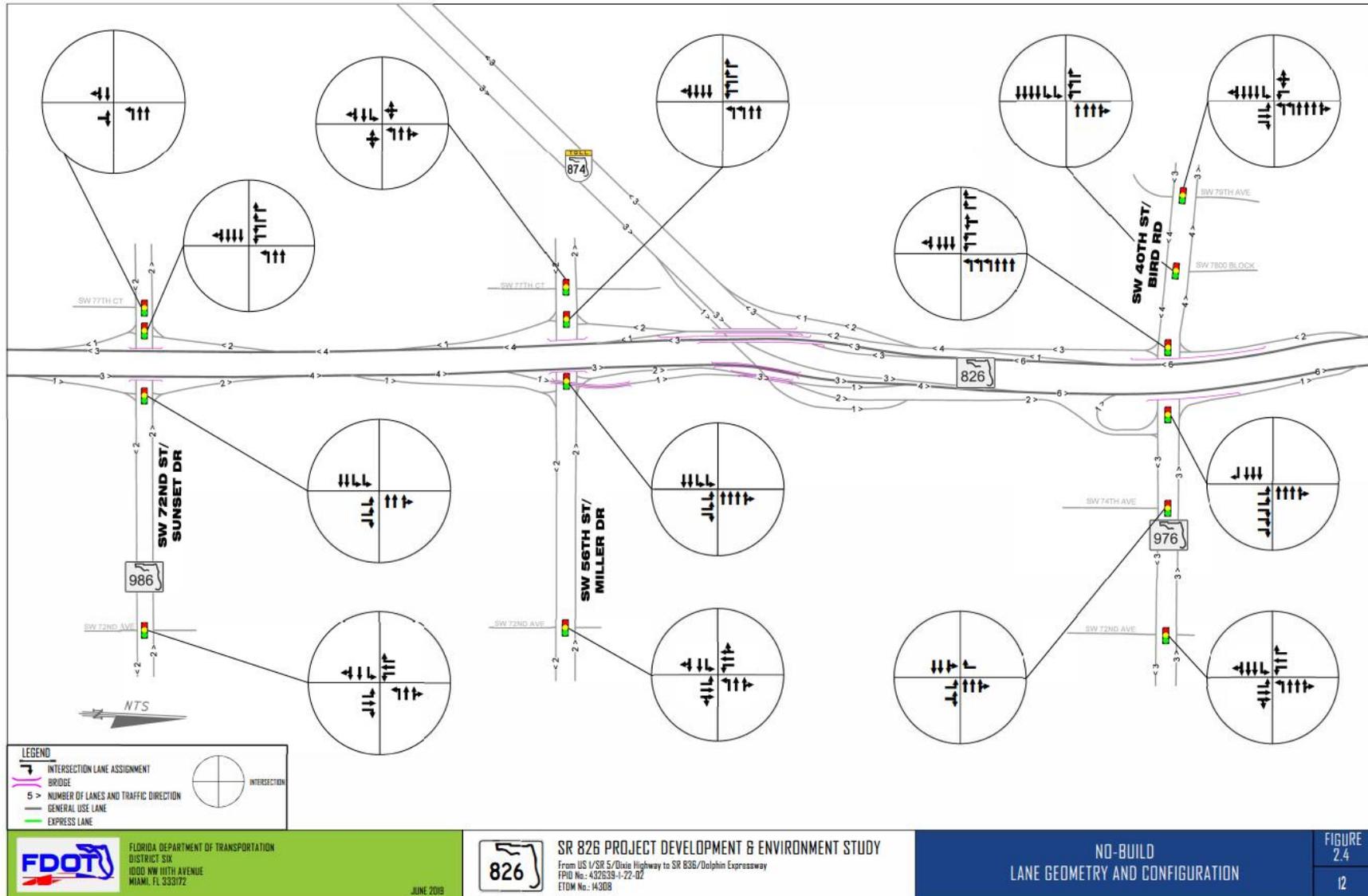


Figure 3 - 4: No-Build Alternative Lane Geometry and Configuration (2 of 4)

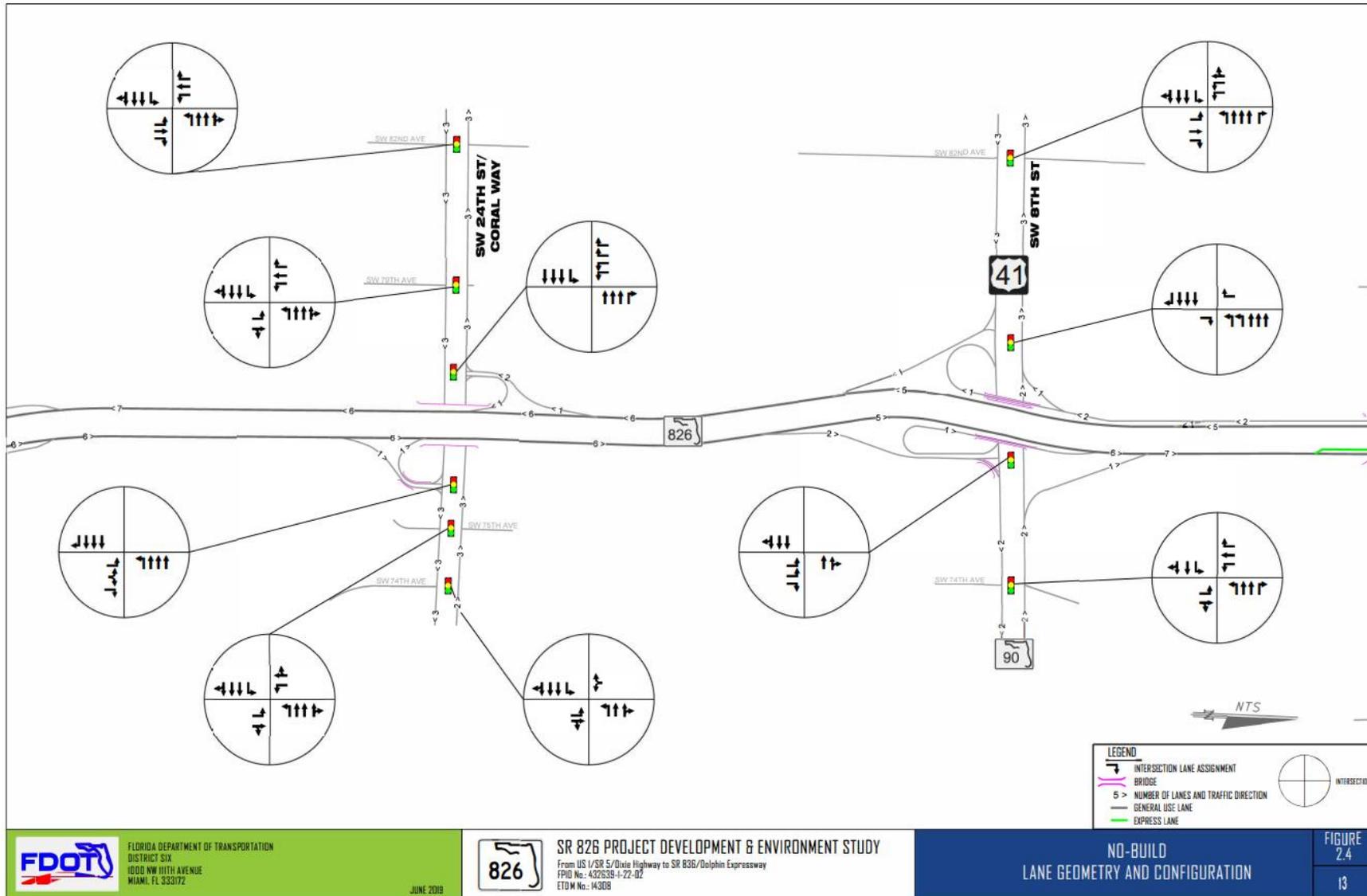


Figure 3 - 4: No-Build Alternative Lane Geometry and Configuration (3 of 4)

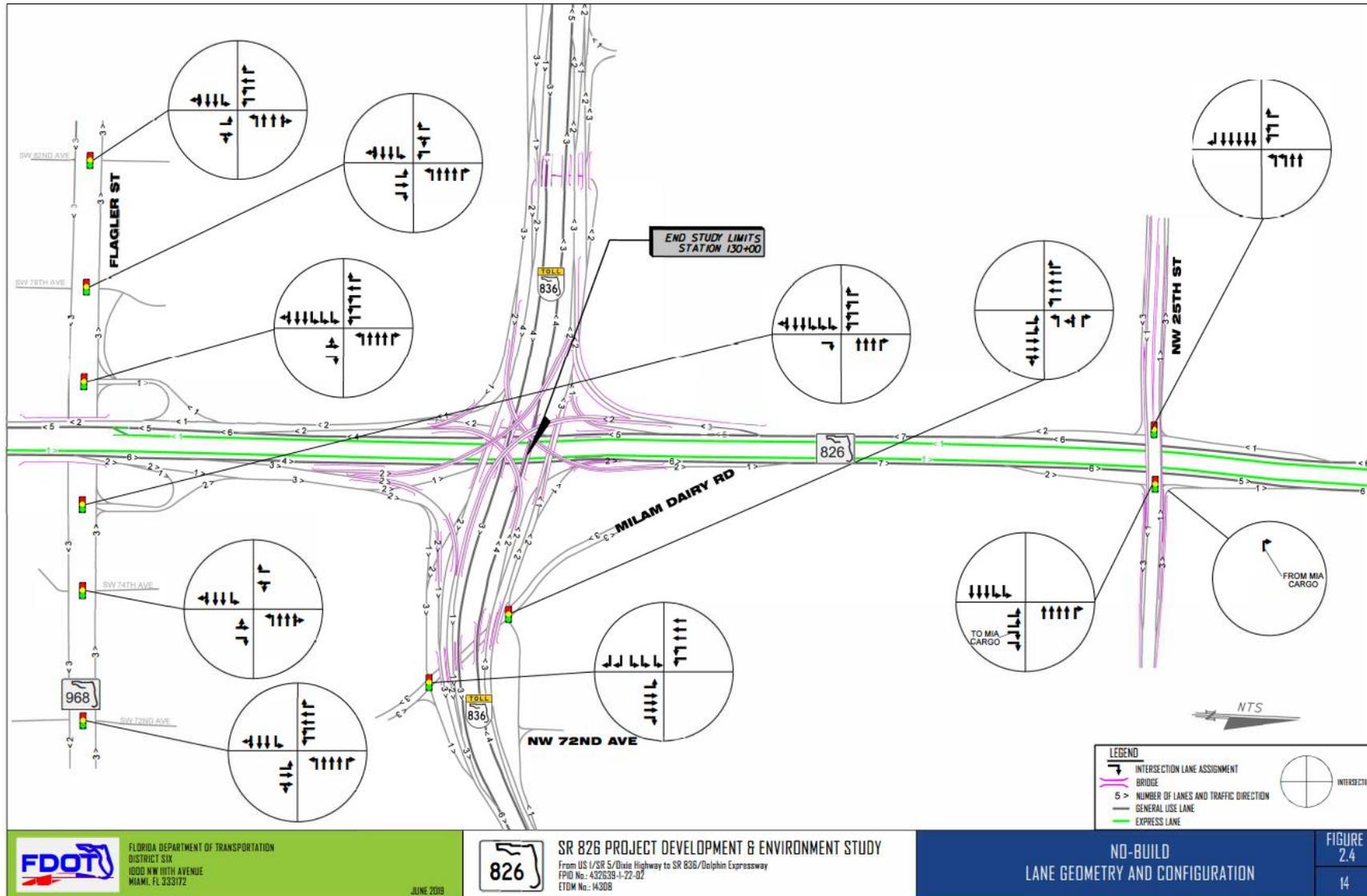


Figure 3 - 4: No-Build Alternative Lane Geometry and Configuration (4 of 4)

### 3.2 Build Alternatives

The objective of this PD&E Study is to evaluate alternatives that will address existing and projected traffic operating deficiencies along this section of SR 826. In order to keep up with the growing traffic demand within the study area, three Build Alternatives have been considered in this PD&E Study. All three alternatives propose to add express lanes (extend to the south) along this segment of SR 826 with access points at selected locations to enter and exit the express lanes system. The express lanes will be buffer-separated from the general use lanes with express lane markers.

Alternative 1 proposes one express lane in each direction between SW 56th Street and SR 874 and two express lanes in each direction between SR 874 and SR 836. The express lanes system will begin and end one lane on SR 874 and one lane south of SW 56th Street. This alternative recommends four express lane access points, which includes a SR 836 ramp flyover system-to-system connecting SR 826 northbound to SR 836 eastbound and SR 836 westbound to SR 826 southbound median-to-median.

Alternative 2 proposes one express lane in each direction between US 1 and SR 874 and two express lanes between SR 874 and SR 836. The express lanes system will begin and end one lane on SR 874 and one lane north of US 1. This alternative proposes four express lanes access points, which includes a SR 836 ramp flyover system-to-system connecting SR 826 northbound to SR 836 eastbound and SR 836 westbound to SR 826 southbound median-to-median. The express lanes in this alternative will have a direct connection with the Miami-Dade Transit (MDT) US 1 South Miami-Dade Busway Corridor.

Alternative 3 proposes one express lane in each direction between US 1 and SR 874 and two express lanes between SR 874 and SR 836, one at-grade and one elevated. The elevated express lanes will be located along the median and the at-grade express lanes will be located between the median and the general use lanes separated by a buffer with express lane markers. This alternative proposes four express lanes access points. In this alternative the elevated express lanes will only service traffic between SR 874 and SR 836 to and from the east. The elevated express lanes will not have any access with the at-grade express lanes or the SR 826 general use lanes. The objective of the elevated express lanes concept is to completely bypass the SR 826 corridor between SR 874 and SR 836, which is the

main origin and destination pattern of the area. The SR 836 connection will be a ramp flyover system-to-system connecting SR 874 northbound to SR 836 eastbound and SR 836 westbound to SR 874 southbound median-to-median. The express lanes in this alternative will have a direct connection with the MDT US 1 South Miami-Dade Busway Corridor.

## 4.0 PROTECTED SPECIES AND HABITAT

### 4.1 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 Endangered Species Act (ESA) of 1973, as amended; the Fish and Wildlife Conservation Act; the Migratory Bird Treaty Act (MBTA); Part 2, Chapter 16 (Protected Species and Habitat) 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 state-designated Critical Habitat for the West Indian manatee (*Trichechus manatus*) is present within the limits of the Build Alternatives. The project is also located within the FWS Consultation Areas for the Everglade snail kite (*Rosthamus sociabilis plumbeus*), American Crocodile (*Crocodylus acutus*), and the Florida bonneted bat (*Eumops floridanus*).

The project was screened through the ETDM Process (ETDM Project #14308) in 2017. During this time, the FWS and FWC commented on potential effects of the project to wildlife and habitat resources. The FWS indicated that the project may contain suitable wood stork (*Mycteria americana*) foraging habitat. Both the FWC and FWS also indicated that the West Indian manatee (*Trichechus manatus*) may occur within or adjacent to the project study area. The FWS further indicated that the following federally listed species have potential to utilize habitats within the project study area: eastern indigo snake (*Drymarchon corais couperi*) and the Florida bonneted bat (*Eumops floridanus*).

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.

### 4.2 Field Review

In accordance with Section 7 of the ESA of 1973, as amended, and Chapter 68 of the F.A.C, the project study area was evaluated for the potential occurrence of federal and state listed protected plant and animal species. Literature reviews,

agency database searches and coordination, and a habitat field review (performed on November 13<sup>th</sup>, 14<sup>th</sup>, 15<sup>th</sup>, and 16<sup>th</sup>, 2018 and December 10<sup>th</sup> and 13<sup>th</sup>, 2018) were conducted to identify protected species and Critical Habitat that might occur within the study area. Literature reviews and databases searches included the following:

- ESRI aerial photographs (2019)
- FWS Environmental Conservation Online System, Miami-Dade County (2019)
- FWS Critical Habitat Portal, Study Area (2019)
- FWC Online Imperiled Species List (2019)
- FWC Florida's Endangered and Threatened Species (2019)
- FWS IPaC Resource List (2019)
- FWC Eagle Nest Locator Database, Study Area (2019)
- FWC Waterbird Colony Locator Database, Study Area (2017)
- Florida Natural Areas Inventory (FNAI) Tracking List, Miami-Dade County (2017)
- FNAI Field Guide to the Rare Plants and Animals of Florida Online (2019)
- Miami-Dade County GIS data (2019)

Aerial photographs from the Florida Geographic Data Library (FGDL) were interpreted to determine habitat types occurring within the project study area and the potential presence of any listed plant or animal species. The FWS lists are specific to Miami-Dade County, but they are not site specific to the project study area. This list includes categorizations of species as endangered (E), threatened (T), and candidate (C). The FWC list covers the entire state of Florida and includes categorizations of species as federally-designated endangered (FE), federally-designated threatened (FT), state threatened (ST), and species of special concern (SSC). The FWC list also includes the state list of plants maintained by the Florida Department of Agriculture and Consumer Services (FDACS) and categorized as endangered (E), threatened (T), and commercially exploited (CE). The FNAI tracking list includes both plants and animals with special state or federal status that are known to occur, are reported to occur, or may occur within Miami-Dade County.

### 4.3 Species Occurrence and Effect Determinations

**Table 4-1** lists the state and federally listed wildlife species that occur in Miami-Dade 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 4 - 1: Listed/Protected Wildlife Species, Designation, and Potential for Occurrence**

Common Name	Scientific Name	Federal Status	State Status	Occurrence Potential
<b>Mammals</b>				
Florida Bonneted Bat	<i>Eumops floridanus</i>	E	FE	Low
West Indian Manatee <sup>(1)</sup>	<i>Trichechus manatus</i>	T	FT	High
<b>Reptiles</b>				
American Crocodile	<i>Crocodylus acutus</i>	T	FT	Low
Eastern Indigo Snake	<i>Drymarchon corais couperi</i>	T	FT	Low
<b>Birds</b>				
Bald Eagle <sup>(2)</sup>	<i>Haliaeetus leucocephalus</i>	NL	NL	Moderate
Osprey <sup>(2)</sup>	<i>Pandion haliaetus</i>	NL	NL	High
Everglade Snail Kite	<i>Rostrhamus sociabilis plumbeus</i>	E	FE	Low
Wood Stork	<i>Mycteria americana</i>	T	FT	Moderate
Little Blue Heron	<i>Egretta caerulea</i>	NL	ST	Moderate
Reddish Egret	<i>Egretta rufescens</i>	NL	ST	Low
Roseate Spoonbill	<i>Platalea ajaja</i>	NL	ST	Low
Southeastern American Kestrel	<i>Falco sparverius paulus</i>	NL	ST	High

Federal Status: E = Endangered, T = Threatened, NL = Not Listed

State Status: FE = Federally-designated Endangered, FT = Federally-designated threatened, NL = Not Listed, ST = State threatened.

<sup>1</sup> The West Indian manatee, including the Florida manatee subspecies, is also federally-protected by the *Marine Mammal Protection Act*.

<sup>2</sup> The bald eagle and osprey are not listed by the FWS or FWC but still federally-protected by the *Bald and Golden Eagle Protection Act* and the *Migratory Bird Treaty Act*.

**Table 4-2** below provides the occurrence probability for federal and state listed/protected plant species. Although none of the federally 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 2019) generated for this project (see **Appendix D**). The state listed plant species were identified based on review of the FNAI database.

**Table 4 - 2: Listed/Protected Plant Species, Designation, and Potential for Occurrence**

Common Name	Scientific Name	Federal Status	State Status	Occurrence Potential
West Indian mahogany	<i>Swietenia mahagoni</i>	N/A	ST	High (planted as part of landscaping along roadway)
Florida royal palm	<i>Roystonea regia</i>	N/A	SE	High (planted as part of landscaping along roadway)
Simpson's stopper	<i>Myrcianthes fragrans</i>	N/A	ST	High (planted as part of landscaping along roadway)
Carter's small-flowered Flax	<i>Linum carteri carteri</i>	E	FE	Low
Florida brickell-bush	<i>Brickellia mosieri</i>	E	FE	Low

Federal Status: E = Endangered, T = Threatened, NL = Not Listed

State Status: FE = Federally-designated endangered, FT = Federally-designated threatened, NL = Not Listed, ST = State threatened, SE = State endangered.

### 4.3.1 State and Federally Listed/Protected Wildlife Species

#### Federally Listed Species

##### **Mammals**

**Florida Bonneted Bat (*Eumops floridanus*):** The Florida bonneted bat (FBB) is federally listed as endangered due to human activities and habitat loss. This species is found in central and south Florida, including Monroe and Miami-Dade counties. The FBB is known to roost in hollow trees, royal palms (*Roystonea* spp.), rock crevices, buildings, and other infrastructure. As with most bats, the availability of suitable roosts is an important limiting factor. The project corridor is essentially built out, therefore limited marginal habitat is present for this species within the project corridor.

This project consists of replacing 7 bridges, demolishing (removing) 7 bridges, and widening 18 bridges (24 other bridges will remain in place). The bridges being replaced, removed, and widened are listed below:

##### Bridge Replacements:

- SR 826 Bridge (#870129) over SW 98<sup>th</sup> Street
- SR 826 Bridge (#870792) over SW 88<sup>th</sup> Street

- SR 826 Bridge (#870953) SW 88<sup>th</sup> Street NB on-ramp to SR 826
- SR 826 Bridge (#870795) over Snapper Creek Canal
- SR 826 Bridge (#870132) over SW 72<sup>nd</sup> Street
- SR 826 Bridge (#870287) over SW 72<sup>nd</sup> Street
- SW 24<sup>th</sup> Street Ped Bridge (#879010) along SB on-ramp to SR 826 from SW 24<sup>th</sup> Street

Bridge Demolishing (Removal):

- SR 826 Bridge (#870793) over SW 88<sup>th</sup> Street
- SR 826 Bridge (#870794) over Snapper Creek Canal
- SR 826 Bridge (#874257) over Snapper Creek Canal
- SR 826 Ped Bridge (#879023) just north of SW 40<sup>th</sup> Street on ramp to SR 826
- SR 826 Bridge (#870781) over SW 8<sup>th</sup> Street
- SR 826 Bridge (#870782) over SW 8<sup>th</sup> Street
- SR 826 Bridge (#870780) over SW 8<sup>th</sup> Street

Bridge Widening:

- SR 826 Bridge (#870773) over SW 88<sup>th</sup> Street
- SR 826 Bridge (#870286) over Snapper Creek Canal
- SR 826 Bridge (#871013) over SW 56<sup>th</sup> Street
- SR 874 Bridge (#870526) over SW 56<sup>th</sup> Street
- SR 826 Bridge (#871017) over SR 874 (incl. partial demolition)
- SR 826 Bridge (#871018) over SR 874 (incl. partial demolition)
- SR 826 Bridge (#871021) over SW 40<sup>th</sup> Street
- SR 826 Bridge (#870760) over SW 24<sup>th</sup> Street
- SR 826 Bridge (#870764) along NB on-ramp to SR 826 from SW 24<sup>th</sup> Street
- SR 826 Bridge (#870761) over SW 24<sup>th</sup> Street
- SR 826 Bridge (#870112) over SW 8<sup>th</sup> Street
- SR 826 Bridge (#870267) over SW 8<sup>th</sup> Street
- SR 826 Bridge (#871047) over Flagler Street
- SR 826 Bridge (#871048) over Flagler Street
- SR 826 Bridge (#871045) over NW 7<sup>th</sup> Street (incl. partial demolition)
- SR 826 Bridge (#871064) over NW 7<sup>th</sup> Street
- SR 826 Bridge (#871062) over NW 7<sup>th</sup> Street (incl. partial demolition)
- SR 826 Bridge (#871063) over NW 7<sup>th</sup> Street

All bridges within the project corridor were inspected for individuals and signs of bats (staining and / or guano). No individuals or signs of bats were found during

the field reviews and no individuals have been documented within the immediate vicinity of the project study area.

Landscaped trees exist throughout the entire project corridor. Each tree was inspected for individuals and signs of bats. The field inspection identified several landscaped trees, palms, and snags in which cavities and crevices were observed (**Figure 4-1**). Each of these cavities/crevices were inspected using a pole mounted lighted camera. However, no evidence (staining and / or guano) of bats was observed.

Therefore, this species was assigned a 'low' probability of occurrence within the project study area. The FDOT has determined that the Build Alternatives "*May Affect Not Likely to Adversely Affect*" the FBB.

Prior to commencing construction activities, the FDOT is committed to re-surveying the project corridor for features that could serve as potential roosting habitat and signs of the FBB. If any signs of the FBB are observed, the FDOT is committed to reinitiating consultation with the FWS to determine the appropriate course of action. **Figure 4-2** shows the FBB bat focal and consultation areas in relation to the project study area.

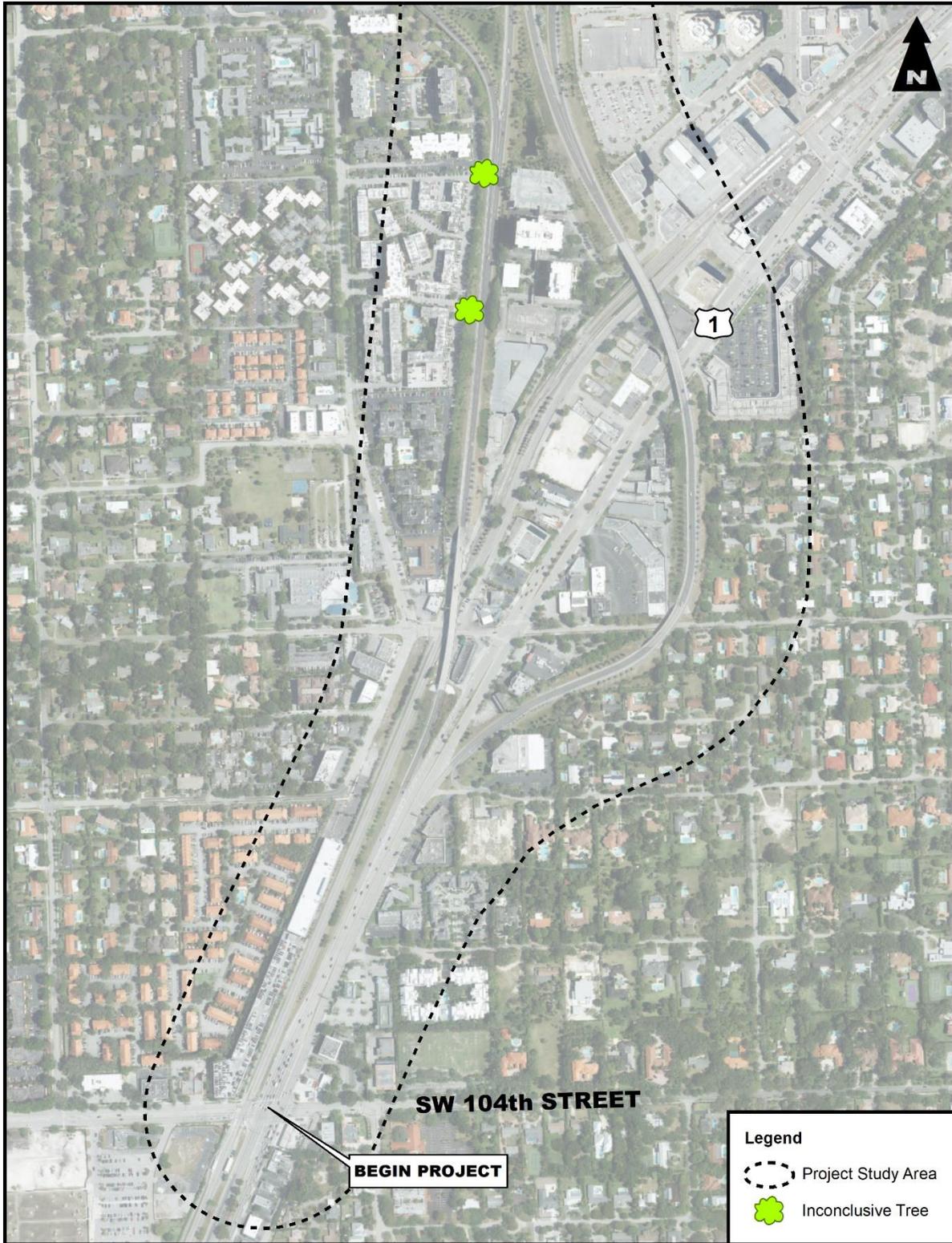


Figure 4 - 1: Potential Florida Bonneted Bat Habitat (1 of 8)



Figure 4 – 1: Potential Florida Bonneted Bat Habitat (2 of 8)

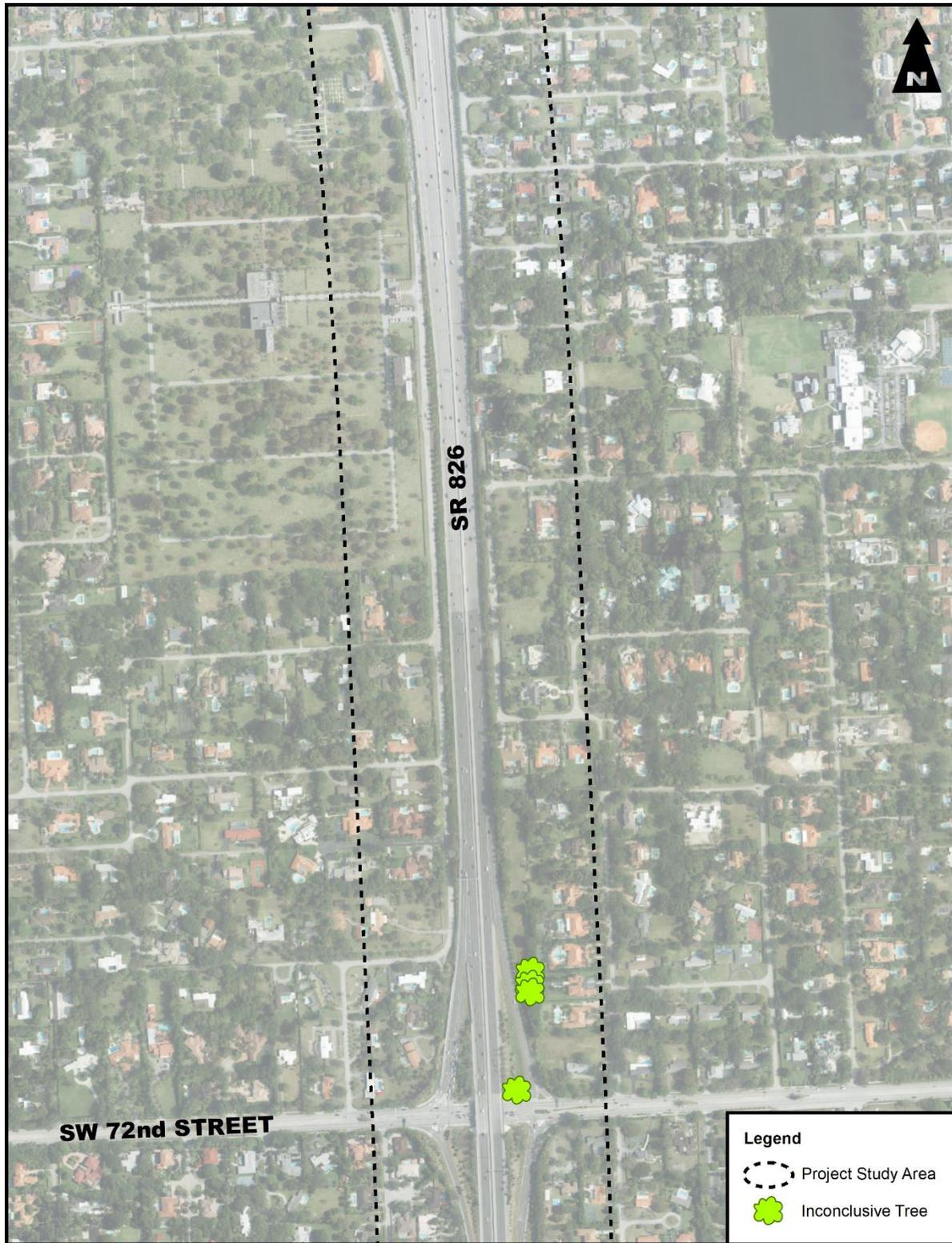


Figure 4 – 1: Potential Florida Bonneted Bat Habitat (3 of 8)



Figure 4 – 1: Potential Florida Bonneted Bat Habitat (4 of 8)



Figure 4 – 1: Potential Florida Bonneted Bat Habitat (5 of 8)



Figure 4 – 1: Potential Florida Bonneted Bat Habitat (6 of 8)



Figure 4 – 1: Potential Florida Bonneted Bat Habitat (7 of 8)



Figure 4 – 1: Potential Florida Bonneted Bat Habitat (8 of 8)

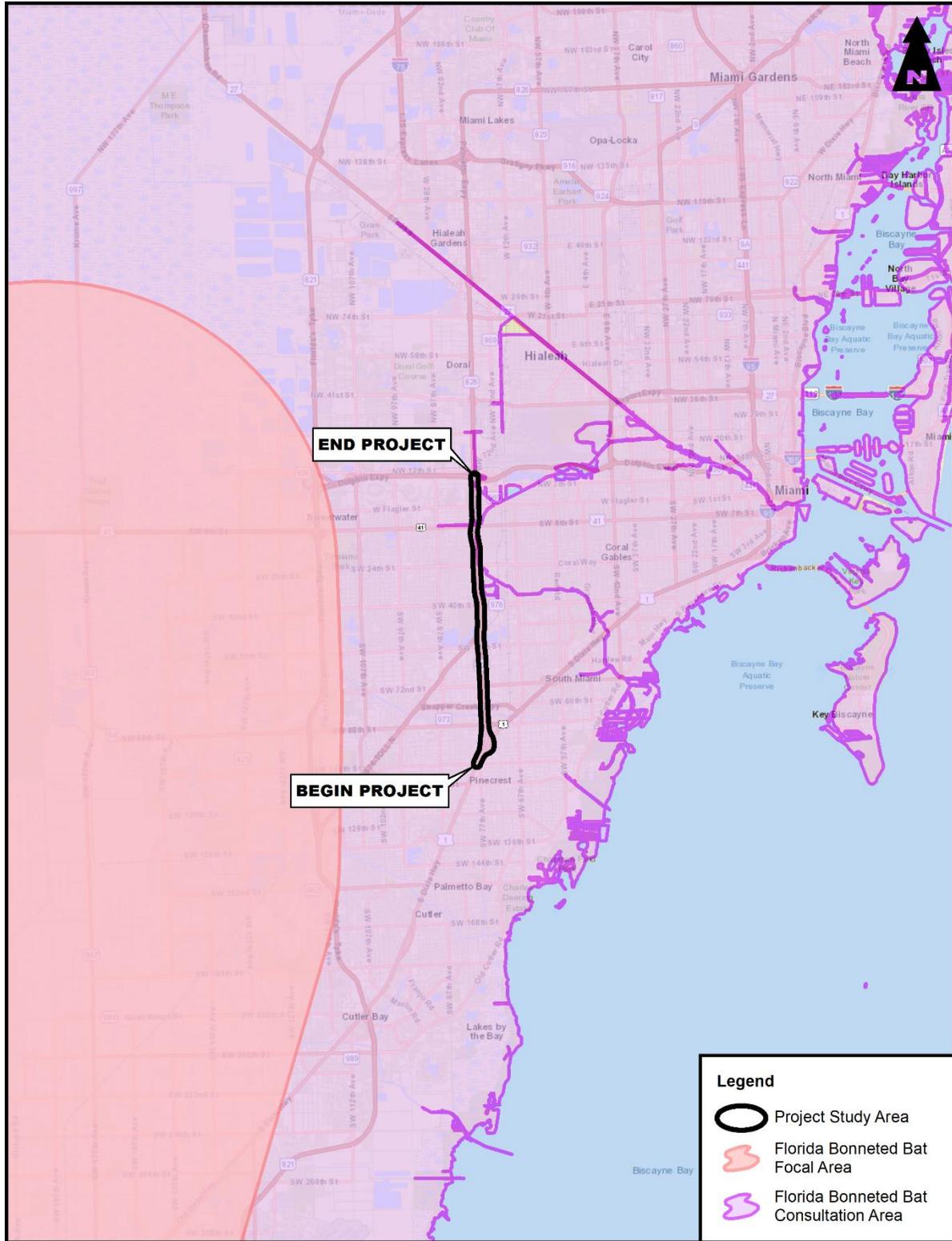


Figure 4 - 2: Florida Bonneted Bat Focal and Consultation Areas

**West Indian Manatee (*Trichechus manatus*):** 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 Build Alternatives contain some suitable habitat for this species consisting of surface water canals ([Figure 4-3](#)).

In-water work is anticipated to occur as a result of this project. Bridge replacements, bridge removals, bridge widenings, culvert replacements, piling removals and installations, and culvert installations will take place throughout the project corridor. The above work is proposed for all three viable build alternatives. However, Alternative 1 does not include work south of SW 88<sup>th</sup> Street (Kendall Drive). Therefore, this alternative does not include work within the C-100A Canal. Below is a list of construction activities that have the potential to impact the West Indian manatee and/or its habitat.

**Bridges:**

- Bridge Replacements:
  - SR 826 Bridge (#870795) over Snapper Creek Canal
- Bridge Demolishing (Removal):
  - SR 826 Bridge (#870794) over Snapper Creek Canal
  - SR 826 Bridge (#874257) over Snapper Creek Canal
- Bridge Widening:
  - SR 826 Bridge (#870286) over Snapper Creek Canal
- Tamiami Canal (C-4 Canal): bridge demolition, new bridge construction, and installation of new piles (in-water work).
- North Line Canal: new bridge construction from 826 NB ramp to SR 836 EB (work over canal).

**Culverts:**

- C-100A - box culvert replacement.
  - This culvert is expected to be greater than 8 feet in diameter (the exact dimensions will be determined during the final design phase of the project). Therefore, manatee exclusion grates are not warranted.
- Coral Gables Canal (county canal):
  - SB off ramp from SR 826 to SW 24<sup>th</sup> Street /Coral Way
    - A portion of the SB off ramp will be widened over the existing Coral Gables Canal by approximately 200-250 feet. This culvert is expected to be greater than 8 feet in diameter (the exact

dimensions will be determined during the final design phase of the project). Therefore, manatee exclusion grates are not warranted. This portion will be culverted to accommodate the widened roadway. Air exchange risers will be constructed every 100-150 feet to sustain water /air quality within the culvert.

- East side of SR 826 from the hypothetical SW 23<sup>rd</sup> Street to 16<sup>th</sup> Terrace.
  - This area will be culverted for a distance of approximately 1,500-1,600 feet. Air exchange risers will be constructed every 100-150 feet to sustain water /air quality within the culvert.
  - This culvert is expected to be greater than 8 feet in diameter (the exact dimensions will be determined during the final design phase of the project). Therefore, manatee exclusion grates are not warranted.
- NB off ramp from SR 826 to SW 8<sup>th</sup> Street (Tamiami Trail)
  - This area will be culverted for a distance of approximately 700 feet. Air exchange risers will be constructed every 100-150 feet to sustain water /air quality within the culvert.
  - This culvert is expected to be greater than 8 feet in diameter (the exact dimensions will be determined during the final design phase of the project). Therefore, manatee exclusion grates are not warranted.

Although no manatees were observed during the field reviews, this species was assigned a 'high' probability of occurrence within the project study area. This project exists upstream of salinity control structures within these waterways; however, manatees have been observed in these waterways within the project limits. In addition, federally-listed critical habitat exists within the project limits for the West Indian manatee within the C-3 Canal (Coral Gables Canal), C-4 Canal (Tamiami Canal), and the North Line Canal (**Figure 4-3**). The proposed alternatives will result in minor impacts to the overall critical habitat area within the project corridor, however, these impacts will not inhibit manatee movement.

Minor impacts to West Indian manatee potential foraging is anticipated to occur during in-water work. However, in-water work will not inhibit manatee movement between foraging areas. In addition, the installation of culverts will result in the alteration of canal substrate within the area of the culvert, which may result in minor impacts to overall potential foraging area.

To increase the protection of this species during construction, the FDOT will adhere to the most current version of the *Standard Manatee Conditions for In-Water Work* (**Appendix E**) and the latest edition of *FDOT Standard Specifications for Road and Bridge Construction*. Therefore, the FDOT has determined that the proposed project, regardless of the Build Alternative “May Affect, Not Likely to Adversely Affect” the West Indian Manatee.

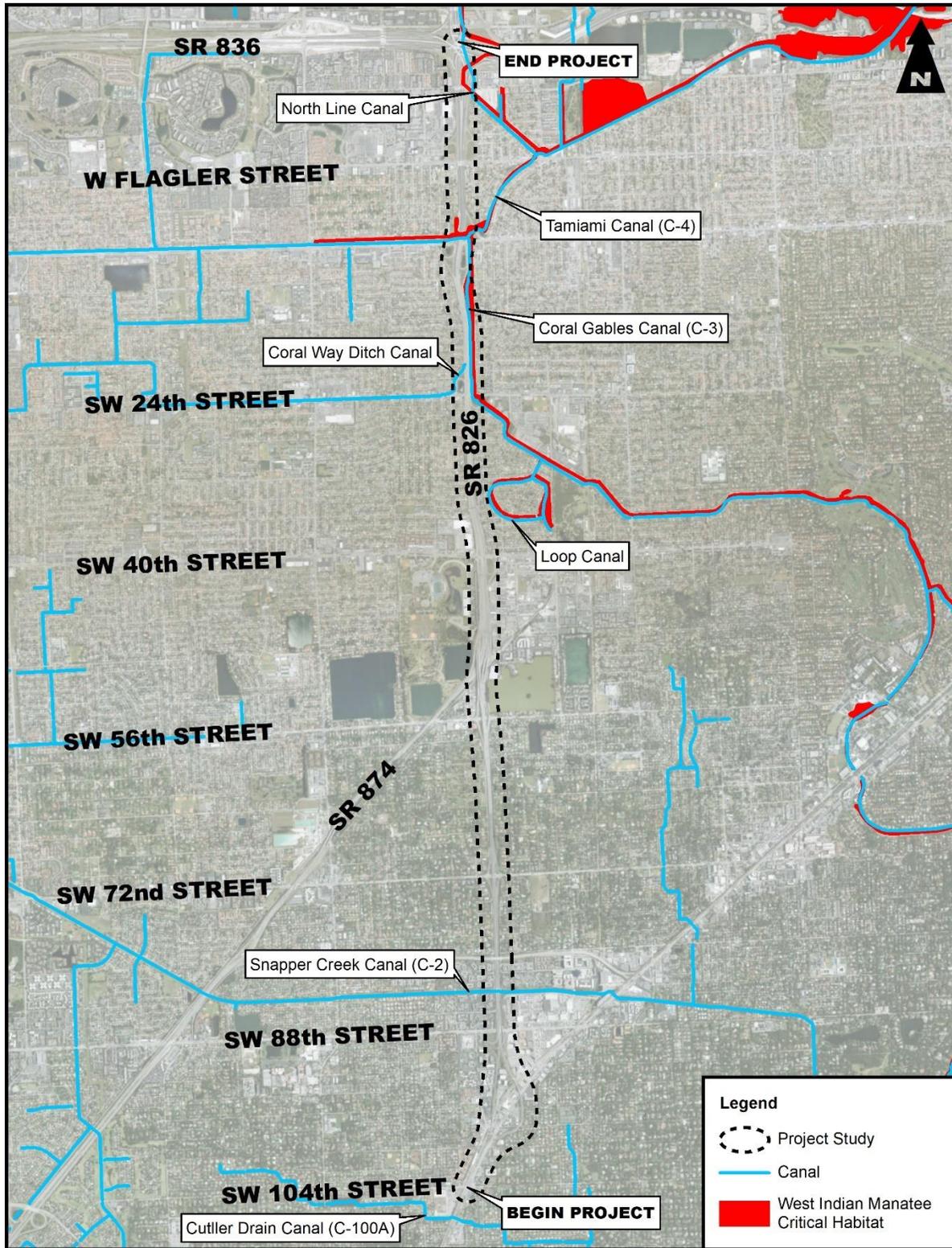


Figure 4 - 3: West Indian Manatee Critical Habitat

## 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. The Build Alternatives contain very little suitable habitat for this species; no nests have been documented within one mile of the project study area and none were observed during the field reviews. The project area is also highly urbanized and far from known crocodile habitat making it unlikely that the project will affect crocodile nesting areas. However, the project area is within the American crocodile consultation area ([Figure 4-4](#)). Therefore, this species was assigned a ‘low’ probability of occurrence within the project study area.

Although there is a very low probability of occurrence for the American Crocodile, construction activities could affect the American crocodile’s behavior, causing them to avoid the areas of proposed construction. Such impacts would be minimal and localized to the construction area, temporary (lasting only for the duration of construction) and are not expected to jeopardize the continued existence of the American crocodile.

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 Build Alternative will have “No Effect” on the American crocodile.

The contractor will be advised of state and local law regarding the harassment of crocodiles prior to the commencement of and during construction activities. Best Management Practices (BMPs) would be implemented in accordance with the latest edition of *FDOT Standard Specifications for Road and Bridge Construction* in order to satisfy permit requirements and minimize potential impacts from construction activities.

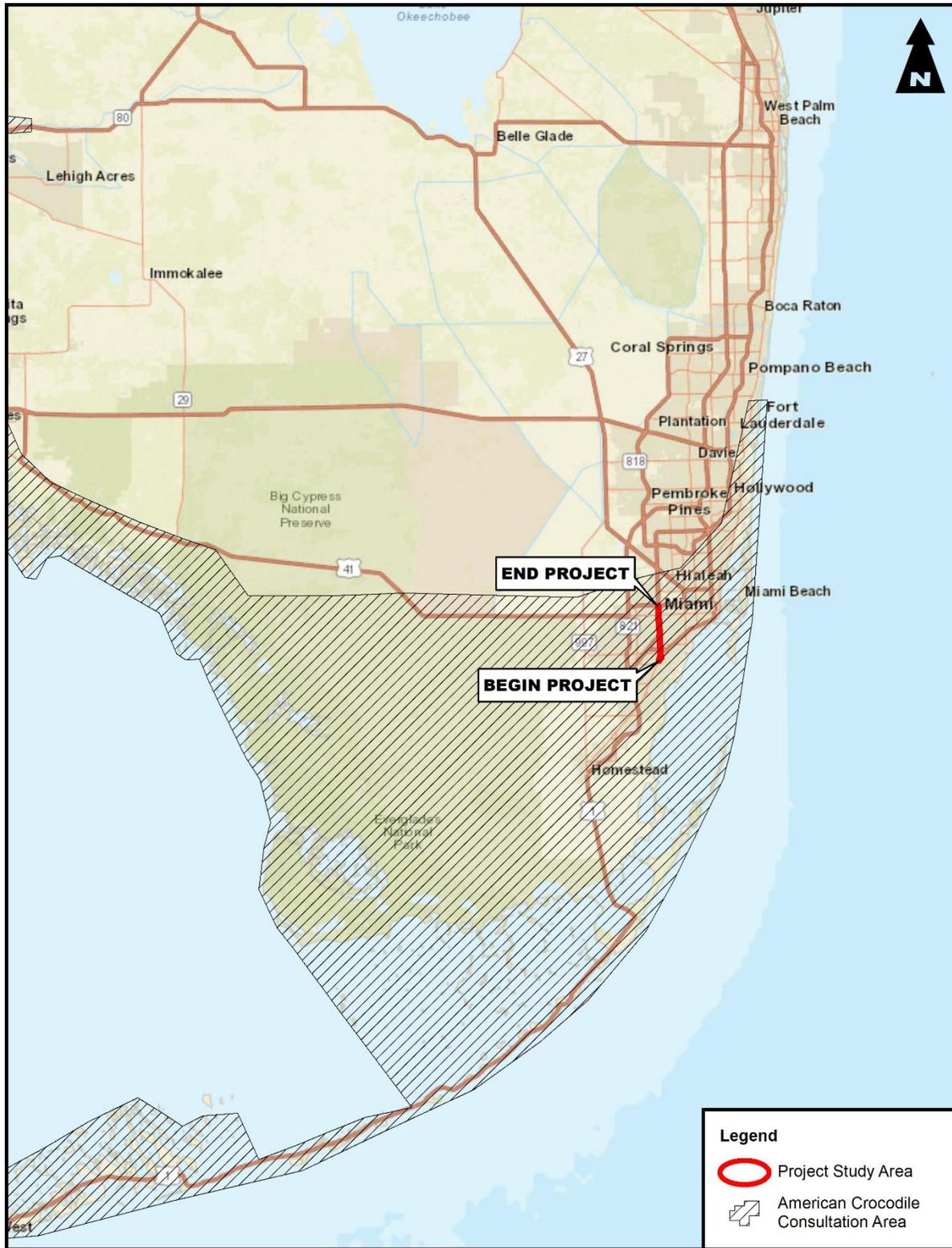


Figure 4 - 4: American Crocodile Consultation Area

**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. Quality suitable habitat is not present within the project study area and this species has not been documented within or adjacent to the Build Alternatives. In addition, 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 (Appendix F)*. FDOT has determined that implementation of the Build Alternatives will have “No effect” on the eastern indigo snake.

### **Birds**

**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. No suitable habitat is present for the Everglade snail kite within the project corridor and none were observed during field reviews. However, the project area is within the snail kite consultation area. Therefore, this species has been assigned a probability occurrence of ‘low’. Temporary foraging impacts are expected to occur during construction, however, no permanent adverse impacts are anticipated to occur as a result of the project. Therefore it is anticipated that implementation of the Build Alternatives will have “No effect” on the Everglade snail kite.

**Wood Stork (*Mycteria americana*):** The wood stork is federally listed as threatened due to a 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. 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. Portions of existing wet retention ponds/swales within the project corridor offer marginal foraging habitat for the wood stork after heavy rain events. However, these features exist within the infields and medians of a heavily traveled highway.

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 4-5](#) for wood stork CFA locations). Marginal suitable foraging habitat is present within the limits of 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. The Build Alternatives 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 SR 826 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), all three of the proposed viable build alternatives will impact suitable foraging habitat at locations greater than 0.47 miles from an active colony site. In addition, project impacts to suitable foraging habitat within the CFA of a colony site will exceed 0.5 acres in size. 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. Compensation will replace any lost potential foraging habitat equal to in value, or higher than that of impacted wetlands. Based on this information, it is anticipated that implementation of any Build Alternative "May Affect, but is Not Likely to Adversely Affect" the wood stork.

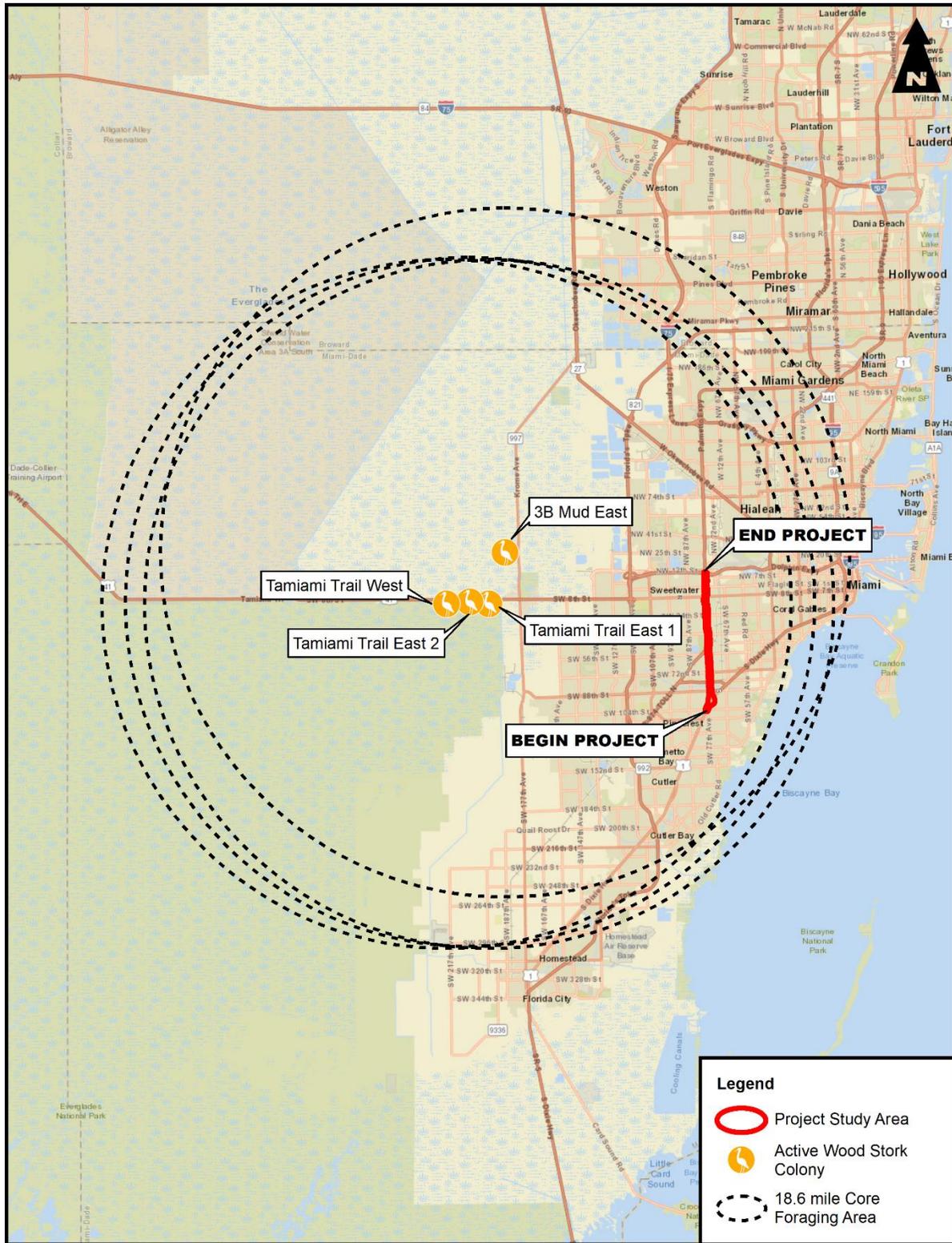


Figure 4 - 5: Active Nesting Wood Stork Colonies

## State Listed Species

**Little Blue Heron (*Egretta caerulea*):** The little blue heron is state listed as threatened due to coastal development, disturbance at foraging and breeding sites, environmental issues, degradation of feeding habitat, reduced prey availability, and predators. Little blue herons inhabit fresh, salt, and brackish water environments in Florida including swamps, estuaries, ponds, lakes, and rivers (Rodgers et al. 1995). Their diet primarily consists of fish, insects, shrimp, and amphibians and they feed alone, usually along freshwater systems and on floating vegetation.

No individuals were observed during the field reviews, however portions of existing wet retention ponds/swales within the project corridor offer marginal foraging habitat for the little blue heron after heavy rain events. Temporary foraging impacts are expected to occur during construction, however, no permanent adverse impacts are anticipated to occur as a result of the project. 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 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. 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 adverse effect anticipated*” on the little blue heron.

**Reddish Egret (*Egretta rufescens*):** The reddish egret is state listed as threatened due to coastal development, recreational disturbance at foraging and breeding sites, habitat degradation, loss of genetic diversity, and increased pressure from predators. Reddish egrets inhabit coastal areas, mainly on estuaries near mangroves, and lagoons, but they can also be found on dredge spoiled islands.

The diet of the reddish egret primarily consists of small fish. Reddish egrets have a very distinctive foraging behavior. They run after their prey and can appear to be “dancing” as they jump and weave back and forth with wings spread while hunting.

No individuals were observed during the field reviews, however portions of existing wet retention ponds/swales within the project corridor offer marginal foraging habitat for the reddish egret after heavy rain events. Temporary foraging impacts are expected to occur during construction, however, no permanent adverse impacts are anticipated to occur as a result of the project. 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 adverse effect anticipated*” on the Reddish Egret.

**Roseate Spoonbill (*Platalea ajaja*):** The roseate spoonbill is state listed as threatened due to low food availability and habitat degradation. Other threats include habitat loss and disturbance, pesticides, and illegal shootings. In Florida, this species is found in Florida Bay, Tampa Bay, and Brevard County. Their specialized bill has sensitive nerve endings which help the birds search for food in shallow water. The diet of the roseate spoonbill primarily consists of crayfish, shrimp, crabs, and small fish.

No individuals were observed during the field reviews, however portions of existing wet retention ponds/swales within the project corridor offer marginal foraging habitat for the roseate spoonbill after heavy rain events. Temporary foraging

impacts are expected to occur during construction, however, no permanent adverse impacts are anticipated to occur as a result of the project. 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 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 adverse effect anticipated*” on the roseate spoonbill.

**Southeastern American Kestrel (*Falco sparverius paulus*):** Southeastern American kestrels are listed as threatened by the FWC. Kestrels can be found in open pine habitats, woodland edges, prairies, and pastures. Availability of suitable nesting sites is essential during the breeding season. Nest sites are tall dead trees or utility poles generally with an unobstructed view of surroundings. Open patches of grass or bare ground are needed for detection of prey. These birds are found throughout Florida year-round, but seasonal occurrence is complicated by the arrival of northern migrants in winter. The subspecies that breeds in Florida is a listed species, but northern migrants are not; therefore, all birds observed during the breeding season (April through early September) should be treated as the listed subspecies.

One kestrel was observed flying across the project corridor during the wildlife surveys. Therefore, the probability of occurrence for this species is high. The various SR 826 interchange areas do offer marginal foraging habitat for the southeastern American kestrel, but suitable breeding habitat is not present within or directly adjacent to the project right-of-way. While temporary disruption of foraging habitat may occur during construction, no long-term adverse impacts are

anticipated. Therefore “No adverse effect anticipated” to the southeastern American kestrel.

### 4.3.2 Listed Plant Species

#### **Federally Listed Species**

No federally listed plant species were identified during the field reviews. Since there is very limited habitat for these plant species and most of the area within the project corridor is regularly mowed and maintained by the FDOT for safety, it is unlikely that occurrences of these protected plant species will be observed within the project corridor. Critical habitat for Carter's small-flowered flax (*Linum carteri carteri*) and Florida brickell-bush (*Brickellia mosieri*) exists outside the 500 foot buffer of the project corridor. Therefore, no adverse impacts to federally protected plant species are expected to occur as a result of the proposed project.

#### **State Listed Species**

The SR 826 South Express Lanes project corridor has been significantly altered and is essentially built out. During the field reviews, three state listed species [West Indian mahogany (*Swietenia mahogany*) (threatened), Florida royal palm (*Roystonea regia*) (endangered), and Simpson's stopper (*Myrciathes fragrans*) (threatened)] were observed as part of the planted landscaping within the project corridor. However, no naturally occurring state listed species or natural habitat for these species was observed. Some individuals will be impacted and/or possibly relocated as a result of their current location.

Although unavoidable impacts to state listed plant species may occur, statutory protection of state listed plants is not applicable if the clearing of land is performed by a public agency when acting in the performance of its obligation to provide service to the public [Section 581.185(8)(c) Florida Statute], excerpted below:

“(8) EXEMPTIONS.—No provision of this section shall apply to:  
 (c) The clearing of land by a public agency or a publicly or privately owned public utility when acting in the performance of its obligation to provide service to the public.”

Therefore, no adverse effect to these plant species are anticipated as a result of the proposed project.

### 4.3.3 Other Protected Species

**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. One bald eagle nest is reported within one mile of the project study area. The nest is located approximately 0.25 miles (1,320 feet) east of SR 826 on an island in the center of a man-made lake located just north of SW 56<sup>th</sup> Street ([Figure 4-6](#)). Therefore, this species has been assigned a probability occurrence of 'moderate'. No impacts to the nest or the lake will occur as a result of this project, however temporary foraging impacts may occur during construction.

**Osprey (*Pandion haliaetus*):** Ospreys are afforded protection under the MBTA (16 U.S.C.703-712) and state protected by Chapter 68A F.A.C. Four ospreys were observed flying over the project corridor during the field review. Although both active and inactive osprey nests are federally protected, only active nests require federal permits for taking. Under state rules only inactive osprey nests may be taken, as determined by the absence of eggs or flightless young at the nest. Typically, a replacement nesting structure located in the immediate vicinity is required to be erected. The selected Build Alternative will be surveyed for active osprey nests during the design and permitting phase of the project, and permits will be acquired if impacts to active nests during construction are unavoidable.

### 4.3.4 Notable Habitats

#### 4.3.4.1 Critical Habitats

Critical habitat is a specific, federally-designated, geographic area that is essential for the conservation of a threatened or endangered species that may require special management and protection. Critical habitat may include an area that is not currently occupied by the species, but that will be needed for its

recovery. An area is designated as critical habitat after the USFWS publishes a proposed federal regulation in the Federal Register and then receives public comments on the proposal. The final boundaries of the critical habitat areas are also published in the Federal Register.

Critical Habitat for the West Indian manatee exists within the proposed limits of the Build Alternatives [C-3 (Coral Gables Canal), C-4 (Tamiami Canal), North Line, and Loop Canal]. As discussed above in section 4.3.1, in-water work for each of these waterways with the exception of the Loop Canal is anticipated to occur as a result of this project. Bridge replacements, bridge removals, bridge widenings, culvert replacements, and culvert installations will take place throughout the project corridor. Although construction will occur within the limits of these features, no adverse impacts to the limits of these waterways are anticipated to occur. For the portions of the waterways that will be culverted, air risers will be installed every 100-150 feet along the culverted sections to maintain water/air quality. Although the proposed alternatives will result in minor impacts to the overall critical habitat area within the project corridor, these impacts will not inhibit manatee movement. Therefore, no long term adverse impacts to these waterways (i.e. Critical Habitat) will occur as a result of this project.

In addition, Critical Habitat for Carter's small-flowered flax (*Linum carteri carteri*) and Florida brickell-bush (*Brickellia mosieri*) occurs within close proximity of the proposed project (**Figure 4-6**), however these locations are outside the limits of the proposed project and will not be impacted.

#### 4.3.4.2 Strategic Habitat Conservation Areas

Strategic Habitat Conservation Areas (SHCA) are defined as regions not in public ownership, which are recommended for protection in order to maintain biological diversity. These SHCA designations are intended to indicate that the existing land use should be maintained in order to conserve state-wide biodiversity. According to the FFWCC, SHCAs were mapped state-wide in association with the FFWCC's Closing the Gaps in Florida's Wildlife Habitat Conservation System report (Cox et al., 1994).

There are no Strategic Habitat Conservation Areas within close proximity to the project corridor. As such, no impacts are anticipated as a result of the proposed project.

#### 4.3.4.3 Essential Fish Habitat

The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) (MSFCMA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), established procedures designed to identify, conserve, and enhance Essential Fish Habitat (EFH) for those species regulated under a federal fisheries management plan (FMP). Section 305(b)(2) of the MSFCMA requires federal action agencies to consult with National Oceanographic Atmospheric Administration's (NOAA) National Marine Fisheries Service (NMFS) on all actions or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH. EFH is defined in the MSFCMA as "...those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity."

In accordance with Part 2, Chapter 17 (Essential Fish Habitat) of the FDOT PD&E Manual, coordination with NMFS occurred through the ETDM Screening Tool and through direct conversations with staff. The ETDM response stated that the proposed project would not impact areas that support NMFS trust resources. Therefore, no action is required pursuant to the EFH requirements of the Magnuson-Stevens Act. See [Appendix A](#) for ETDM responses.

#### 4.3.4.4 Other Notable Communities in Close Proximity to the Project

Three environmentally endangered land sites including Tropical Park, Park Natural Areas, and Miami Rockridge Pinelands exist within close proximity to the project corridor ([Figure 4-6](#)). Due to the distance of these areas from the project corridor, no impacts to these other notable communities will occur as a result of the proposed project.



Figure 4 - 6: Notable Communities in Close Proximity to the Project Corridor

## 5.0 WETLANDS AND SURFACE WATERS

### 5.1 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 (Wetlands and Other Surface Waters) 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.

Agencies that provided comments during the ETDM Process included the U.S. Environmental Protection Agency (USEPA), USACE, Florida Department of Environmental Protection (FDEP), SFWMD, NMFS, and the FWS. The Degree of Effect (DOE) for the Wetlands issue varied from 2 (Minimal) to 3 (Moderate).

The USEPA assigned a 3 (Moderate) DOE for the project since there are potential impacts to the following resources:

- Tamiami Canal (C-4)
- Two freshwater ponds at the SR 826 and SW 8<sup>th</sup> Street/Tamiami Trail interchange
- Coral Gables Canal (C-3)
- Two freshwater ponds at the SR 826 and SW 24<sup>th</sup> Street/Coral Way interchange
- Tropical Lake
- Lake (Reach Code #03090206049850) located west of confluence between SR 874/Don Shula Expressway and SR 826
- Lake (Reach Code #03090206049851) located east of confluence between SR 874/Don Shula Expressway and SR 826
- Snapper Creek Canal (C-2)
- Freshwater pond (Reach Code #03090206049941) north of confluence between SR 826 and US 1/Pinecrest Parkway

The FDEP assigned a 2 (Minimal) DOE since wetlands may occur within and near the project corridor. The SFWMD assigned a 2 (Minimal) DOE since there may be

wetland vegetation within the various lakes and canals. The USACE assigned a 2 (Minimal) DOE for the project since 18.47 acres of lacustrine, palustrine, and riverine wetlands are located within the 100-foot project buffer. These wetlands are associated with the ponds and canals within the area. In addition, the proposed project corridor lies within the Miami urbanized area, making it possible that the existing ponds may account for quite a bit of the National Wetlands Inventory (NWI) identified wetlands acreage. The FWS assigned a 2 (Minimal) since wetlands may occur within and near the project site. The NMFS assigned a 2 (Minimal) since the proposed work would not directly impact wetland areas that support National Oceanic and Atmospheric Administration (NOAA) trust fishery resources. 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 BMPs should be implemented during construction.

## 5.2 Methodology

In order to determine preliminary locations and boundaries of the existing wetlands, surface water communities and stormwater retention/conveyance features within and adjacent to the project area, available site-specific data was collected and reviewed. Published site-specific data reviewed included the following:

- U.S. Department of Agriculture, Natural Resources Conservation Service, Interactive Web Soil Survey of the project area (2019)
- U.S. Geological Survey, 7.5-Minute Series Topographic Quadrangle Maps
- FDOT, Florida Land Use, Cover and Forms Classification System (FLUCFCS), 3rd Edition (1999)
- U.S. Fish and Wildlife Service Classification of Wetlands and Deepwater Habitats of the United States (1979)
- Aerial photographs of the project area at 1 inch = 100 feet, 1 inch = 300 feet, and 1 inch = 1000 feet scales (2019)
- Miami-Dade County GIS data (2019)

Using the above-referenced information, the approximate boundaries of existing wetlands, surface water communities, and stormwater retention/conveyance features were mapped in GIS on aerial photography.

On November 13<sup>th</sup>, 14<sup>th</sup>, 15<sup>th</sup>, and 16<sup>th</sup>, 2018 and December 10<sup>th</sup> and 13<sup>th</sup>, 2018, 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 G](#)). 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.

### 5.3 Surface Waters and Stormwater Drainage Features

The existing surface waters and stormwater drainage retention areas within the study area vary in terms of habitat value, quality, level of intrusion by exotic/invasive (undesirable) vegetative species, and degree of geographical isolation. Field investigations identified three SFWMD-owned canals, one Miami Dade County-owned canal, six surface water features, twelve stormwater detention/retention features, and nine drainage conveyance features (see [Figure 5-1](#) 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 5-1](#). Descriptions of each are also provided below.

**Table 5 - 1: Summary of Individual Surface Waters**

Name	Acres in Study Area	FLUCFCS Code	FLUCFCS Description	FWS Wetland Classification
SF01	0.22	510	Streams and Waterways	PEM1A/h
SF02	0.03	510	Streams and Waterways	PEM1A/h
SF03	0.04	510	Streams and Waterways	PEM1A/h
SF04	1.41	530	Reservoirs	PUBHx
SF05	0.35	530	Reservoirs	PUBHx
SF06	1.11	530	Reservoirs	PUBHx
SF07	2.19	530	Reservoirs	PUBHx
SF08	0.25	530	Reservoirs	PUBHx
SF09	0.87	530	Reservoirs	PUBHx
SF10	0.87	510	Streams and Waterways	PEM1A/h
SF11	0.12	530	Reservoirs	PUBHx
SF12	0.12	510	Streams and Waterways	PEM1A/h
SF13	0.50	510	Streams and Waterways	PEM1A/h
SF14	1.29	530	Reservoirs	PUBHx
SF15	0.17	530	Reservoirs	PUBHx
SF16	0.05	510	Streams and Waterways	PEM1A/h
SF17	0.02	510	Streams and Waterways	PEM1A/h
SF18	0.22	530	Reservoirs	PUBHx
SF19	2.44	530	Reservoirs	PUBHx
SF20	0.64	530	Reservoirs	PUBHx
SF21	1.35	530	Reservoirs	PUBHx
SF22	7.57	530	Reservoirs	PUBHx
SF23	1.28	530	Reservoirs	PUBHx
SF24	2.97	530	Reservoirs	PUBHx
SF25	0.00	530	Reservoirs	PUBHx
SF26	1.52	530	Reservoirs	PUBHx
SF27	0.63	530	Reservoirs	PUBHx
Snapper Creek Canal (C-2)	2.87	510	Streams and Waterways	R2UBHx / R5UBH
Coral Gables Canal (C-3)	12.80	510	Streams and Waterways	R2UBHx
Tamiami Canal (C-4)	3.49	510	Streams and Waterways	R2UBHx
North Line Canal	2.82	510	Streams and Waterways	R2UBHx

PEM1A/h – palustrine, emergent, persistent, temporarily flooded/permanently flooded

PUBHx – palustrine, unconsolidated bottom, permanently flooded, excavated

R2UBHx – riverine, lower perennial, unconsolidated bottom, permanently flooded, excavated

R5UBHx - riverine, unknown perennial, unconsolidated bottom, permanently flooded, excavated

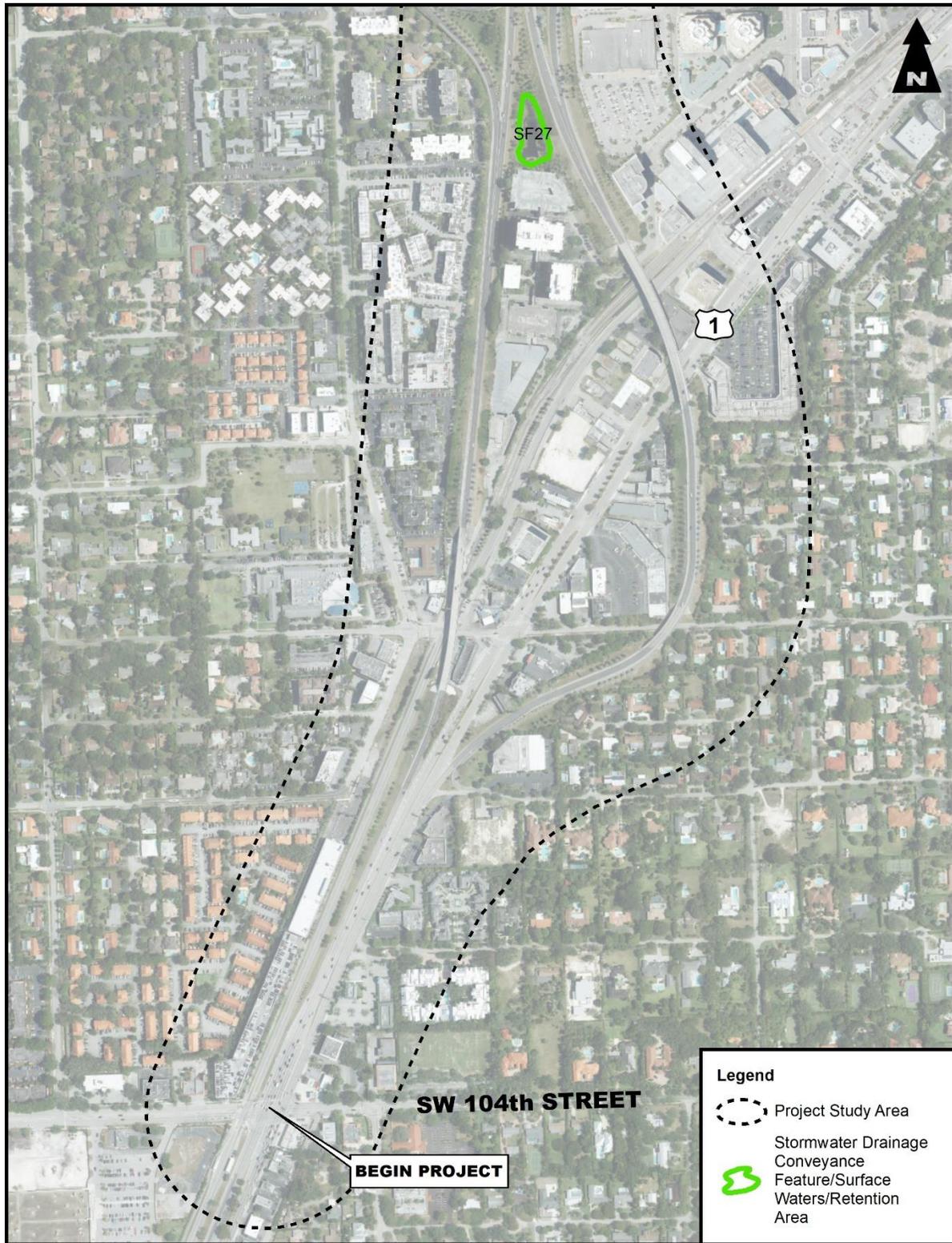


Figure 5 - 1: Individual Surface Water Locations (1 of 8)



Figure 5 - 1: Individual Surface Water Locations (2 of 8)



Figure 5 - 1: Individual Surface Water Locations (3 of 8)



Figure 5 - 1: Individual Surface Water Locations (4 of 8)

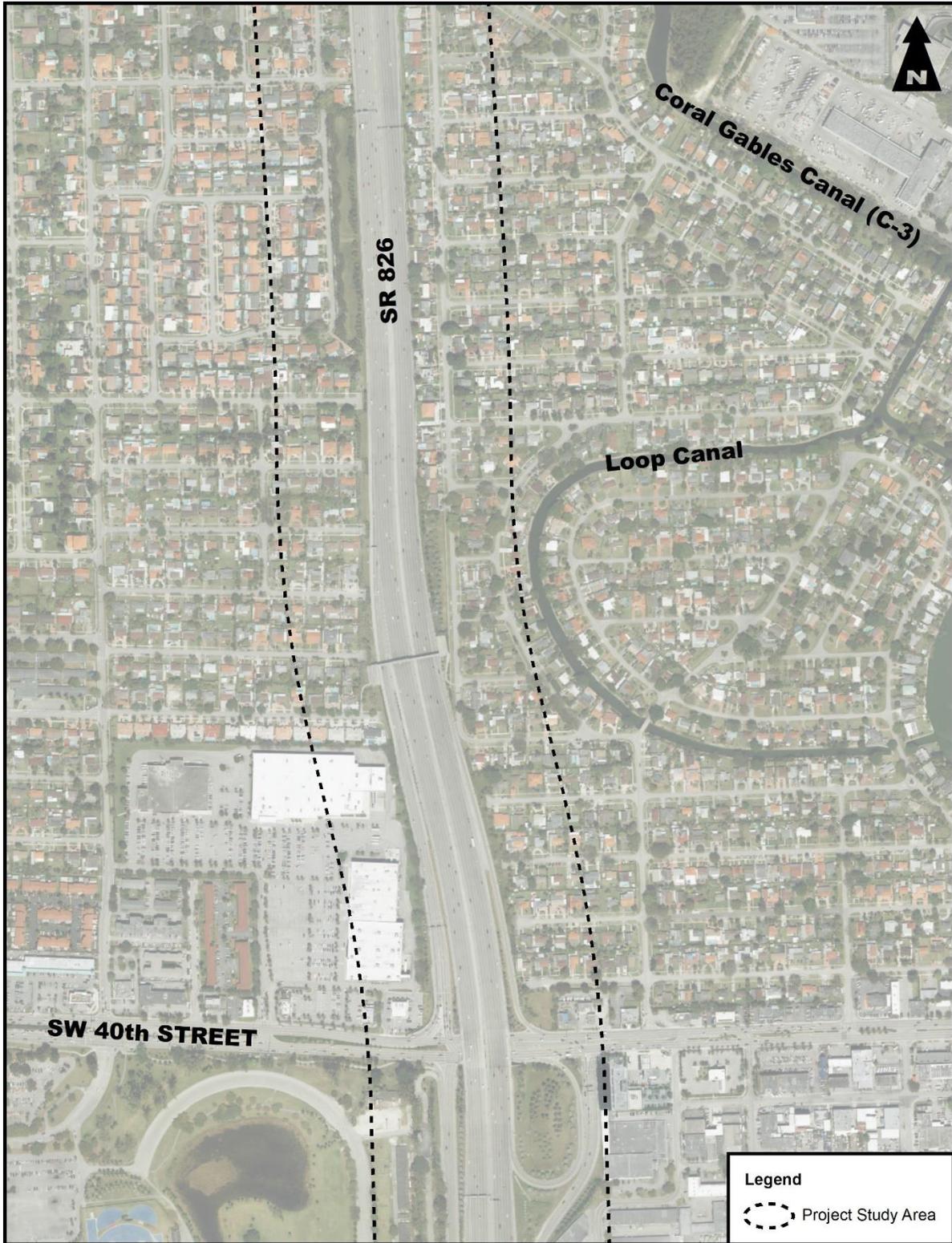


Figure 5 - 1: Individual Surface Water Locations (5 of 8)



Figure 5 - 1: Individual Surface Water Locations (6 of 8)



Figure 5 - 1: Individual Surface Water Locations (7 of 8)



Figure 5 - 1: Individual Surface Water Locations (8 of 8)

**C-100A Canal (Cutler Drain Canal)**

**FLUCFCS – 510 (Streams and Waterways)**

**USFWS – R2UBHx (Riverine, Lower Perennial, Unconsolidated Bottom, Permanently Flooded, Excavated)**

The C-100A canal (Cutler Drain Canal) runs east-west, perpendicularly transecting US Highway 1, located north of the US 1 and SW 110<sup>th</sup> Street intersection (approximate coordinates: 25.6709, -80.3216). The C-100A canal is a linear water body with a muddy unconsolidated or exposed bedrock substrate maintained by the SFWMD. Below the waterline, this feature exhibited a minimal littoral area dropping steeply with bedrock sidewalls. Armored concrete bulkheads and concrete rip-rap bags were observed at the bridge spanning the waterway. The C-100A canal primarily functions as a stormwater conveyance canal. The canal was inundated and flowing at the time of the survey. Approximately 50% of the submerged vegetation appeared to be swampweeds (*Hygrophila* sp.). The overall wildlife habitat quality of this canal is low due to consistent disturbance and close proximity to major roadways. Potential wood stork foraging habitat quality is low due to the minimal littoral area available that would contribute to suitable foraging habitat for this species. No wildlife nor threatened or endangered species were observed during the survey.

**C-2 Canal (Snapper Creek Canal)**

**FLUCFCS – 510 (Streams and Waterways)**

**USFWS – R2UBHx (Riverine, Lower Perennial, Unconsolidated Bottom, Permanently Flooded, Excavated)**

The C-2 canal (Snapper Creek Canal) runs east-west, perpendicularly transecting the SR 826 Extension, located directly north of the SR 826 and SW 88<sup>th</sup> Street intersection (approximate coordinates: 25.6921, -80.3171). The C-2 canal is a linear water body with a muddy unconsolidated or exposed bedrock substrate maintained by the SFWMD. Below the waterline, this feature exhibited a minimal littoral area dropping steeply with bedrock sidewalls. Armored concrete bulkheads and concrete rip-rap bags were observed at the bridge spanning the waterway. An aerial crossing of a natural gas pipeline runs parallel to SR 826 to the east also crossing the C-2 Canal. Minimal emergent wetland vegetation was observed. Aquatic vegetation is regularly suppressed with herbicide application. No littoral shelf exists along the generally steep sloping banks. The C-2 canal primarily functions as a stormwater conveyance canal. The canal was inundated

and flowing at the time of the survey. The overall wildlife habitat quality of this canal is low due to consistent disturbance and application of herbicides. Potential wood stork foraging habitat quality is low due to a short hydroperiod with minimal inundation and proximity to high speed roadways. No wildlife nor threatened or endangered species were observed during the survey.

**C-3 Canal (Coral Gables Canal)**

**FLUCFCS – 510 (Streams and Waterways)**

**USFWS – R2UBHx (Riverine, Lower Perennial, Unconsolidated Bottom, Permanently Flooded, Excavated)**

The C-3 Canal (Coral Gables Canal) runs north-south, running parallel to SR 826 for approximately one mile - from Coral Way in the south (approximate coordinates: 25.7470, -80.3182) to SW 8<sup>th</sup> Street in the north (approximate coordinates: 25.7636, -80.3187). The C-3 canal is a linear waterbody with a muddy unconsolidated or exposed bedrock substrate maintained by the SFWMD. Below the waterline, this feature exhibited a minimal littoral area dropping steeply with bedrock sidewalls. Minimal emergent wetland vegetation was observed along the bank. These species include false nettle (*Boehmeria cylindrica*) and mexican primerosewillow (*Ludwigia octovalvis*). No submerged vegetation was observed. A minimal littoral shelf exists along the steep sloping banks. The C-3 canal primarily functions as a stormwater conveyance canal. The canal was inundated and flowing at the time of the survey. The overall wildlife habitat quality of this canal is low due to lack of vegetation and proximity to major roadways. Potential wood stork foraging habitat quality is low due to the minimal littoral area available at these features that would contribute to suitable foraging habitat for this species. Wildlife species observed during the survey include great egret (*Ardea alba*), moorhen (*Gallinula*), and green iguana (*Iguana iguana*). Peacock bass (*Cichla* sp.), oscar (*Astronotus ocellatus*) and mullet (*Mugilidae* sp.) were observed in the water. No threatened or endangered species were observed.

**C-4 Canal (Tamiami Canal)**

**FLUCFCS – 510 (Streams and Waterways)**

**USFWS – R2UBHx (Riverine, Lower Perennial, Unconsolidated Bottom, Permanently Flooded, Excavated)**

The C-4 Canal (Tamiami Canal) runs north-east and is hydrologically connected to the C-3 Canal in the south and to the North Line Canal in the north. The C-4

Canal intersects the project area at the intersection of W Flagler Street and SW 72<sup>nd</sup> Avenue (approximate coordinates: 25.7701, -80.3130). The C-4 canal is a linear water body with a muddy unconsolidated or exposed bedrock substrate maintained by the SFWMD. Below the waterline, this feature exhibited a minimal littoral area dropping steeply with bedrock sidewalls. Armored concrete bulkheads and concrete rip-rap bags were observed at bridges spanning the waterway. Minimal emergent wetland vegetation was observed along the bank and no submerged vegetation was observed. Minimal littoral shelf exists along the steep sloping banks. The C-4 canal primarily functions as a stormwater conveyance canal. The canal was inundated and flowing at the time of the survey. The overall wildlife habitat quality of this canal is low due to consistent disturbance and proximity to major roadways. Potential wood stork foraging habitat quality is low due to the minimal littoral area available that would contribute to suitable foraging habitat for this species. Wildlife species observed during the survey include great egret and green iguana. Peacock bass, oscar, and mullet were observed in water. No threatened or endangered species were observed.

### **C-NLC Canal (North Line Canal)**

#### **FLUCFCS – 510 (Streams and Waterways)**

#### **USFWS – R2UBHx (Riverine, Lower Perennial, Unconsolidated Bottom, Permanently Flooded, Excavated)**

The C-NLC (North Line Canal) runs north-south, parallel to SR 826, entering the project site directly south-east of the intersection of SR 826 and SR 836 in the south (approximate coordinates: 25.7766, -80.3192) and south of NW 25<sup>th</sup> Street in the north (approximate coordinates: 25.7937, -80.3208). The C-NLC is a linear water body with a muddy unconsolidated or exposed bedrock substrate maintained by the SFWMD. Below the waterline, this feature exhibited a minimal littoral area dropping steeply with bedrock sidewalls. Carolina fanwort (*Cabomba caroliniana*) was observed within the minimal emergent wetland vegetation. No submerged vegetation was observed. Aquatic vegetation is regularly suppressed with herbicides application. A minimal littoral shelf exists along the steep sloping banks. The C-NLC canal primarily functions as a stormwater conveyance canal. The canal was inundated and flowing at the time of the survey. The overall wildlife habitat quality of this canal is low due to lack of vegetation and proximity to major roadways. Potential wood stork foraging habitat quality is low due to the minimal littoral area available at these features that would contribute to suitable foraging

habitat for this species. Wildlife species observed during the survey include cattle egrets (*Bubulcus ibis*) and boat tail grackle (*Quiscalus major*). No threatened or endangered species were observed.

**Surface Waters: SF 06, 21, 23, 24, 25, 27**

**FLUCFCS – 530 (Reservoirs)**

**USFWS – PUBHx (Palustrine, Unconsolidated Bottom, Permanently Flooded, Excavated)**

Surface water features SW01, SF06, SF21, SF23, SF24, SF25, and SF27 are excavated deep water drainage retention features (ponds) within the project limits along SR 826. These features are permanently inundated open water ponds and are located within landscaped areas that are regularly mowed up to the waterline. Emergent vegetation ranges from sparse to moderate density, with torpedograss (*Panicum repens*) forming the dominant vegetation with mats extending waterward from the shoreline. Other emergent vegetative species observed at the waterline included Mexican primrosewillow, bulltongue arrowhead (*Sagittaria lancifolia*), southern cattail (*Typha domingensis*), flatsedges (*Cyperus* spp.), umbrellasedge (*Fuirena* sp.), knotted spikerush (*Eleocharis interstincta*), and marsh pennywort (*Hydrocotyle umbellata*). These surface water features aid in stormwater detention/retention and flood management. The overall wildlife habitat quality of these stormwater ponds is moderate to low due to their location within the intersections of major roadways. Potential wood stork foraging habitat quality is low due to the minimal littoral area available at these features that would contribute to suitable foraging habitat for this species. Wildlife observed at these locations include great egret, cattle egret, green heron (*Butorides virescens*), double-crested cormorant (*Phalacrocorax auritus*), muscovy duck (*Cairina moschata*), and mottled duck (*Anas fulvigula*). No threatened or endangered species were observed during the survey.

**Stormwater Detention/Retention Features: SF 04, 05, 07, 08, 09, 11, 14, 15, 18, 19, 20, 26**

**FLUCFCS – 530 (Reservoirs)**

**USFWS – PUBHx (Palustrine, Unconsolidated Bottom, Permanently Flooded, Excavated)**

Stormwater features 04, 05, 07, 08, 09, 11, 14, 15, 18, 19, 20, and 26 are excavated water detention/retention features (ponds) within the project limits along SR 826.

These features were either temporarily inundated holding less than 8" of stormwater or dry. The vegetative ground cover either within or around the features are regularly mowed. Planted everglades palm (*Acoelorrhaphe wrightii*) and Florida royal palm (*Roystonea regia* sp.) were present as part of landscaping. Dominant vegetative species observed within these areas include torpedograss, smallfruit primrosewillow (*Ludwigia microcarpa*), marsh pennywort and slatsedge (*Cyperus* sp.). Other species include creeping primrosewillow (*Ludwigia repens*), shrubby false buttonweed (*Spermacoce verticillate*), starrush whitetop (*Rhynchospora colorata*), mexican primrosewillow, yellowseed false pimpernel (*Lindernia dubia*), Canada spikerush (*Eleocharis geniculata*), creeping waterhyssop (*Bacopa monnieri*), swamp hornpod (*Mitreola sessilifolia*), stiffhair waxweed (*Cuphea strigulosa*), early whitetop fleabane (*Erigeron vernus*), dwarf umbrellasedge, torpedograss, starrush whitetop (*Rhynchospora colorata*), stiffhair waxweed (*Cuphea strigulosa*), false daisy (*Eclipta alba*), and common dayflower (*Commelina diffusa*). These stormwater features aid in stormwater detention/retention and flood management. The overall wildlife habitat quality of these stormwater features is low due to their consistent disturbance and location within close proximity to major roadways. Potential wood stork foraging habitat quality is low due to lack of suitable foraging habitat for this species. Wildlife observed at these locations consisted of great egrets, cattle egrets, green heron, common gallinules (*Gallinula galeata*), double-crested cormorants, and mottled ducks. No threatened or endangered species were observed during the survey.

**Stormwater Drainage Conveyance Features: SF 01, 02, 03, 10, 12, 13 16, 17, 22**  
**FLUCFCS – 510 (Streams and Waterways)**

**USFWS – PEM1A/h (Palustrine, Emergent, Persistent, Temporarily Flooded / Seasonally Flooded, Diked/Impounded)**

Stormwater features 01, 02, 03, 10, 12, 13, 16, 17, and 22 are engineered storm water drainage conveyance systems located adjacent to SR 826. These features are regularly mowed (small portions irregularly mowed due to wet conditions) with herbaceous communities in which torpedograss is dominant. Other vegetative species observed within these features include Florida royal palm, senegal date palm, false daisy, slatsedge, creeping oxeye, everglades palm (*Acoelorrhaphe wrightii*), Washington fan palm, southern cattail (*Typha domingensis*), knotted spikerush, peruvian primrosewillow (*Ludwigia peruviana*), Mexican primrosewillow, umbrellasedge, capeweed (*Phyla nodiflora*), alligatorweed

(*Alternanthera philoxeroides*), slatsedge, virginia buttonweed (*Diodia virginiana*), bulltongue arrowhead, shrubby false buttonweed, creeping waterhyssop, smallfruit primrosewillow, bulltongue arrowhead, marshpennywort, spadeleaf (*Centella asiatica*), stiffhair waxweed (*Cuphea strigulosa*), and starrush whitetop (*Rhynchospora colorata*). Cattail, knotted spikerush, and mexican primrosewillow are present in some areas exhibiting more hydric substrate conditions. Florida Exotic Pest Plant Council's (FLEPPC) category I and II species areal coverage ranged from 25%-50%. Substrates generally consisted of a mosaic of sand and various size limerock fragments sometimes with a thin veneer of mucky soil. The hydrologic regimes appear to be driven primarily by runoff from adjacent impervious surfaces and to a lesser extent by seasonal high water table. Inundation was present within all features ranging from 1"-8" in depth. These stormwater features aid in stormwater conveyance and water detention/retention. The overall wildlife habitat quality of these stormwater drainage conveyance and retention/detention features is low due to their location adjacent to high volume roadways. Potential wood stork foraging habitat quality of this feature is low due the short hydroperiod. Wildlife species observed within these features include northern mockingbird (*Mimus polyglottos*), softshell turtle (*Trionyx ferox*), largemouth bass (*Micropterus salmoides*), peacock bass, grass carp (*Ctenopharyngodon idella*), green iguana, collared dove (*Streptopelia decaocto*), and green heron. No threatened or endangered species were observed during the survey.

#### 5.4 Wetland and Surface Water Impacts

No viable vegetated wetland resources exist within the project corridor. The proposed surface water feature impact locations are identified on aerial photographs (**Figure 5-1**). No surface water impacts will result from the No Build 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 within 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 SR 826 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 5-2** below provides a summary of proposed impacts to individual surface water

features within the project study area per Build Alternative. 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 right-of-way).

**Table 5 - 2: Wetland and Surface Water Impacts**

	Surface Waters	Stormwater Drainage Features	Total
<b>Alt 1</b>	289,569.02	92,895.18	382,464.20 sq ft / 8.78 acres
<b>Alt 2</b>	295,569.78	95,692.15	391,261.93 sq ft / 8.98 acres
<b>Alt 3</b>	295,569.78	89,489.00	385,058.78 sq ft / 8.84 acres

### 5.5 Avoidance and Minimization

Avoidance and minimization of impacts were demonstrated through utilization of the existing, previously disturbed right-of-way for the majority of the study area. Additionally, the potential for any incidental surface water feature impacts will be minimized to greatest extent practicable during the project's design and permitting phase, and BMPs will be implemented during construction and operation of the project in accordance with FDOT's Standard Specifications for Road and Bridge Construction (FDOT 2017). Please see [Section 7.2](#) of this document for the wetlands finding.

### 5.6 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 (FDOT 2017) includes a statement from the NMFS that impacts to EFH are not anticipated to occur as a result of this project.

A meeting with the SFWMD right-of-way department was conducted on December 7, 2018 to discuss the proposed improvements within the rights-of-way of the C-100A, C-2, and C-4 Canals. A summary of the topics discussed is included in [Appendix H](#).

A meeting with the Miami-Dade County DRER was conducted on January 11, 2019 to discuss proposed impacts to the North Line and Coral Gables Canals and the need for a Class III right-of-way permit for each of these waterways. A summary of the topics discussed is included in [Appendix H](#).

A meeting with the USACE Section 404 and SFWMD environmental resource regulatory staff occurred on July 25, 2019 to initiate early coordination with the SFWMD Surface Water Management and Natural Resources Departments to receive preliminary feedback on the proposed viable build alternatives developed as part of the PD&E Study.

The project was introduced by the PD&E Consultant Project Manager, Ryan Soils-Rios. Ryan explained the purpose and need of the project (improving the highway and interchanges capacity, operations, and safety) and how it ties in to the previously approved and/or constructed Express Lanes projects throughout the County. He mentioned that the project extends approximately seven miles along SR 826 from US-1 to SR 836 and that the project includes ten interchanges, which eight of them provide connection to major arterial/collector facilities (roadways). The other two are major system-to-system interchanges with SR 874 and SR 836.

The remainder of the meeting focused on a discussion of the existing and proposed conceptual drainage plan and the environmental impacts. A summary of the topics discussed is included in [Appendix H](#).

Refer to [Section 6.0](#), Anticipated Permits, of this document for additional agency coordination details.

## 6.0 ANTICIPATED PERMITS

A review of existing permits was conducted to obtain background information for the project corridor. A list of these permits is provided below:

- SFWMD ERP 13-01782-P (SR 826 / SW 24<sup>th</sup> Street interchange improvements)
- SFWMD ERP 13-02686-P (SR 826 from SR 874 to north of SW 33<sup>rd</sup> Street - Section 2)
- SFWMD 13-02339-P (SR 826 / SW 8<sup>th</sup> Street interchange improvements)
- SFWMD ERP 13-04284-P (SR 826 / SR 836 interchange improvements)
- SFWMD ERP 13-00791-S (SR 826 from US-1 to north of SW 72<sup>nd</sup> Street)

Both the USACE and SFWMD regulate impacts to wetlands and surface waters within the project study area. Other resource agencies, including the NMFS, USEPA, and FWS, and FWC, review and comment on wetland permit applications. In addition, the FDEP regulates stormwater discharges from construction sites and the DRER regulates county canal rights-of-way. The complexity of the permitting process will depend greatly on the degree of the impact to jurisdictional areas. The following permits are anticipated to be required for this project:

<b><u>Permit</u></b>	<b><u>Issuing Agency</u></b>
Section 404 Wetland Dredge and Fill Permit	USACE
Environmental Resource Permit (ERP)	SFWMD
Right-of-Way Occupancy Permits (MOD)	SFWMD
Water Use Permits (for construction dewatering)	SFWMD
National Pollutant Discharge Elimination System (NPDES)	FDEP
Miami-Dade County Class III Right-of-Way Permits	DRER

The USACE requires an Individual Section 404 Dredge and Fill Permit if it is determined that more than ½-acre of wetlands/surface waters will be impacted. An individual permit will require compliance with the 404(b)(1) guidelines, including verification that all impacts have first been eliminated to the greatest extent practicable, that unavoidable impacts have been reduced to the greatest extent practicable, and lastly that unavoidable impacts have been mitigated. A Section 404 Dredge and Fill Permit will be required from the USACE for this project.

The SFWMD requires an ERP when construction of any project results in the modification or creation of a water management system or results in impacts to wetlands or waters of the state. Although ERPs exist for portions of the corridor, it is anticipated that a new Individual ERP will be required for this entire project. It is also anticipated that a Right-of-Way Occupancy Permit for work within the SFWMD's right-of-way of the C-100A, C-2, and C-4 canals will be required per coordination with the districts right-of-way department. A separate permit (modification) will be required for each waterway. A Water Use Permit for construction dewatering may also be required from the SFWMD. A need for this permit will be determined during the final design phase of the project.

Under the FDEP's delegated authority to administer the NPDES program, construction sites that will result in greater than one acre of disturbance must file for and obtain either coverage under an appropriate generic permit or an individual permit for point source discharges of stormwater to waters of the United States. 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 discusses good engineering practices (i.e., BMPs) that will be used to reduce the pollutants. This permit will be required for the implementation of any of the viable Build Alternatives.

A Class III Right-of-Way permit will be required from the Miami-Dade County DRER for work within the Coral Gables and North Line canal rights-of-way. Per coordination with Miami-Dade County DRER Water Control, a separate Class III application is required for each bridge crossing as well as for each culverted canal section.

## 7.0 CONCLUSIONS

### 7.1 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 (Protected Species and Habitat) of the FDOT PD&E Manual. The Build Alternatives will not result in unavoidable impacts to habitats potentially used by federally listed and state listed species. **Table 7-1** 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. The Build Alternatives will also not adversely affect any federally designated Critical Habitat. However, it was determined that state-designated Critical Habitat exists for the West Indian manatee (*Trichechus manatus*) within the Coral Gables, C-4 (Tamiami Canal), North Line, and Loop Canal.

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.

**Table 7 - 1: Summary of Listed Species and Effect Determinations**

Common Name	Scientific Name	Federal Status	State Status	Occurrence Potential	Effect Determination
<b>Mammals</b>					
Florida Bonneted Bat	<i>Eumops floridanus</i>	E	FE	Low	May affect, not likely to adversely affect
West Indian Manatee <sup>(1)</sup>	<i>Trichechus manatus</i>	T	FT	High	May affect, not likely to adversely affect
<b>Reptiles</b>					
American Crocodile	<i>Crocodylus acutus</i>	T	FT	Low	No effect
Eastern Indigo Snake	<i>Drymarchon corais couperi</i>	T	FT	Low	No effect
<b>Birds</b>					
Bald Eagle <sup>(2)</sup>	<i>Haliaeetus leucocephalus</i>	NL	NL	Moderate	N/A

Osprey <sup>(2)</sup>	<i>Pandion haliaetus</i>	NL	NL	High	N/A
Everglade Snail Kite	<i>Rostrhamus sociabilis plumbeus</i>	E	FE	Low	No effect
Wood Stork	<i>Mycteria americana</i>	T	FT	Moderate	May affect, not likely to adversely affect
Little Blue Heron	<i>Egretta caerulea</i>	NL	ST	Moderate	No effect anticipated
Reddish Egret	<i>Egretta rufescens</i>	NL	ST	Low	No effect anticipated
Roseate Spoonbill	<i>Platalea ajaja</i>	NL	ST	Low	No effect anticipated
Southeastern American Kestrel	<i>(Falco sparverius paulus)</i>	NL	ST	High	No effect anticipated
<b>Plants</b>					
West Indian mahogany	<i>Swietenia mahagoni</i>	NL	T	High	No effect (planted as part of landscaping along roadway)
Florida royal palm	<i>Roystonea regia</i>	NL	E	High	No effect (planted as part of landscaping along roadway)
Simpson's stopper	<i>Myrcianthes fragrans</i>	NL	T	High	No effect (planted as part of landscaping along roadway)
Carter's small-flowered Flax	<i>Linum carteri carteri</i>	E	FE	Low	No effect
Florida brickell-bush	<i>Brickellia mosieri</i>	E	FE	Low	No effect

Federal Status: E = Endangered, T = Threatened, NL = Not Listed

State Status: FE = Federally-designated endangered, FT = Federally-designated threatened, NL = Not Listed, ST = State threatened.

<sup>1</sup> The West Indian manatee, including the Florida manatee subspecies, is also federally-protected by the *Marine Mammal Protection Act*.

<sup>2</sup> The bald eagle and the osprey are not listed by the FWS or FWC but still federally-protected by the *Bald and Golden Eagle Protection Act* and the *Migratory Bird Treaty Act*.

## 7.2 Wetlands Finding

The Build Alternatives were evaluated for impacts to wetlands and surface waters in accordance with Executive Order (EO) 11990 and Part 2, Chapter 9 (Wetlands and Other Surface Waters) of the FDOT PD&E Manual. No impacts to vegetated

wetland resources will occur as a result of the viable Build Alternatives. However, based on the location of the existing SR 826 roadway network 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. 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.

### 7.3 Implementation Measures

Based on the field and literature reviews outlined in this report, federally listed or statelisted 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 measures:

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

### 7.4 Commitments

Based on the field and literature reviews outlined in this report, federally listed or statelisted 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:

- Prior to commencing construction activities, the FDOT is committed to re-surveying the project corridor for features that could serve as potential roosting habitat and signs of the Florida bonneted bat. If any signs of the Florida bonneted bat are observed, the FDOT is committed to reinitiating consultation with the FWS to determine the appropriate course of action.
- During the construction phase of this project, the FDOT will adhere to the most recent version of the FWS' *Standard Manatee Conditions for In-Water Work* ([Appendix E](#)) to minimize the potential for adverse effects.

- 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* ([Appendix F](#)) to minimize the potential for adverse effects.

## 8.0 REFERENCES

Aerial photographs of the project area at 1 inch = 100 feet, 1 inch = 300 feet, and 1 inch = 1000 feet scales (2019).

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Florida Administrative Code, Chapter 62-340, Delineation of the Landward Extent of Wetlands and Surface Waters.

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Florida Department of Transportation, Project Development and Environment Manual, Part 2, Chapter 11 – Water Quality (January 14, 2019).

Florida Department of Transportation, Project Development and Environment Manual, Part 2, Chapter 13 – Floodplains (January 14, 2019).

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- U.S. Department of Agriculture, Natural Resources Conservation Service, Interactive Web Soil Survey of the project area (2018).
- U.S. Department of Transportation Order 5650.2, "Floodplain Management and Protection" (April 23, 1979).
- U.S. Department of Transportation Order 5660.1A, Preservation of the Nation's Wetlands (August 24, 1978).
- US Fish and Wildlife Service (FWS). 2015. Florida Nesting Colonies and Core Foraging Areas Active 2006-2015 Map.
- U.S. Geological Survey, 7.5-Minute Series Topographic Quadrangle Maps (2012).

# **Appendix A**

*Agency Correspondence*

**Recommended Avoidance, Minimization, and Mitigation Opportunities:**

The National Park Service has reviewed the Efficient Transportation Decision Making (ETDM) project # 14308 for State Road 826/Palmetto Expressway Express Lanes and offers the following comments:

Tropical Park is a Land and Water Conservation Fund site that is adjacent to SR 826. We understand that Concepts 3 and 4 will have the express lanes at-grade, with bridges only over SR 874 and SR 836 (flyover to/from the east), Concept 5 has planned to have two elevated express lanes (on bridges) between SR 874 and SR 836. Temporary access impacts and/or modified access to as well as enjoyment of amenities within the area may be affected as a result of the project, particularly during project construction. For these reasons, substantial involvement regarding this recreation area is anticipated. Impacts to Tropical Park were preliminary estimated to be 0.4 acres.

Further information is needed to determine the degree of effect and mitigation. We recommend that an EA or EIS and a 4(f) evaluation are prepared to address the potential impacts and mitigation.

Any right of way needed from Tropical, in whole or in part, that converts the use of a portion of the park to other than public outdoor recreation, would trigger a Section 6(f)(3) conversion. (a Section 6(f)(3) conversion of use would be triggered.) A conversion of use will include the Florida Department of Transportation providing replacement property that not only is equal or greater in fair market value to the converted site, but also, is of reasonable equivalent usefulness. Also, all NEPA requirements must be satisfactorily completed as well as other requirements as outlined in the LWCF Act (36 CFR 59.3)

If a conversion should occur, the Florida Department of Environmental Protection, Division of State Lands, 3900 Commonwealth Blvd, Tallahassee, FL 32399-3000, should be contacted for early coordination. The contact person is Linda Reeves, Operations Management Consultant Manager--linda.reeves@dep.state.fl.us--(850) 245-2501.

Please keep us informed as the project progresses through the PD&E phase and if the proposed project changes please contact Anita Barnett at National Park Service, 100 Alabama Street, 1924 Bldg., Atlanta Georgia, 30303, 404-507-5706; Anita\_Barnett@nps.gov . Thank you for the opportunity to review and provide comments.

**Degree of Effect:** 2 *Minimal* assigned 12/21/2016 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. However, no SFWMD recreation areas are in the affected area.

**Comments on Effects to Resources:**

Effects are anticipated to be minimal. See comments on wetlands.

**Recommended Avoidance, Minimization, and Mitigation Opportunities:**

**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 and Surface Waters**

**Project Effects**

**Coordinator Summary Degree of Effect:** 3 *Moderate* assigned 03/30/2017 by FDOT District 6

**Comments:**

The National Wetlands Inventory database identified 18.47 acres (3.63%) of lacustrine, palustrine, and riverine wetlands within the 100-foot project buffer; these wetlands are associated with the ponds (lacustrine and palustrine) and canals (riverine) in the area. These wetlands additionally do not appear to contain estuarine habitats; therefore, the wetlands are not anticipated to serve as Essential Fish Habitat.

FDEP and USFWS commented that wetlands may occur within and near the project site and requested that FDOT provide mitigation that fully compensates for the loss of these important resources if impacts are unavoidable. SFWMD and USACE indicated that there may be wetland vegetation within the various lakes, ponds, and canals in the area. USACE added that ground surveys should be performed to more clearly identify the existing resources within the proposed discharge locations and potential project impacts; effects could include direct fill, potential hydrology changes, removal of vegetation, etc. USACE noted that impacts could be offset through the establishment of roadside swales at alternate locations within the project limits. SFWMD stated that as part of the Environmental Resource Permit (ERP) application, impacts to wetlands and surface waters must meet the criteria in Section 10 of ERP Applicant's Handbook Volume I, including Elimination and Reduction as well as mitigation. SFWMD further noted that if work or structures are proposed within waters accessible to manatees, grates or other methods to restrict access will be necessary. USACE commented that the proposed project would likely require evaluation under an Individual Permit or potentially the SAJ-92. USEPA stated that the project should comply with the established National Pollutant Discharge Elimination System (NPDES) program and ERP program. Due to agency concerns regarding potential impacts to identified wetlands, a Summary Degree of Effect of Moderate has been assigned to the Wetlands issue.

During the Project Development phase, potential wetland impacts will be assessed through a Natural Resources Evaluation (conducted in accordance with Part 2, Chapter 18 of the FDOT PD&E Manual). All necessary measures will be taken to avoid and/or minimize impacts to wetlands during project design. Should avoidance and/or minimization not be practicable, a Mitigation Plan will be prepared. Best management practices will be utilized during construction and compensatory mitigation will be provided (i.e., the purchase of mitigation bank credits from a federally-approved mitigation bank that has appropriate habitat replacement type) in the event that any adverse wetland impacts are identified. In addition, all applicable permits (including a SFWMD ERP and USACE Individual or SAJ-92 Permit) will be obtained or modified in accordance with federal, state, and local laws and regulations.

**Degree of Effect:** 3 *Moderate* assigned 01/29/2017 by Kim Gates, US Environmental Protection Agency

**Coordination Document:** PD&E Support Document As Per PD&E Manual

**Coordination Document Comments:**

Water Quality Impact Evaluation (PD&E Manual, Part 2, Chapter 20), and Wetlands Evaluation Report (PD&E Manual, Part 2, Chapter 18).

**Direct Effects**

**Identified Resources and Level of Importance:**

Wetlands and other surface waters provide important and beneficial functions, including providing essential fish and wildlife habitat, buffering water quality impacts, storing floodwaters, and maintaining surface water flow during dry periods. However, stormwater runoff from the built environment is a principal contributor to water quality impairment of surface waterbodies nationwide. [Source: Urban Stormwater Management in the United States, National Research Council, 2008, [https://www3.epa.gov/npdes/pubs/nrc\\_stormwaterreport.pdf](https://www3.epa.gov/npdes/pubs/nrc_stormwaterreport.pdf)] The most common pollutants in highway runoff are heavy metals, inorganic salts, volatile organics, petroleum hydrocarbons, bacteria, pesticides/herbicides, and suspended solids that accumulate on the road surface as a result of regular highway operation and maintenance activities.

Various federal, state, and local laws have been enacted to protect surface water resources. The Clean Water Act (CWA) established the basic structure for regulating discharges of pollutants into the waters of the United States (which include wetlands) and provides statutory authority for various regulatory programs. CWA Section 402 requires permitting of all construction sites on an acre or greater of land as well as municipal, industrial and commercial facilities that discharge wastewater or stormwater directly from a point source into a surface water of the United States. These National Pollutant Discharge Elimination System (NPDES) permits are written to ensure the receiving waters will achieve specified Water Quality Standards. The USEPA has delegated the NPDES program to the State of Florida. Section 404 of the CWA established the permitting program for discharges of dredged and fill material into waters of the United States. This program is administered by the U.S. Army Corps of Engineers, subject to and using the USEPA's environmental guidance.

In addition to the delegated NPDES program, the State administers its own Environmental Resource Permitting (ERP) program for activities involving the alteration of surface water flows (<http://www.dep.state.fl.us/WATER/wetlands/erp/index.htm>). The ERP program is implemented by the Florida Department of Environmental Protection (FDEP) and the five Water Management Districts.

**Comments on Effects to Resources:**

- Tamiami Canal (C-4)
- Two freshwater ponds at the SR 826/Palmetto Expressway and SW 8th Street/Tamiami Trail interchange
- Coral Gables Canal (C-3)
- Two freshwater ponds at the SR 826/Palmetto Expressway and SW 24th Street/Coral Way interchange
- Tropical Lake
- Lake (Reach Code #03090206049850) located west of confluence between SR 874/Don Shula Expressway and SR 826/Palmetto Expressway
- Lake (Reach Code #03090206049851) located east of confluence between SR 874/Don Shula Expressway and SR 826/Palmetto Expressway
- Snapper Creek Canal (C-2)
- Freshwater pond (Reach Code #03090206049941) north of confluence between SR 826/Palmetto Expressway and US 1/Pinecrest Parkway

**Recommended Avoidance, Minimization, and Mitigation Opportunities:**

In general, the USEPA encourages avoidance, minimization, and mitigation of impacts on surface and ground waters in the project vicinity to the extent practicable. Stormwater runoff and its potential impact on water quality should be properly evaluated and addressed during the PD&E phase. Appropriate stormwater treatment systems and best management practices must be employed during construction, and throughout the operational life of the facility, to protect surface waters and prevent impacts to groundwater. To this end, the USEPA also recommends evaluating Low-Impact Development (LID) stormwater management practices during PD&E. Various resources on LID practices are available, including:

- NCHRP Report 565: Evaluation of Best Management Practices for Highway Runoff Control (2006), <http://www.trb.org/Main/Blurbs/158397.aspx>, which includes three additional documents: User's Guide for BMP/LID Selection (Guidelines Manual), Appendices to the User's Guide for BMP/LID Selection, and Low-Impact Development Design Manual for Highway Runoff Control (LID Design Manual);
- SFWMD's Best Management Practices for South Florida Urban Stormwater Management Systems, April 2002, [http://www.sfwmd.gov/portal/page/portal/xrepository/sfwmd\\_repository\\_pdf/bmp\\_manual.pdf](http://www.sfwmd.gov/portal/page/portal/xrepository/sfwmd_repository_pdf/bmp_manual.pdf); and
- the USEPA's Urban Runoff Information Resources web page, <https://www.epa.gov/polluted-runoff-nonpoint-source-pollution/urban-runoff-additional-resources>.

**CLC Recommendations:**

**Indirect Effects**

**Identified Resources and Level of Importance:**

**Comments on Effects to Resources:**

**Recommended Avoidance, Minimization, and Mitigation Opportunities:**

**Degree of Effect:** 2 *Minimal* assigned 01/05/2017 by Suzanne E. Ray, FL Department of Environmental Protection

**Coordination Document:** PD&E Support Document As Per PD&E Manual

**Direct Effects**

**Identified Resources and Level of Importance:**

Wetlands may occur within and near the Project site. We recommend that these valuable resources be avoided to the greatest extent practicable.

**Comments on Effects to Resources:**

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:**

**CLC Recommendations:**

### Indirect Effects

#### Identified Resources and Level of Importance:

#### Comments on Effects to Resources:

#### Recommended Avoidance, Minimization, and Mitigation Opportunities:

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**Degree of Effect:** 2 *Minimal* assigned 12/21/2016 by Mindy Parrott, South Florida Water Management District

**Coordination Document:** Permit Required

#### Coordination Document Comments:

See comments under water quantity and quality.

### Direct Effects

#### Identified Resources and Level of Importance:

There may be wetland vegetation within the various existing lakes and canals. Tidally influenced canals may support mangroves.

#### Comments on Effects to Resources:

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.

If work or structures are proposed within waters accessible to manatees, grates or other methods to restrict access will be necessary. Additional criteria will apply.

#### Recommended Avoidance, Minimization, and Mitigation Opportunities:

If wetland impacts are proposed, a pre-application meeting is recommended to discuss elimination and reduction and potential mitigation plans, as well as the requirements for impacts to surface waters.

#### CLC Recommendations:

### Indirect Effects

#### Identified Resources and Level of Importance:

#### Comments on Effects to Resources:

#### Recommended Avoidance, Minimization, and Mitigation Opportunities:

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**Degree of Effect:** 2 *Minimal* assigned 12/16/2016 by Tarrie L Ostrofsky, US Army Corps of Engineers

**Coordination Document:** Permit Required

#### Coordination Document Comments:

The proposed project would likely require evaluation under an Individual Permit, or potentially the SAJ-92.

### Direct Effects

#### Identified Resources and Level of Importance:

According to the information provided, the National Wetlands Inventory database identified 18.47 acres (3.63%) of lacustrine, palustrine, and riverine wetlands within the 100-foot project buffer. The information also includes that the wetlands are associated with the ponds and canals within the area. Also, the proposed project corridor lies within the Miami urbanized area. Given the above preliminary information, and the 100-foot buffer evaluated, it is possible that the existing ponds may account for quite a bit of the NWI identified wetlands acreage. Until ground surveys are performed to more clearly identify the existing resources within the proposed discharge locations, as well as the overall project limits, it is anticipated that the effects on resources would be minimal, depending on the location of the wetlands and the impacts proposed, and due to the existing infrastructure and surrounding development which would affect the quality of the existing resources.

### **Comments on Effects to Resources:**

According to review of the information provided, the proposed project is located along an existing roadway and is surrounded by development. This would affect the quality of the resources located adjacent to this infrastructure, resulting in lower quality resources than wetlands which are located further away from similar features. The effects on the resources, if direct impacts are proposed, would be direct fill, potential hydrology changes, removal of vegetation, etc. If resources include roadside swales, it is possible that impacts to these features would be offset through the establishment of roadside swales at alternate locations within the project limits.

### **Recommended Avoidance, Minimization, and Mitigation Opportunities:**

Avoidance and minimization measures that should be evaluated may include evaluation of transit widths, minimal right of way maintenance widths, placement of stormwater management facilities in locations outside of waters of the United States, use of best management practices for construction to ensure minimal impacts to resources, minimal vegetation removal, replacement of removed vegetation to minimize erosion and to minimize the potential of warming of waters, etc. If direct impacts to resources cannot be completely avoided, mitigation should be evaluated. A review of the RIBITS database indicates that there is a federally-approved mitigation bank (FP&L Everglades Phase II) and in-lieu fee program (ILF-ENP-Hole-in-the-Donut) with service areas which encompass the proposed project site. The FDOT should first evaluate the use of the mitigation bank and second the in-lieu fee program as options for mitigation.

### **CLC Recommendations:**

#### **Indirect Effects**

#### **Identified Resources and Level of Importance:**

According to the information provided, the National Wetlands Inventory database identified 18.47 acres (3.63%) of lacustrine, palustrine, and riverine wetlands within the 100-foot project buffer. The information also includes that the wetlands are associated with the ponds and canals within the area. Also, the proposed project corridor lies within the Miami urbanized area. Given the above preliminary information, and the 100-foot buffer evaluated, it is possible that the existing ponds may account for quite a bit of the NWI identified wetlands acreage. Until ground surveys are performed to more clearly identify the existing resources within the project limits, and extending outside of the limits where indirect effects may occur, it is anticipated that the indirect effects on resources would be minimal, depending on the locations and extent of the wetlands, the proposed impacts, and due to the existing infrastructure and surrounding development which likely affect the quality of the existing resources within the 100-foot project buffer.

### **Comments on Effects to Resources:**

According to review of the information provided, the proposed project is located along an existing roadway and is surrounded by development. This would affect the quality of the resources located adjacent to this infrastructure, resulting in lower quality resources than wetlands which are located further away from similar features. The effects on the resources, if indirect impacts are proposed, would be potential hydrology changes, warming of downstream waters due to removal of vegetation, isolation of offsite wetlands, etc.

### **Recommended Avoidance, Minimization, and Mitigation Opportunities:**

Avoidance and minimization measures that should be evaluated may include evaluation of transit widths, minimal right of way maintenance widths, placement of stormwater management facilities in locations outside of waters of the United States, use of best management practices for construction to ensure minimal impacts to resources outside of the direct fill locations, minimal vegetation removal, replacement of removed vegetation to minimize erosion and to minimize the potential of warming of downstream waters, placement of pipes beneath the roadway to provide for hydrology exchange between wetlands, if present on opposite sides of the roadway, etc. If indirect impacts to resources cannot be completely avoided, mitigation should be evaluated. A review of the RIBITS database indicates that there is a federally-approved mitigation bank (FP&L Everglades Phase II) and in-lieu fee program (ILF-ENP-Hole-in-the-Donut) with service areas which encompass the proposed project site. The FDOT should first evaluate the use of the mitigation bank and second the in-lieu fee program as options for mitigation.

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**Degree of Effect:** 2 *Minimal* assigned 12/07/2016 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. Wetlands may occur within and near the Project site. 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:**

**CLC Recommendations:**

**Indirect Effects**

**Identified Resources and Level of Importance:**

**Comments on Effects to Resources:**

**Recommended Avoidance, Minimization, and Mitigation Opportunities:**

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**Degree of Effect:** 2 *Minimal* assigned 12/05/2016 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 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.

**CLC Recommendations:**

**Indirect Effects**

**Identified Resources and Level of Importance:**

## Comments on Effects to Resources:

## Recommended Avoidance, Minimization, and Mitigation Opportunities:

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## Water Quality and Quantity

### Project Effects

**Coordinator Summary Degree of Effect:** 4 *Substantial* assigned 03/30/2017 by FDOT District 6

#### Comments:

The project crosses four SFWMD maintained canals [Tamiami Canal/C-4, Coral Gables Canal/C-3, Snapper Creek Canal/C-2, and Cutler Drain Canal/C-100A]. The project is also located within the watersheds of four Verified Impaired Florida Waters (associated with the four canals): Tamiami Canal/C-4 [(WBID 3286) - which is impaired for mercury in fish tissue], Coral Gables Canal/C-3 [(WBID 3292) - which is impaired for fecal coliform], Snapper Creek Canal/C-2 [(WBID 3293) - which is impaired for fecal coliform], and C-100 [(WBID 3295) - which is impaired for fecal coliform and nutrients (historic chlorophyll-A)]. Also present within the 100-foot project buffer are the Biscayne Aquifer (a sole source aquifer) and a recharge area of the Floridan Aquifer.

SFWMD stated that the project must be designed to meet the stormwater water quality and quantity criteria of the Environmental Resource Permit (ERP) Applicant's Handbook Volumes I & II, including additional criteria for Impaired Waters (Appendix D of Volume II). SFWMD added that six ERPs in the area could be modified as a result of the project. USEPA indicated that the greatest concern regarding water quality maintenance of Miami-Dade County's surface waters continues to be pollutant discharges in the watershed and nonpoint source discharges of stormwater runoff in the canal systems; contaminated runoff from the project could impact surface water bodies along the corridor. USEPA noted that FDOT District 6 is required to reduce the discharge of pollutants in stormwater to the maximum extent practicable as a co-permittee on Miami County's MS4 permit. Due to the potential for additional stormwater treatment requirements pertaining to discharge into impaired waters, a Summary Degree of Effect of Substantial has been assigned to the Water Quality and Quantity issue.

The proposed project will be designed to meet state water quality and quantity requirements, and best management practices will be utilized during project activities. Further, the proposed stormwater system will be developed to meet the design and performance criteria established for the treatment and attenuation of discharges to impaired waters under Rule 62-330, F.A.C. and the SFWMD ERP Applicant's Handbook Volumes I and II. During the Project Development phase, FDOT District Six will coordinate with the appropriate agencies concerning the necessary studies, documentation, and commitments needed to adequately address all identified resources. A Water Quality Impact Evaluation will be conducted in accordance with Part 2, Chapter 20 of the FDOT PD&E Manual. FDOT District Six will additionally comply with the Sole Source Aquifer Memorandum of Understanding given potential impacts to the Biscayne Aquifer. All necessary permits (including ERP) will be obtained in accordance with federal, state, and local laws and regulations during subsequent phases. Best management practices will be utilized during construction.

**Degree of Effect:** 4 *Substantial* assigned 01/29/2017 by Kim Gates, US Environmental Protection Agency

**Coordination Document:** PD&E Support Document As Per PD&E Manual

#### Coordination Document Comments:

Water Quality Impact Evaluation (PD&E Manual, Part 2, Chapter 20)

### Direct Effects

#### Identified Resources and Level of Importance:

"Untreated stormwater runoff is now considered the state's leading source of pollution"

(<http://www.broward.org/WATERMATTERS/Pages/waterquality.aspx>). Stormwater from impervious surfaces in urban environments, including roadways, conveys contaminants to surface water bodies, wetlands, and groundwater. The most common pollutants in highway runoff are heavy metals, inorganic salts, volatile organics, petroleum hydrocarbons, bacteria, pesticides/herbicides, and suspended solids that accumulate on the road surface as a result of regular highway operation and maintenance activities.

The principal law governing pollution of the nation's surface waters is the Federal Water Pollution Control Act, or Clean Water Act. Prior to 1987, surface water protection programs were primarily directed at point source pollution (i.e., wastes discharged from discrete sources, such as pipes from manufacturing facilities and wastewater treatment plants). Recognizing the need to address nonpoint source pollution, including stormwater, the U.S. Congress revised the Clean Water Act in 1987. The USEPA responded to

this legislation by implementing the Municipal Separate Storm Sewer System (MS4) permitting program via the Phase I (1990) and Phase II (1999) stormwater regulations. The Florida Department of Environmental Protection (FDEP) has delegated authority to implement the MS4 programs.

Phase I MS4 operators are required to develop and implement comprehensive Stormwater Management Programs (SWMPs) that include pollution prevention measures, treatment or removal techniques, monitoring, use of legal authority, and other appropriate means to control the quality of stormwater discharged from the MS4. As a co-permittee on Miami County's MS4 permit, FDOT District 6 is required to reduce the discharge of pollutants in stormwater to the maximum extent practicable (<https://www.epa.gov/npdes/stormwater-discharges-transportation-sources#overview>). The minimum requirements that all FDOT Districts must maintain under their individual Stormwater Management Programs are outlined in the FDOT Statewide Stormwater Management Plan dated September 2012 (<http://www.fdot.gov/maintenance/FDOTStormWaterMgmtPlan2012.pdf>).

**Comments on Effects to Resources:**

"The greatest concern regarding maintaining the quality of the County's surface waters continues to be pollutant discharges in the watershed and nonpoint source discharges of stormwater runoff in the canal systems" ([http://www.miamidade.gov/mayormemo/Air\\_and\\_Water\\_Quality\\_of\\_Miami\\_-\\_Dade\\_County\\_-\\_Report.pdf](http://www.miamidade.gov/mayormemo/Air_and_Water_Quality_of_Miami_-_Dade_County_-_Report.pdf)). Contaminated runoff from the project could impact surface water bodies along the corridor, including:

- Tamiami Canal (C-4)
- Two freshwater ponds at the SR 826/Palmetto Expressway and SW 8th Street/Tamiami Trail interchange
- Coral Gables Canal (C-3)
- Two freshwater ponds at the SR 826/Palmetto Expressway and SW 24th Street/Coral Way interchange
- Tropical Lake
- Lake (Reach Code #03090206049850) located west of confluence between SR 874/Don Shula Expressway and SR 826/Palmetto Expressway
- Lake (Reach Code #03090206049851) located east of confluence between SR 874/Don Shula Expressway and SR 826/Palmetto Expressway
- Snapper Creek Canal (C-2)
- Freshwater pond(Reach Code #03090206049941) located north of confluence between SR 826/Palmetto Expressway and US 1/Pinecrest Parkway

**Recommended Avoidance, Minimization, and Mitigation Opportunities:**

In general, the USEPA encourages avoidance, minimization, and mitigation of impacts on surface and ground waters in the project vicinity to the extent practicable. Stormwater runoff and its potential impact on water quality should be properly evaluated and addressed during the PD&E phase. Appropriate stormwater treatment systems and best management practices must be employed during construction, and throughout the operational life of the facility, to protect surface waters and prevent impacts to groundwater. To this end, the USEPA also recommends evaluating Low-Impact Development (LID) stormwater management practices during PD&E. Various resources on LID practices are available, including:

- NCHRP Report 565: Evaluation of Best Management Practices for Highway Runoff Control (2006), <http://www.trb.org/Main/Blurbs/158397.aspx>, which includes three additional documents: User's Guide for BMP/LID Selection (Guidelines Manual), Appendices to the User's Guide for BMP/LID Selection, and Low-Impact Development Design Manual for Highway Runoff Control (LID Design Manual);
- SFWMD's Best Management Practices for South Florida Urban Stormwater Management Systems, April 2002, [http://www.sfwmd.gov/portal/page/portal/xrepository/sfwmd\\_repository\\_pdf/bmp\\_manual.pdf](http://www.sfwmd.gov/portal/page/portal/xrepository/sfwmd_repository_pdf/bmp_manual.pdf); and
- the USEPA's Urban Runoff Information Resources web page, <https://www.epa.gov/polluted-runoff-nonpoint-source-pollution/urban-runoff-additional-resources>.

**CLC Recommendations:**

**Indirect Effects**

**Identified Resources and Level of Importance:**

**Comments on Effects to Resources:**

**Recommended Avoidance, Minimization, and Mitigation Opportunities:**

**Degree of Effect:** 3 *Moderate* assigned 12/21/2016 by Mindy Parrott, South Florida Water Management District

**Coordination Document:** Permit Required

**Coordination Document Comments:**

Modification of one or more of the following permit Environmental Resource Permits will be required: 13-04284-P, 13-02339-P, 13-01782-P, 13-02686-P, 13-00791-S 13-02434-P. A pre-application meeting is highly recommended.

### Direct Effects

**Identified Resources and Level of Importance:**

As described in the preliminary comments, the project may include flood hazard areas and impaired waters.

**Comments on Effects to Resources:**

The project must be designed to meet the stormwater water quality and quantity criteria of the ERP Applicant's Handbook Vols. I & II, including additional criteria for Impaired Waters (Appendix D of Volume II).

**Recommended Avoidance, Minimization, and Mitigation Opportunities:**

**CLC Recommendations:**

### Indirect Effects

**Identified Resources and Level of Importance:**

**Comments on Effects to Resources:**

**Recommended Avoidance, Minimization, and Mitigation Opportunities:**

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## Floodplains

### Project Effects

**Coordinator Summary Degree of Effect:** 3 *Moderate* assigned 03/30/2017 by FDOT District 6

**Comments:**

According to the DFIRM 100-Year Floodplain Data, the 100-foot project buffer is located within 41.44 acres (8.15%) of Flood Zone AE and 105.05 acres (20.65%) of Flood Zone AH, both designated as Special Flood Hazard Areas; these flood zones are primarily located near Flagler Street, SW 8th Street, and the interchange at SR 874/Don Shula Expressway. It should be noted that the majority of the 100-foot project buffer is located within Flood Zone X (unshaded) [362.14 acres (71.20%)], which is defined as an area outside of the 0.2% annual chance floodplain. SFWMD added that six ERPs in the area could be modified as a result of the project. While the proposed improvements are not anticipated to affect flood heights or base floodplain limits, a Summary Degree of Effect of Moderate has been assigned to the Floodplains issue due to the notable amount of 100-year floodplain within the vicinity of the project.

During Project Development, a Floodplains Assessment will be conducted (in accordance with Part 2, Chapter 24 of the FDOT PD&E Manual) to avoid and/or minimize impacts. All necessary permits will be obtained in accordance with federal, state, and local laws and regulations. In addition, impacts to floodplain storage will be compensated in accordance with the SFWMD Environmental Resource Permit (ERP) Applicant's Handbook Volumes I & II.

**Degree of Effect:** 3 *Moderate* assigned 12/21/2016 by Mindy Parrott, South Florida Water Management District

**Coordination Document:** Permit Required

**Coordination Document Comments:**

Modification of one or more of the following permit Environmental Resource Permits will be required: 13-04284-P, 13-02339-P, 13-01782-P, 13-02686-P, 13-00791-S 13-02434-P. A pre-application meeting is highly recommended.

### Direct Effects

**Identified Resources and Level of Importance:**

As described in the preliminary comments, the project may include flood hazard areas and impaired waters.

**Comments on Effects to Resources:**

The project must be designed to meet the stormwater water quality and quantity criteria of the ERP Applicant's Handbook Vols. I & II, including additional criteria for Impaired Waters (Appendix D of Volume II).

**Recommended Avoidance, Minimization, and Mitigation Opportunities:**

**CLC Recommendations:**

**Indirect Effects**

**Identified Resources and Level of Importance:**

**Comments on Effects to Resources:**

**Recommended Avoidance, Minimization, and Mitigation Opportunities:**

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**Wildlife and Habitat**

**Project Effects**

**Coordinator Summary Degree of Effect:** 3 Moderate assigned 03/30/2017 by FDOT District 6

**Comments:**

The 100-foot project buffer occurs within the South Florida Ecosystem Management Area; FWS Consultation Areas for Miami-Dade Keys plants, American crocodile, and snail kite; and designated Rare and Imperiled Fish habitat for the mountain mullet (Tamiami Canal). The project area is also designated as Critical Habitat for the West Indian Manatee and falls within a Woodstork Core Foraging Area. Other wildlife and habitat features within the 100-foot project buffer include one FNAI element occurrence/threatened or endangered species (Christmas berry), one Florida Managed Area/National Park Project (Tropical Park), and one Priority Ecological Resource Conservation Area of The Nature Conservancy. A number of additional federally listed species have the potential to occur within the project vicinity.

FDACS stated that ingress and egress to the Homestead Forestry Station should not be impacted during construction since this is a place where people respond to wildfires and other natural disasters; FDOT must also ensure that heavy equipment and other vehicles can safely exit from and return to the site post construction. FWC indicated that this project has very little potential for adverse impact to fish and wildlife resources as the area is entirely urban; potential impact to Florida manatees is the only concern if any in-water construction is performed in the Coral Gables Canal/C-3 or Tamiami Canal/C-4. USFWS reported that the project is 1) located within the geographic range and in the USFWS's consultation area for the endangered Florida bonneted bat - FDOT should conduct surveys if suitable roosting habitat will be impacted; 2) located in the geographic range and adjacent to designated critical habitat of endangered Florida brickell-bush and Carter's small flower flax [public conservation lands within the project vicinity contain the designated critical habitat]- FDOT should conduct surveys to determine potential effects to suitable habitat and also develop plans to protect designated critical habitat from adverse effects to the fullest extent possible; 3) located in the geographic range of and bisects and/or runs parallel to canals which are accessible to the endangered West Indian manatee - FDOT should follow the USFWS's Standard Manatee Conditions for In-Water Work during project construction if in water work is required; and 4) located in the Core Foraging Areas (CFA) of several active nesting colonies of the endangered wood stork - any lost foraging habitat resulting from the project must be replaced (in-kind for wetland impacts) within the CFA of the affected nesting colony [wetland credits purchased from a USFWS approved mitigation bank may be acceptable] and a functional assessment must be conducted using the USFWS Wood Stork Foraging Analysis Methodology on the foraging habitat to be impacted and the foraging habitat provided as mitigation for projects that impact 5 or more acres of wood stork foraging habitat. USFWS added that the Eastern indigo snake and Federally listed plants have the potential to occur in or near the project site. USFWS recommends that FDOT prepare a Biological Assessment for the project.

While the area surrounding the project is entirely urban, a Summary Degree of Effect of Moderate has been assigned to the Wildlife and Habitat issue given the notable number of wildlife and habitat resources identified within the project vicinity and agency concerns regarding potential effects to these resources as a result of the project.

The final design of the project will avoid and/or minimize impacts to wetlands/wildlife and habitat to the greatest extent possible and appropriate mitigation will be provided for unavoidable impacts. Best management practices will also be utilized during construction activities. During the Project Development phase, a Natural Resources Evaluation will be prepared in compliance with Section 7 of the Endangered Species Act of 1973, as amended (16 USC 1531 et seq) and in accordance with Part 2, Chapter 27 of the FDOT PD&E Manual. Further, informal consultation with FDACS, FWS, USFWS, and Miami-Dade County will occur during the Project Development phase in order to determine any site specific measures required for the project.

**Degree of Effect:** **3** *Moderate* assigned 01/11/2017 by Steve Bohl, FL Department of Agriculture and Consumer Services

**Coordination Document:** To Be Determined: Further Coordination Required

#### **Direct Effects**

##### **Identified Resources and Level of Importance:**

The Homestead Forestry Station should not be impacted since this is place where people respond to wildfires and other natural disasters. Ingress and egress to this site should no be impacted during construction and ensure that post construction makes sure that heavy equipment and other vehicles cansafely exit the site and return back safely.

##### **Comments on Effects to Resources:**

The Homestead Forestry Station should not be impacted since this is place where people respond to wildfires and other natural disasters. Ingress and egress to this site should no be impacted during construction and ensure that post construction makes sure that heavy equipment and other vehicles cansafely exit the site and return back safely.

##### **Recommended Avoidance, Minimization, and Mitigation Opportunities:**

Ingress and egress to this site should no be impacted during construction and ensure that post construction makes sure that heavy equipment and other vehicles cansafely exit the site and return back safely.

#### **CLC Recommendations:**

#### **Indirect Effects**

##### **Identified Resources and Level of Importance:**

##### **Comments on Effects to Resources:**

##### **Recommended Avoidance, Minimization, and Mitigation Opportunities:**

Do not limit access to a from the Homestead Forestry Station

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**Degree of Effect:** **2** *Minimal* assigned 01/05/2017 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 #14308, Miami-Dade 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 adding express lanes to the Palmetto Expressway between US 1 and SR 836/Dolphin Expressway, a distance of approximately 5.5 miles. One alternative would add one express lane in each direction between US 1 and SR 874, and two express lanes between SR 874 and SR 836. The other alternative being studied would add one lane in each direction over the entire length of the project, and two reversible elevated express lanes between SR 874 and SR 836.

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.

##### **Comments on Effects to Resources:**

Our analysis reveals that the landcover in the assessment area is entirely urban, and that this project has very little potential for adverse impact to fish and wildlife resources. Our only concern is for the possible impact to Florida manatees from any in-water construction in the Coral Gables Canal/C-3 or Tamiami Canal/C-4.

**Recommended Avoidance, Minimization, and Mitigation Opportunities:**

Since no information was provided on any required in-water work, including seasonality, the length or duration of project work, methods of construction, and whether dredging will be utilized, it would be premature for us to recommend specific avoidance and minimization measures for manatees at this time. However, based on the information currently available, protection measures that may be needed include, but are not limited to, Standard Manatee Conditions for In-Water Work, monitoring of turbidity barriers, presence of manatee/sea turtle observers during in-water work, no in-water work between November and March, and no nighttime work. Further coordination with our agency will be necessary in order to determine specific measures for this project. For technical assistance and coordination on manatees, please contact our Imperiled Species Management Section in Tallahassee at [imperiledspecies@myfwc.com](mailto:imperiledspecies@myfwc.com) or (850) 922-4330 early in the planning process.

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](mailto:brian.barnett@MyFWC.com) to initiate the process for further overall coordination on this project.

**CLC Recommendations:**

**Indirect Effects**

**Identified Resources and Level of Importance:**

**Comments on Effects to Resources:**

**Recommended Avoidance, Minimization, and Mitigation Opportunities:**

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**Degree of Effect:** 3 Moderate assigned 12/07/2016 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 -

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.

Florida bonneted bat

The Project is located within the geographic range and in the Service's consultation area for the endangered Florida bonneted bat (*Eumops floridanus*). Additionally, numerous records of bonneted bats, some as close to the Project as 0.54 mi, have been confirmed using acoustic surveys. If suitable roosting habitat (*i.e.*, mature trees, mature trees with cavities, abandoned buildings or structures *etc.*) will be impacted by the Project, the Service recommends that surveys be conducted to determine the status the Florida bonneted bat in or near the Project footprint.

Florida brickell-bush and Carter's small-flowered flax

The Project is located in the geographic range and adjacent to designated critical habitat of endangered brickell-bush (*Brickellia mosieri*) and Carter's small flower flax (*Linum carteri carteri*). Both plants are endemic to pine rockland habitat, in which critical habitat has been designated. The Project should be evaluated for potential adverse effects it could have on suitable habitat as well as designated critical habitat. The Service recommends that surveys be conducted in the Project area for suitable habitat and also

that FDOT develop plans to protect designated critical habitat from adverse effects to the fullest extent possible.

#### West Indian Manatee

The Project is located in the geographic range of the endangered West Indian manatee (*Trichechus manatus*) and bisects and/or runs parallel to canals C-2, 3, 4, and 100A which are accessible to manatees. If in water work is required, the FDOT should agree to and follow the Service's Standard Manatee Conditions for In-Water Work during construction of the Project. This document can be found at: [https://www.fws.gov/verobeach/MammalsPDFs/2011 Standard Manatee Construction Conditions.pdf](https://www.fws.gov/verobeach/MammalsPDFs/2011%20Standard%20Manatee%20Construction%20Conditions.pdf)

#### Wood Stork

The Project corridor is located in the Core Foraging Areas (CFA)(within 18.6 miles ) of several 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/ListedSpeciesBirds.html> .

The Service believes that the Federally listed species above, the Eastern indigo snake (*Drymarchon corrales couperi*) and Federally listed plants (listed at <http://www.fws.gov/verobeach/ListedSpeciesPlants.html>) known to occur in Miami-Dade County have the potential to occur in or near the Project site. 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. Wetlands may occur within and near the Project site. 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.

According to data provided in the environmental screening tool, a large section of the Project footprint runs adjacent to valuable public conservation lands. These lands include Tropical Park, a Miami-Dade County Park that includes federally designated critical habitat for the endangered brickell-bush (*Brickellia mosieri*) and Carter's small flower flax (*Linum carteri carteri*), and a conservation area managed by the Nature Conservancy. Current populations of these plants are between 2,150 to 3,700 plants for Florida brickell-bush, and about 1,300 plants for Carter's small-flowered flax. Compared to their historical ranges, the current ranges of both plants have shrunk significantly. None of the habitat in the unit adjacent to the Project is currently occupied by either plant, however, the Service designated this area as critical habitat because the designation serves to protect suitable habitat needed to recover both species within their respective historical ranges. We request that the FDOT design the project to avoid impacts public conservation lands.

### **Recommended Avoidance, Minimization, and Mitigation Opportunities:**

#### **CLC Recommendations:**

#### **Indirect Effects**

#### **Identified Resources and Level of Importance:**

#### **Comments on Effects to Resources:**

#### **Recommended Avoidance, Minimization, and Mitigation Opportunities:**

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## Coastal and Marine

### Project Effects

**Coordinator Summary Degree of Effect:** 2 *Minimal* assigned 03/30/2017 by FDOT District 6

**Comments:**

The 100-foot project buffer falls within the Biscayne Bay Coastal Estuarine Drainage Area. In addition, 18.47 acres (3.63%) of lacustrine, palustrine, and riverine wetlands are present within the 100-foot project buffer; environmentally sensitive shoreline associated with the Coral Gables Canal/C-3 is also present within the designated buffer area. The identified wetlands do not appear to contain estuarine habitats nor are they located near marine fishery habitats; therefore, they are not anticipated to serve as Essential Fish Habitat. The project will be designed to meet state water quality and quantity requirements, and best management practices will be utilized during project activities. While no impacts to coastal and marine resources are anticipated, due to the fact that the project crosses environmentally sensitive shoreline associated with the Coral Gables Canal/C-3, a Summary Degree of Effect of Minimal has been assigned to the Coastal and Marine issue.

During the Project Development phase, potential impacts to environmentally sensitive shoreline will be assessed through a Natural Resources Evaluation (conducted in accordance with Part 2, Chapter 18 of the FDOT PD&E Manual). The proposed stormwater system will be developed to meet the design and performance criteria established for the treatment and attenuation of discharges to impaired waters under Rule 62-330, F.A.C. and the SFWMD Environmental Resource Permit Applicant's Handbook Volumes I and II. Best management practices will also be utilized during construction.

**Degree of Effect:** 2 *Minimal* assigned 12/21/2016 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. However, no SFWMD recreation areas are in the affected area.

**Comments on Effects to Resources:**

Effects are anticipated to be minimal. See comments on wetlands.

**Recommended Avoidance, Minimization, and Mitigation Opportunities:**

**CLC Recommendations:**

#### Indirect Effects

**Identified Resources and Level of Importance:**

**Comments on Effects to Resources:**

**Recommended Avoidance, Minimization, and Mitigation Opportunities:**

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**Degree of Effect:** 0 *None* assigned 12/05/2016 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 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.

**CLC Recommendations:**

**Indirect Effects**

**Identified Resources and Level of Importance:**

**Comments on Effects to Resources:**

**Recommended Avoidance, Minimization, and Mitigation Opportunities:**

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**ETAT Reviews and Coordinator Summary: Physical**

**Noise**

**Project Effects**

**Coordinator Summary Degree of Effect:** 3 *Moderate* assigned 03/30/2017 by FDOT District 6

**Comments:**

The 100-foot project buffer contains 78.19 acres of residential uses. Hotels are also present within the project vicinity. Other community features within the 100-foot project buffer that may be sensitive to noise and vibration effects include two cemeteries, three health care facilities, one homeowner and condominium association, one group care facility, one religious center, four local Florida parks and recreational facility boundaries (one is a designated Florida Managed Area/National Park Project), two existing recreational trails, two Office of Greenways and Trails (OGT) multi-use trail opportunities/hiking trail priorities - which includes the same two trails identified as part of the Shared-Use Nonmotorized (SUN) Trail Network in Florida [Snapper Creek Trail Corridor and South Dade Trail part of the East Coast Greenway], one other OGT multi-use trail opportunity [CSX Railroad Corridor], and a number of historic and archaeological features. It should be noted that one school, City College-Miami Library, Westchester General Hospital, and West Gables Rehabilitation Hospital are also located near the project corridor. Noise walls are currently present along the corridor between SW 40th Street/Bird Road and SR 836/Dolphin Expressway. Increased noise levels during construction and presumable noise level increases and vibration related impacts from higher traffic volumes as a result of the improved operational conditions along the corridor could have impacts on nearby residences, businesses, and recreational features. For these reasons and due to the number of sensitive features within proximity to the project corridor and possible challenges in providing noise abatement due to the highly-urbanized character of the corridor, a Summary Degree of Effect of Moderate has been assigned to the Noise issue.

During the Project Development phase, a Public Involvement Plan (in accordance with Part 1, Chapter 11 of the PD&E Manual) will be implemented by FDOT District Six in coordination with the Miami-Dade Metropolitan Planning Organization and relevant local municipalities to solicit opinions from residents and business owners on potential noise and vibration effects related to the proposed project improvements. Any identified potential effects will be assessed and noise abatement criteria will be followed (as defined per Part 2, Chapter 17 of the FDOT PD&E Manual) as part of the Noise Study to be performed.

None found

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## Air Quality

### Project Effects

**Coordinator Summary Degree of Effect:** 2 *Minimal* assigned 03/30/2017 by FDOT District 6

**Comments:**

The EST GIS Analysis data layer titled "Air Quality Maintenance Areas" indicates that the project is located within the Southeast Florida Airshed. However, the metadata states that the information is based on 1990 data. As such, current information published on the USEPA website was consulted for the project. The current data (September 2016) indicates that the project corridor is not located within a USEPA-designated Air Quality Maintenance or Non-Attainment Area for any of the six pollutants [ozone, carbon monoxide, sulfur dioxide, nitrogen dioxide, lead, and small particulate matter] specified by the USEPA in National Ambient Air Quality Standards. Therefore, the Clean Air Act conformity requirements do not apply to this project at this time. It should be noted that one USEPA regulated air emission facility is located within the 200-foot project buffer. While no permanent effects to air quality are anticipated, potential temporary impacts to air quality could occur as a result of emissions from equipment and dust generated from project construction activities. For these reasons, a Summary Degree of Effect of Minimal has been assigned to the Air Quality issue.

During Project Development, an Air Quality Technical Memorandum will be prepared in accordance with Part 2, Chapter 16 of the FDOT PD&E Manual.

**Degree of Effect:** 2 *Minimal* assigned 01/09/2017 by Kim Gates, US Environmental Protection Agency

**Coordination Document:** PD&E Support Document As Per PD&E Manual

**Coordination Document Comments:**

Air Quality Technical Memorandum, if one is prepared(PD&E Manual, Part 2, Chapter 16)

### Direct Effects

**Identified Resources and Level of Importance:**

Resource: Air quality that complies with standards established by the USEPA pursuant to the federal Clean Air Act.

Level of Importance: To protect public health and welfare nationwide, the USEPA has established National Ambient Air Quality Standards (NAAQS) for six "criteria pollutants": particulate matter, ozone, sulfur dioxide, nitrogen dioxide, carbon monoxide, and lead. States are required to adopt enforceable plans to achieve and maintain air quality that meets these standards.

**Comments on Effects to Resources:**

The project area is currently in attainment with the National Ambient Air Quality Standards. The USEPA does not anticipate emissions of criteria pollutants from the project being significant enough to impact the area's attainment status.

**Recommended Avoidance, Minimization, and Mitigation Opportunities:**

**CLC Recommendations:**

### Indirect Effects

**Identified Resources and Level of Importance:**

**Comments on Effects to Resources:**

**Recommended Avoidance, Minimization, and Mitigation Opportunities:**

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## Contamination

### Project Effects

**Coordinator Summary Degree of Effect:** 4 *Substantial* assigned 03/30/2017 by FDOT District 6

**Comments:**

The 100-foot project buffer contains three brownfield areas, two Miami-Dade County Department of Environmental Resources Management (DERM) contaminated sites, six hazardous waste facilities, four petroleum contamination monitoring sites, four storage tank contamination monitoring sites, two Super Act Risk Sources, and six USEPA Resource Conservation and Recovery Act (RCRA) regulated facilities.

FDEP indicated that there are substantial areas of contamination within the study area; FDOT needs to outline specific procedures in the Contamination Screening Evaluation and notify FDEP and Miami-Dade County in the event contamination is detected during construction and address the problem through additional assessment and remediation activities. SFWMD stated that construction methodologies, such as dewatering, must be designed to minimize the movement of contaminant plumes; a water use permit may be required if dewatering is necessary. USEPA identified several potential contamination sites within the 500-foot project buffer. It should be noted that FDOT conducted additional coordination with USEPA regarding provided project comments (see EST Attachment titled "14308 FDOT Responses to USEPA Comments"). A Summary Degree of Effect of Substantial has been assigned to the Contamination issue due to the large number of potential contamination features within close proximity to the corridor and potential impacts to existing sources of sub-surface contamination as a result of the project.

Contamination (including any required permits) will be evaluated during the Project Development phase in accordance with federal, state, and local laws and regulations. A Contamination Screening Evaluation Report (similar to Phase I and Phase II Audits) will be prepared in accordance with Part 2, Chapter 22 of the FDOT PD&E Manual, including site specific surveys to assess existing known subsurface contamination and proximity to construction activities, as well as historical contamination release. Contingency Plans/"Special Provisions for Unidentified Areas of Contamination" shall be included in the project's construction contract documents. These provisions will specify procedures to follow in the event any hazardous material or suspected contamination is encountered during construction.

**Degree of Effect:** 4 *Substantial* assigned 01/29/2017 by Kim Gates, US Environmental Protection Agency

**Coordination Document:** PD&E Support Document As Per PD&E Manual

**Coordination Document Comments:**

Contamination Screening Evaluation Report (PD&E Manual, Part 2, Chapter 22)

**Direct Effects**

**Identified Resources and Level of Importance:**

"Contamination in soil, groundwater, surface water and structures may have the following impacts to an FDOT project: i) human exposure, ii) potential or actual human health concerns, iii) exacerbation of the contamination by FDOT construction activities, iv) design modifications or special construction provisions for work within contaminated areas, and v) requirements for the proper handling and disposal of contaminated material." FDOT defines 'Contamination' as: "The presence of any regulated material or chemical contained within the soil, surface water or groundwater on or adjacent to FDOT property, or proposed property, that may require assessment, remediation, or special handling, or that has a potential for liability. These materials would include, but not be limited to, those substances normally referred to as petroleum or petroleum products, solvents, organic and inorganic substances, metals, hazardous materials or substances." [Source: FDOT PD&E Manual, Part 2, Chapter 22 Contamination]

Major federal laws govern the remediation of contaminated sites, including the Resource Conservation and Recovery Act of 1976 (RCRA), as amended; and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended, which includes the Small Business Liability Relief and Brownfields Revitalization Act (Brownfields).

**Comments on Effects to Resources:**

The USEPA does not understand how the 100-foot buffer distance used in the Preliminary Environmental Discussion Comments Report (PED) is adequate to assess impacts on resources in the project corridor. According to the Express Lanes Feasibility Study, the current extent of limited access right-of-way ranges from 187 to 252 feet along the US 1 to SR 874/Don Shula Expressway section of SR 826 and from 200 to 459 feet along the SR 874/Don Shula Expressway to SR 836/Dolphin Expressway section. And the PED reports that "additional right-of-way is anticipated to accommodate the proposed improvements along the corridor." Therefore, it appears that a 500-foot buffer distance, at a minimum, should be utilized. Please provide an explanation in the ETDM Programming Screen Summary Report for using the smaller buffer distance.

Based on information in the EST, the following potentially contaminated sites are located within the 500-foot buffer:

- Brownfield Sites (designated by Miami-Dade County) = 4

- DERM Contaminated Sites = 18
- Hazardous Waste Facilities (i.e., facilities with USEPA ID #s): 43
- FDEP Petroleum Contamination Monitoring Sites: 45 (list may be mostly the same as STCM Sites)
- FDEP Storage Tank Contamination Monitoring Sites: 48 (list may be mostly the same as PCM Sites)
- USEPA RCRA Regulated Facilities (USEPA ID #s not provided and list is not identical to HW Facilities): 29

**Recommended Avoidance, Minimization, and Mitigation Opportunities:**

Given the significant number of potentially contaminated sites in the 500-foot buffer area, the USEPA recommends preparation of a Contamination Screening Evaluation Report to: (1) verify the sites listed in the EST, (2) determine if any of these sites will be impacted by the project, and (3) assess the presence of unreported sources of sub-surface contamination. We also suggest using FDEP's Map Direct: Contamination Locator (<http://ca.dep.state.fl.us/mapdirect/?focus=contamlocator> ) for more accurate information about State and USEPA-regulated site locations and status.

In general, the USEPA recommends avoidance of, or minimized impacts to, these facilities/sites to the extent practicable. If encountered and disturbed during construction, any contaminated site could result in surface and/or groundwater water pollution. In addition, while the project footprint may not directly impact contaminated sites, proposed stormwater management systems and other project construction activities should avoid these areas.

**CLC Recommendations:**

**Indirect Effects**

**Identified Resources and Level of Importance:**

**Comments on Effects to Resources:**

**Recommended Avoidance, Minimization, and Mitigation Opportunities:**

**Degree of Effect:** 3 *Moderate* assigned 01/05/2017 by Suzanne E. Ray, FL Department of Environmental Protection

**Coordination Document:** PD&E Support Document As Per PD&E Manual

**Direct Effects**

**Identified Resources and Level of Importance:**

There are substantial areas of contamination within the study area.

**Comments on Effects to Resources:**

In the event contamination is detected during construction, the Department needs to be notified and the FDOT may need to address the problem through additional assessment and remediation activities. The Contamination Screening Evaluations should outline specific procedures that would be followed by the applicant in the event that drums, wastes, tanks or potentially contaminated soils are encountered during construction. In the event contamination is detected during construction, the Department and the County should be notified, and the FDOT may need to address the problem through additional assessment and remediation activities.

**Recommended Avoidance, Minimization, and Mitigation Opportunities:**

**CLC Recommendations:**

**Indirect Effects**

**Identified Resources and Level of Importance:**

**Comments on Effects to Resources:**

**Recommended Avoidance, Minimization, and Mitigation Opportunities:**

**Degree of Effect:** 3 *Moderate* assigned 12/21/2016 by Mindy Parrott, South Florida Water Management District

**Coordination Document:** To Be Determined: Further Coordination 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:**

As described in the preliminary comments, there are substantial areas of contamination within the study area. Protection of surface and ground water quality is important to SFWMD.

**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:**

**CLC Recommendations:**

**Indirect Effects**

**Identified Resources and Level of Importance:**

**Comments on Effects to Resources:**

**Recommended Avoidance, Minimization, and Mitigation Opportunities:**

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## Infrastructure

### Project Effects

**Coordinator Summary Degree of Effect:** 3 *Moderate* assigned 03/30/2017 by FDOT District 6

**Comments:**

The 100-foot project buffer contains three BTS grade-level railroad crossings, one RCI grade-level railroad crossing, three RCI railroad crossings, one wastewater facility, one wireless antenna structure, one hundred four onsite sewage facilities, two USEPA water quality data monitoring stations, and seven Federal Aviation Administration (FAA) obstructions [poles and signs]. The project additionally crosses CSX Transportation railroad tracks near SR 836/Dolphin Expressway and just south of the SR 874/Don Shula Expressway junction as well as the Metrorail Green/Orange lines in the vicinity of the northbound SR 826/Palmetto Expressway ramp from US 1/South Dixie Highway. Lighting along the project corridor consists of conventional cobra head luminaires mounted on steel poles. Further, a number of utility companies and governmental utility departments have facilities located along the project corridor or within the project vicinity. A pedestrian bridge also exists; the bridge crosses over SR 826/Palmetto Expressway approximately 0.32-mile north of SW 40th Street/Bird Road. Given the extensive utilities and infrastructure-related features within proximity to the project segment, a Summary Degree of Effect of Moderate has been assigned to the Infrastructure issue.

An assessment of potential impacts to identified infrastructure-related resources will be conducted during the Project Development phase. FDOT District Six will further coordinate with relevant agencies on required studies, documentation and commitments needed to adequately address identified resources in accordance with federal, state, and local laws and regulations.

None found

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## Navigation

### Project Effects

**Coordinator Summary Degree of Effect:** 2 *Minimal* assigned 03/30/2017 by FDOT District 6

**Comments:**

The project crosses four SFWMD maintained canals [Tamiami Canal/C-4, Coral Gables Canal/C-3, Snapper Creek Canal/C-2, and Cutler Drain Canal/C-100A]. While the canals may be used for recreational purposes, none connect to open water.

USACE stated that the canals within the project area do not appear to be federally navigable channels; however, if the canals are deemed federally navigable, a Section 10 permit and potentially a Section 404 permit would be required if fill is proposed for the abutments of the bridges. USCG indicated no involvement. Due to the potential need for future coordination with the USACE and USCG, a Summary Degree of Effect of Minimal has been assigned to the Navigation issue.

**Degree of Effect:** 2 *Minimal* assigned 12/16/2016 by Tarrie L Ostrofsky, US Army Corps of Engineers

**Coordination Document:** Permit Required

**Coordination Document Comments:**

It is unlikely that the canals are federally navigable channels; however, if the canals are deemed federally navigable, a Section 10 and potentially Section 404 permit would be required if fill is proposed for the abutments of the bridges.

**Direct Effects**

**Identified Resources and Level of Importance:**

It does not appear that the canals within the project corridor are federally navigable. However, if the canals are deemed federally navigable, it is anticipated that the effects on navigation would be minimal.

**Comments on Effects to Resources:**

If the canals are deemed federally navigable, the effects would potentially be reduced waterway widths if bridge approaches and/or abutments would need to be installed within the waterway or if riprap protection would be needed and/or reduced depths.

**Recommended Avoidance, Minimization, and Mitigation Opportunities:**

Avoidance and minimization efforts should be evaluated and may include minimal riprap placement, minimal bridge widening widths, etc. Mitigation opportunities for navigation impacts could include designating or providing a route through the waterway at the bridge locations which would still enable navigation to continue, thereby offsetting the impact to navigation.

**CLC Recommendations:**

**Indirect Effects**

**Identified Resources and Level of Importance:**

It does not appear that the canals within the project corridor are federally navigable. However, if the canals are deemed federally navigable, it is anticipated that the indirect effects on navigation would be minimal.

**Comments on Effects to Resources:**

If the canals are deemed federally navigable, the indirect effects would potentially be altered channel widths and depths due to erosion if best management practices are not utilized.

**Recommended Avoidance, Minimization, and Mitigation Opportunities:**

Avoidance and minimization efforts should be evaluated and may include best management practices during construction, stabilization of the banks and abutments, minimal removal of vegetation along the banks to minimize erosion, etc. Mitigation opportunities for navigation impacts could include permanent stabilization of the banks to ensure erosion does not occur which would reduce water depths.

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**Degree of Effect:** N/A *N/A / No Involvement* assigned 12/09/2016 by Randall D Overton, US Coast Guard

**Coordination Document:** No Involvement

**Direct Effects**

**Identified Resources and Level of Importance:**

Navigable waters of the U.S.

**Comments on Effects to Resources:**

No involvement

**Recommended Avoidance, Minimization, and Mitigation Opportunities:**

## CLC Recommendations:

### Indirect Effects

#### Identified Resources and Level of Importance:

#### Comments on Effects to Resources:

#### Recommended Avoidance, Minimization, and Mitigation Opportunities:

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## ETAT Reviews and Coordinator Summary: Special Designations

### Special Designations

#### Project Effects

**Coordinator Summary Degree of Effect:** 3 Moderate assigned 03/30/2017 by FDOT District 6

#### Comments:

There are no Outstanding Florida Waters, aquatic preserves, scenic highways, nor wild and scenic rivers reported within the 100-foot project buffer. SFWMD stated that the project crosses SFWMD Right-of-Way and canals at multiple locations; right-of-way permits or modifications may be required from SFWMD for any work within the canals or rights-of-way, including new crossings or widening of existing crossings. USEPA identified the Biscayne Aquifer (a Sole Source Aquifer) as a feature of special designation. USEPA indicated that pursuant to the Sole Source Aquifer Memorandum of Understanding, the project needs to be reviewed by the USEPA Region 4's Ground Water/Drinking Water Branch prior to the commitment of federal funding; USEPA outlined specific information to be included in the request. USEPA also recommended that FDOT coordinate with the Miami-Dade County Department of Environmental Resources Management to ensure protection of potable water supply wells and compliance with stringent wellfield protection measures as the project corridor is located in the Wellfield Protection Area for the Alexander Orr Wellfields. USFWS reported that a large section of the project footprint runs adjacent to valuable public conservation lands which contain designated critical habitat of endangered Florida brickell-bush and Carter's small flower flax; FDOT should design the project to avoid impacts to the identified public conservation lands. Due to agency concerns regarding potential project effects, a Summary Degree of Effect of Moderate has been assigned to the Special Designations issue.

During the Project Development phase, FDOT District Six will coordinate with the appropriate agencies concerning the necessary studies, documentation, and commitments needed to adequately address all identified resources and avoid and/or minimize any potential project impacts. FDOT District Six will also comply with the Sole Source Aquifer Memorandum of Understanding given potential impacts to the Biscayne Aquifer. All necessary permits will be obtained in accordance with federal, state, and local laws and regulations during subsequent project phases. In addition, best management practices will be utilized during construction.

**Degree of Effect:** 3 Moderate assigned 01/29/2017 by Kim Gates, US Environmental Protection Agency

**Coordination Document:** PD&E Support Document As Per PD&E Manual

#### Coordination Document Comments:

Water Quality Impact Evaluation (PD&E Manual, Part 2, Chapter 20)

### Direct Effects

#### Identified Resources and Level of Importance:

The PD&E Manual (Part I, Chapter 3) defines the Special Designations category as comprised of Outstanding Florida Waters (Rule 62-302.700, F.A.C.), Aquatic Preserves (Rule 62-302.700(2)(f), F.A.C.), Scenic Highways (PD&E Manual, Part 2, Chapter 29), and Wild & Scenic Rivers (Rule 62-302.700(2)(d), F.A.C.). In addition, the *Agency Operating and Funding Agreement for Continuing Participation in the Efficient Transportation Decision Making and Transportation Project Development Processes between United States Environmental Protection Agency and Federal Highway Administration and Florida Department of Transportation*, January 23, 2015, identifies Sole Source Aquifers as Special Designations under the USEPA's purview. The Sole Source Aquifer Protection Program is authorized by Section 1424(e) of the Safe Drinking Water Act of 1974.

The Biscayne aquifer, which underlies Miami-Dade, Broward, and part of Palm Beach counties, supplies virtually all of the potable water needs for almost 6 million residents in southeastern Florida, including the Florida Keys. Consistent with the Safe Drinking

## **Appendix B-1**

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*Land Use/Vegetative Cover Map*

SR 836

END PROJECT



W FLAGLER STREET



SW 24th STREET

SR 826

SW 40th STREET

SW 56th STREET

SR 874

SW 72nd STREET

SW 88th STREET



SW 104th STREET

BEGIN PROJECT

**Legend**

-  Project Study Area
-  111 Fixed Single Family Units
-  133 Multiple Dwelling Units, Low Rise <Two stories or less>
-  134 Multiple Dwelling Units, High Rise <Three stories or more>
-  140 Commercial and Services
-  141 Retail Sales and Services
-  148 Cemeteries
-  155 Other Light Industrial
-  170 Institutional
-  71 Educational Facilities
-  185 Parks and Zoos
-  190 Open Land
-  510 Streams and Waterways
-  530 Reservoirs
-  812 Railroads
-  814 Roads and Highways

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**Appendix B-2**  
*Land Use Descriptions*

## **LAND USE DESCRIPTIONS**

### **133 – Multiple Dwelling Units, Low Rise <Two stories or less>**

### **140 – Commercial and Services**

Commercial areas are predominantly associated with the distribution of products and services. This category is composed of a large number of individual types of commercial land uses which often occur in complex mixtures.

The Commercial and Services category includes all secondary structures associated with an enterprise in addition to the main building and integral areas assigned to support the base unit. Included are sheds, warehouses, office buildings, driveways, parking lots and landscaped areas.

Other types of Commercial areas include shopping centers and commercial strip developments. These areas have distinctive patterns which are readily identifiable on aerial photographs. Frequently, individual houses and other classes of urban land use may be found within commercial areas. Such uses normally are not delineated unless they can be plotted into polygons of at least one acre size at Level III. Otherwise, the Mixed category should be used.

Commercial use which cannot be easily identified on aerial photography is the commercial resort. These businesses cater to vacationing patrons and often contain associated recreational facilities such as swimming pools and ball courts.

### **155 – Other Light Industry**

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

### **1411 – Shopping Centers**

### **111 – Fixed Single Family Units**

## **530 – Reservoirs**

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

## **185 – Parks and Zoos**

## **148 – Cemeteries**

## **170 – Institutional**

Educational, religious, health and military facilities are typical components of this category. Included within a particular institutional unit are all buildings, grounds and parking lots that compose the facility. Those areas not specifically related to the purposes of the institution should be excluded. For example, agriculture areas not specifically associated with correctional, educational or religious institutions are placed in the appropriate Agricultural categories.

Educational institutions encompass all levels of public and private schools, colleges, universities, training centers, etc. The entire areas enclosing buildings, campus open space, dormitories, recreational facilities and parking lots are included in this category when they are identifiable.

Military facilities are characterized by a wide variety of features including training camps, missile sites, etc. Administration, storage, repair, security and other functional military buildings plus the practice ranges, storage areas, equipment storage lots and buffer zones compose the institutional military facilities. Auxiliary land uses, particularly residential, commercial and other supporting uses located on a military base, are included in the Institutional category.

## **171 – Educational Facilities**

This category includes all supporting facilities including parking lots, stadiums, and all buildings and any other features that can be related to the facility.

## **134 – Multiple Dwelling Units – High Rise <Three stories or more>**

## **812 – Railroads and Railyards**

## **814 – Roads and Highways**

### **190 – Open Land**

This category includes undeveloped land within urban areas and inactive land with street patterns but without structures. Open Land normally does not exhibit any structures or any indication of intended use. Often, urban inactive land may be in a transitional state and ultimately will be developed into one of the typical urban land uses although at the time of the inventory, the intended use may be impossible to determine from aerial photo interpretation alone.

### **510 – Streams and Waterways**

This category includes rivers, creeks, canals and other linear water bodies. Where the water course is interrupted by a control structure, the impounded water area will be placed in the Reservoirs category (530). The boundary between streams and lakes, reservoirs or the ocean is the straight line across the mouth of the stream unless the mouth is more than one mile (1.85 kilometers) wide. In that case, the rule given under Bays and Estuaries (540) is followed.

# **Appendix C-1**

*Soils Map*



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**Appendix C-2**  
*Soils Descriptions*

## **9—Udorthents-Water complex**

### **Map Unit Setting**

- National map unit symbol: p66b
- Mean annual precipitation: 62 to 70 inches
- Mean annual air temperature: 73 to 81 degrees F
- Frost-free period: 358 to 365 days
- Farmland classification: Not prime farmland

### **Map Unit Composition**

- Udorthents and similar soils: 75 percent
- Water: 20 percent
- Minor components: 5 percent
  
- Estimates are based on observations, descriptions, and transects of the mapunit.

### **Description of Udorthents**

#### **Setting**

- Landform: Marine terraces
- Landform position (three-dimensional): Interfluve
- Down-slope shape: Convex
- Across-slope shape: Linear
- Parent material: Altered marine deposits

#### **Typical profile**

- C - 0 to 80 inches: gravelly loam

#### **Properties and qualities**

- Slope: 15 to 60 percent
- Depth to restrictive feature: More than 80 inches
- Natural drainage class: Well drained
- Runoff class: Negligible
- Capacity of the most limiting layer to transmit water (Ksat): High to very high (1.98 to 19.98 in/hr)
- Depth to water table: More than 80 inches
- Frequency of flooding: None
- Frequency of ponding: None
- Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
- Sodium adsorption ratio, maximum in profile: 4.0
- Available water storage in profile: Very low (about 2.4 inches)

### **Interpretive groups**

- Land capability classification (irrigated): None specified
- Land capability classification (nonirrigated): 7s
- Hydrologic Soil Group: A
- Forage suitability group: Forage suitability group not assigned (G156AC999FL)
- Hydric soil rating: No

### **Minor Components**

#### **Urban land**

- Percent of map unit: 5 percent
- Landform: Marine terraces
- Landform position (three-dimensional): Interfluve, talf
- Down-slope shape: Linear
- Across-slope shape: Linear
- Hydric soil rating: Unranked

Expand Description — Map Unit Description

## **10—Udorthents, limestone substratum-Urban land complex**

### **Map Unit Setting**

- National map unit symbol: p66c
- Elevation: 10 feet
- Mean annual precipitation: 62 to 70 inches
- Mean annual air temperature: 73 to 81 degrees F
- Frost-free period: 358 to 365 days
- Farmland classification: Not prime farmland

### **Map Unit Composition**

- Udorthents and similar soils: 55 percent
- Urban land: 35 percent
- Minor components: 10 percent
  
- Estimates are based on observations, descriptions, and transects of the mapunit.

### **Description of Udorthents**

#### **Setting**

- Landform: Marine terraces
- Landform position (three-dimensional): Interfluve

- Down-slope shape: Convex
- Across-slope shape: Linear
- Parent material: Altered marine deposits

#### **Typical profile**

- C - 0 to 55 inches: extremely gravelly loam
- 2R - 55 to 59 inches: unweathered bedrock

#### **Properties and qualities**

- Slope: 0 to 2 percent
- Depth to restrictive feature: 40 to 72 inches to lithic bedrock
- Natural drainage class: Somewhat poorly drained
- Runoff class: Negligible
- Capacity of the most limiting layer to transmit water (Ksat): High to very high (1.98 to 19.98 in/hr)
- Depth to water table: About 24 to 48 inches
- Frequency of flooding: None
- Frequency of ponding: None
- Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
- Sodium adsorption ratio, maximum in profile: 4.0
- Available water storage in profile: Very low (about 2.2 inches)

#### **Interpretive groups**

- Land capability classification (irrigated): None specified
- Land capability classification (nonirrigated): 7s
- Hydrologic Soil Group: A
- Forage suitability group: Forage suitability group not assigned (G156AC999FL)
- Hydric soil rating: No

#### **Description of Urban Land**

##### **Setting**

- Landform: Marine terraces
- Landform position (three-dimensional): Interfluve, talf
- Down-slope shape: Linear
- Across-slope shape: Linear
- Parent material: No parent material

#### **Minor Components**

##### **Cardsound**

- Percent of map unit: 5 percent

- Landform: Flats on marine terraces
- Landform position (three-dimensional): Talf
- Down-slope shape: Convex
- Across-slope shape: Linear
- Hydric soil rating: No

#### **Krome**

- Percent of map unit: 5 percent
- Landform: Rises on marine terraces
- Landform position (three-dimensional): Interfluve
- Down-slope shape: Convex
- Across-slope shape: Linear
- Hydric soil rating: No

### **15—Urban land, 0 to 2 percent slopes**

#### **Map Unit Setting**

- National map unit symbol: 2x9fc
- Elevation: 0 to 200 feet
- Mean annual precipitation: 40 to 68 inches
- Mean annual air temperature: 68 to 79 degrees F
- Frost-free period: 345 to 365 days
- Farmland classification: Not prime farmland

#### **Map Unit Composition**

- Urban land: 85 percent
- Minor components: 15 percent
- Estimates are based on observations, descriptions, and transects of the mapunit.

#### **Description of Urban Land**

##### **Setting**

- Landform: Flatwoods on marine terraces, rises on marine terraces, knolls on marine terraces, ridges on marine terraces, hills on marine terraces
- Landform position (two-dimensional): Backslope, summit
- Landform position (three-dimensional): Interfluve, side slope, riser, talf, rise
- Down-slope shape: Linear, convex
- Across-slope shape: Linear
- Parent material: No parent material

##### **Typical profile**

- M - 0 to 6 inches: cemented material
- ^C - 6 to 36 inches: paragravelly sand
- 2Ab - 36 to 46 inches: paragravelly fine sand
- 2Cb - 46 to 80 inches: paragravelly fine sand

## **Minor Components**

### **Matlacha**

- Percent of map unit: 3 percent
- Landform: Flats on marine terraces
- Landform position (three-dimensional): Tread, talf
- Down-slope shape: Linear, convex
- Across-slope shape: Linear
- Hydric soil rating: No

### **St. augustine**

- Percent of map unit: 3 percent
- Landform: Marine terraces
- Landform position (three-dimensional): Tread, rise
- Down-slope shape: Linear
- Across-slope shape: Convex
- Hydric soil rating: No

### **Paola**

- Percent of map unit: 1 percent
- Landform: Ridges on marine terraces, knolls on marine terraces
- Landform position (two-dimensional): Summit, backslope
- Landform position (three-dimensional): Side slope, interfluve, riser
- Down-slope shape: Linear, convex
- Across-slope shape: Linear
- Other vegetative classification: Sand Pine Scrub (R155XY001FL)
- Hydric soil rating: No

### **Pomello**

- Percent of map unit: 1 percent
- Landform: Ridges on marine terraces, knolls on marine terraces
- Landform position (two-dimensional): Summit, backslope
- Landform position (three-dimensional): Side slope, interfluve, riser
- Down-slope shape: Linear, convex
- Across-slope shape: Linear
- Other vegetative classification: Sand Pine Scrub (R155XY001FL)
- Hydric soil rating: No

### **Adamsville**

- Percent of map unit: 1 percent
- Landform: Rises on marine terraces, knolls on marine terraces
- Landform position (three-dimensional): Tread, rise
- Down-slope shape: Convex
- Across-slope shape: Linear
- Other vegetative classification: Upland Hardwood Hammock (R155XY008FL)
- Hydric soil rating: No

### **Boca**

- Percent of map unit: 1 percent
- Landform: Flats on marine terraces, drainageways on marine terraces
- Landform position (three-dimensional): Tread, talf, dip
- Down-slope shape: Convex, linear
- Across-slope shape: Linear, concave
- Other vegetative classification: South Florida Flatwoods (R155XY003FL)
- Hydric soil rating: Yes

### **Eaugallie**

- Percent of map unit: 1 percent
- Landform: Flatwoods on marine terraces
- Landform position (three-dimensional): Tread, talf
- Down-slope shape: Convex
- Across-slope shape: Linear
- Other vegetative classification: South Florida Flatwoods (R155XY003FL)
- Hydric soil rating: No

### **Hallandale**

- Percent of map unit: 1 percent
- Landform: Flatwoods on marine terraces
- Landform position (three-dimensional): Tread, talf
- Down-slope shape: Linear
- Across-slope shape: Linear
- Other vegetative classification: South Florida Flatwoods (R155XY003FL)
- Hydric soil rating: Yes

### **Immokalee**

- Percent of map unit: 1 percent
- Landform: Flatwoods on marine terraces
- Landform position (three-dimensional): Riser, talf
- Down-slope shape: Linear
- Across-slope shape: Linear

- Other vegetative classification: South Florida Flatwoods (R155XY003FL)
- Hydric soil rating: No

#### **Myakka**

- Percent of map unit: 1 percent
- Landform: Drainageways on flatwoods on marine terraces
- Landform position (three-dimensional): Tread, dip, talf
- Down-slope shape: Linear
- Across-slope shape: Linear, concave
- Other vegetative classification: South Florida Flatwoods (R155XY003FL)
- Hydric soil rating: No

#### **Apopka**

- Percent of map unit: 1 percent
- Landform: Hills on marine terraces, ridges on marine terraces
- Landform position (two-dimensional): Backslope, summit
- Landform position (three-dimensional): Interfluve, side slope, riser
- Down-slope shape: Convex
- Across-slope shape: Linear
- Other vegetative classification: Longleaf Pine-Turkey Oak Hills (R155XY002FL)
- Hydric soil rating: No

## **22—Opalocka sand-Rock outcrop complex**

### **Map Unit Setting**

- National map unit symbol: p66q
- Elevation: 10 feet
- Mean annual precipitation: 62 to 70 inches
- Mean annual air temperature: 73 to 81 degrees F
- Frost-free period: 358 to 365 days
- Farmland classification: Not prime farmland

### **Map Unit Composition**

- Opalocka and similar soils: 60 percent
- Rock outcrop: 38 percent
- Minor components: 2 percent
- Estimates are based on observations, descriptions, and transects of the mapunit.

### **Description of Opalocka**

#### **Setting**

- Landform: Rises on marine terraces
- Landform position (three-dimensional): Rise
- Down-slope shape: Convex
- Across-slope shape: Linear
- Parent material: Sandy marine deposits over limestone

#### **Typical profile**

- A - 0 to 6 inches: sand
- 2R - 6 to 10 inches: unweathered bedrock

#### **Properties and qualities**

- Slope: 0 to 2 percent
- Depth to restrictive feature: 2 to 9 inches to lithic bedrock
- Natural drainage class: Well drained
- Runoff class: Negligible
- Capacity of the most limiting layer to transmit water (Ksat): High to very high (1.98 to 19.98 in/hr)
- Depth to water table: About 60 to 72 inches
- Frequency of flooding: None
- Frequency of ponding: None
- Calcium carbonate, maximum in profile: 5 percent
- Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
- Sodium adsorption ratio, maximum in profile: 4.0
- Available water storage in profile: Very low (about 0.2 inches)

#### **Interpretive groups**

- Land capability classification (irrigated): None specified
- Land capability classification (nonirrigated): 6s
- Hydrologic Soil Group: D
- Forage suitability group: Shallow or moderately deep, sandy or loamy soils on rises and ridges of mesic uplands (G156AC521FL)
- Hydric soil rating: No

#### **Description of Rock Outcrop**

##### **Setting**

- Landform: Flats on marine terraces
- Landform position (three-dimensional): Talf
- Down-slope shape: Convex
- Across-slope shape: Linear

##### **Typical profile**

- R - 0 to 80 inches: unweathered bedrock

#### **Properties and qualities**

- Slope: 0 to 2 percent
- Depth to restrictive feature: 0 inches to lithic bedrock
- Runoff class: Negligible
- Capacity of the most limiting layer to transmit water (Ksat): High to very high (1.98 to 19.98 in/hr)

#### **Interpretive groups**

- Land capability classification (irrigated): None specified
- Land capability classification (nonirrigated): 8
- Forage suitability group: Forage suitability group not assigned (G156AC999FL)
- Hydric soil rating: Unranked

#### **Minor Components**

##### **Krome**

- Percent of map unit: 2 percent
- Landform: Rises on marine terraces
- Landform position (three-dimensional): Interfluve
- Down-slope shape: Convex
- Across-slope shape: Linear
- Hydric soil rating: No

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## **Appendix D**

*IPaC Resource List*

## IPaC Information for Planning and Consultation 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

Miami-Dade 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

<sup>1</sup> 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<sup>2</sup>).

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 Bonneted Bat <i>Eumops floridanus</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/8630">https://ecos.fws.gov/ecp/species/8630</a>	Endangered
Florida Panther <i>Puma (=Felis) concolor coryi</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/1763">https://ecos.fws.gov/ecp/species/1763</a>	Endangered
Puma (=mountain Lion) <i>Puma (=Felis) concolor (all subsp. except coryi)</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/6049">https://ecos.fws.gov/ecp/species/6049</a>	SAT
West Indian Manatee <i>Trichechus manatus</i> There is <b>final</b> critical habitat for this species. Your location overlaps the critical habitat. <a href="https://ecos.fws.gov/ecp/species/4469">https://ecos.fws.gov/ecp/species/4469</a>	Threatened Marine mammal

## Birds

NAME	STATUS
Bachman's Warbler (=wood) <i>Vermivora bachmanii</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/3232">https://ecos.fws.gov/ecp/species/3232</a>	Endangered
Cape Sable Seaside Sparrow <i>Ammodramus maritimus mirabilis</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/6584">https://ecos.fws.gov/ecp/species/6584</a>	Endangered
Everglade Snail Kite <i>Rostrhamus sociabilis plumbeus</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/7713">https://ecos.fws.gov/ecp/species/7713</a>	Endangered
Florida Grasshopper Sparrow <i>Ammodramus savannarum floridanus</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/32">https://ecos.fws.gov/ecp/species/32</a>	Endangered
Florida Scrub-jay <i>Aphelocoma coerulescens</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/6174">https://ecos.fws.gov/ecp/species/6174</a>	Threatened

Ivory-billed Woodpecker <i>Campephilus principalis</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/8230">https://ecos.fws.gov/ecp/species/8230</a>	Endangered
Kirtland's Warbler <i>Setophaga kirtlandii</i> (= <i>Dendroica kirtlandii</i> ) No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/8078">https://ecos.fws.gov/ecp/species/8078</a>	Endangered
Piping Plover <i>Charadrius melodus</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/6039">https://ecos.fws.gov/ecp/species/6039</a>	Threatened
Red Knot <i>Calidris canutus rufa</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/1864">https://ecos.fws.gov/ecp/species/1864</a>	Threatened
Red-cockaded Woodpecker <i>Picoides borealis</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/7614">https://ecos.fws.gov/ecp/species/7614</a>	Endangered
Wood Stork <i>Mycteria americana</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/8477">https://ecos.fws.gov/ecp/species/8477</a>	Threatened

## Reptiles

NAME	STATUS
American Alligator <i>Alligator mississippiensis</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/776">https://ecos.fws.gov/ecp/species/776</a>	SAT
American Crocodile <i>Crocodylus acutus</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/6604">https://ecos.fws.gov/ecp/species/6604</a>	Threatened
Eastern Indigo Snake <i>Drymarchon corais couperi</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/646">https://ecos.fws.gov/ecp/species/646</a>	Threatened
Hawksbill Sea Turtle <i>Eretmochelys imbricata</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/3656">https://ecos.fws.gov/ecp/species/3656</a>	Endangered

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>

## Fishes

NAME	STATUS
Atlantic Sturgeon (gulf Subspecies) <i>Acipenser oxyrinchus</i> (=oxyrhynchus) <i>desotoi</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/651">https://ecos.fws.gov/ecp/species/651</a>	Threatened

## Snails

NAME	STATUS
Stock Island Tree Snail <i>Orthalicus reses</i> (not incl. <i>nesodryas</i> ) No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/466">https://ecos.fws.gov/ecp/species/466</a>	Threatened

## Insects

NAME	STATUS
Bartram's Hairstreak Butterfly <i>Strymon acis bartrami</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/4837">https://ecos.fws.gov/ecp/species/4837</a>	Endangered
Florida Leafwing Butterfly <i>Anaea troglodyta floralis</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/6652">https://ecos.fws.gov/ecp/species/6652</a>	Endangered
Miami Blue Butterfly <i>Cyclargus</i> (=Hemiargus) <i>thomasi</i> <i>bethunebakeri</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/3797">https://ecos.fws.gov/ecp/species/3797</a>	Endangered

Schaus Swallowtail Butterfly *Heraclides aristodemus ponceanus* Endangered  
 No critical habitat has been designated for this species.  
<https://ecos.fws.gov/ecp/species/1951>

## Flowering Plants

NAME	STATUS
Beach Jacquemontia <i>Jacquemontia reclinata</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/1277">https://ecos.fws.gov/ecp/species/1277</a>	Endangered
Blodgett's Silverbush <i>Argythamnia blodgettii</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/6823">https://ecos.fws.gov/ecp/species/6823</a>	Threatened
Cape Sable Thoroughwort <i>Chromolaena frustrata</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/4733">https://ecos.fws.gov/ecp/species/4733</a>	Endangered
Carter's Mustard <i>Warea carteri</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/5583">https://ecos.fws.gov/ecp/species/5583</a>	Endangered
Carter's Small-flowered Flax <i>Linum carteri carteri</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/7208">https://ecos.fws.gov/ecp/species/7208</a>	Endangered
Crenulate Lead-plant <i>Amorpha crenulata</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/6470">https://ecos.fws.gov/ecp/species/6470</a>	Endangered
Deltoid Spurge <i>Chamaesyce deltoidea</i> ssp. <i>deltoidea</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/199">https://ecos.fws.gov/ecp/species/199</a>	Endangered
Everglades Bully <i>Sideroxylon reclinatum</i> ssp. <i>austrofloridense</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/4735">https://ecos.fws.gov/ecp/species/4735</a>	Threatened
Florida Brickell-bush <i>Brickellia mosieri</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/956">https://ecos.fws.gov/ecp/species/956</a>	Endangered

Florida Pineland Crabgrass <i>Digitaria pauciflora</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/3728">https://ecos.fws.gov/ecp/species/3728</a>	Threatened
Florida Prairie-clover <i>Dalea carthagenensis floridana</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/2300">https://ecos.fws.gov/ecp/species/2300</a>	Endangered
Florida Semaphore Cactus <i>Consolea corallicola</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. <a href="https://ecos.fws.gov/ecp/species/4356">https://ecos.fws.gov/ecp/species/4356</a>	Endangered
Garber's Spurge <i>Chamaesyce garberi</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/8229">https://ecos.fws.gov/ecp/species/8229</a>	Threatened
Okeechobee Gourd <i>Cucurbita okeechobeensis</i> ssp. okeechobeensis No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/5999">https://ecos.fws.gov/ecp/species/5999</a>	Endangered
Pineland Sandmat <i>Chamaesyce deltoidea pinetorum</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/1914">https://ecos.fws.gov/ecp/species/1914</a>	Threatened
Sand Flax <i>Linum arenicola</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/4313">https://ecos.fws.gov/ecp/species/4313</a>	Endangered
Small's Milkpea <i>Galactia smallii</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/3360">https://ecos.fws.gov/ecp/species/3360</a>	Endangered
Tiny Polygala <i>Polygala smallii</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/996">https://ecos.fws.gov/ecp/species/996</a>	Endangered

## Ferns and Allies

NAME	STATUS
Florida Bristle Fern <i>Trichomanes punctatum</i> ssp. floridanum No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/8739">https://ecos.fws.gov/ecp/species/8739</a>	Endangered

## Critical habitats

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

This location overlaps the critical habitat for the following species:

NAME	TYPE
West Indian Manatee <i>Trichechus manatus</i> <a href="https://ecos.fws.gov/ecp/species/4469#crithab">https://ecos.fws.gov/ecp/species/4469#crithab</a>	Final

## Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act

<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

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.)
<p>American Kestrel <i>Falco sparverius paulus</i>            This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA</p>	Breeds Apr 1 to Aug 31
<p>Bald Eagle <i>Haliaeetus leucocephalus</i>            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.  <a href="https://ecos.fws.gov/ecp/species/1626">https://ecos.fws.gov/ecp/species/1626</a></p>	Breeds Sep 1 to Jul 31
<p>Black Skimmer <i>Rynchops niger</i>            This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.  <a href="https://ecos.fws.gov/ecp/species/5234">https://ecos.fws.gov/ecp/species/5234</a></p>	Breeds May 20 to Sep 15
<p>Black-whiskered Vireo <i>Vireo altiloquus</i>            This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA</p>	Breeds May 1 to Aug 15
<p>Common Ground-dove <i>Columbina passerina exigua</i>            This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA</p>	Breeds Feb 1 to Dec 31
<p>Least Tern <i>Sterna antillarum</i>            This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA</p>	Breeds Apr 20 to Sep 10

Lesser Yellowlegs <i>Tringa flavipes</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9679">https://ecos.fws.gov/ecp/species/9679</a>	Breeds elsewhere
Limpkin <i>Aramus guarana</i> 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 <i>Fregata magnificens</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Oct 1 to Apr 30
Mangrove Cuckoo <i>Coccyzus minor</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 20
Prairie Warbler <i>Dendroica discolor</i> 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 <i>Protonotaria citrea</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 1 to Jul 31
Reddish Egret <i>Egretta rufescens</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/7617">https://ecos.fws.gov/ecp/species/7617</a>	Breeds Mar 1 to Sep 15
Ruddy Turnstone <i>Arenaria interpres morinella</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Short-tailed Hawk <i>Buteo brachyurus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA <a href="https://ecos.fws.gov/ecp/species/8742">https://ecos.fws.gov/ecp/species/8742</a>	Breeds Mar 1 to Jun 30
Swallow-tailed Kite <i>Elanoides forficatus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/8938">https://ecos.fws.gov/ecp/species/8938</a>	Breeds Mar 10 to Jun 30

**Whimbrel** *Numenius phaeopus*

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

<https://ecos.fws.gov/ecp/species/9483>

Breeds elsewhere

**White-crowned Pigeon** *Patagioenas leucocephala*

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

<https://ecos.fws.gov/ecp/species/4047>

Breeds May 1 to Sep 30

**Willet** *Tringa semipalmata*

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

Breeds Apr 20 to Aug 5

**Yellow Warbler** *Dendroica petechia gundlachi*

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

Breeds May 20 to Aug 10

## 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.

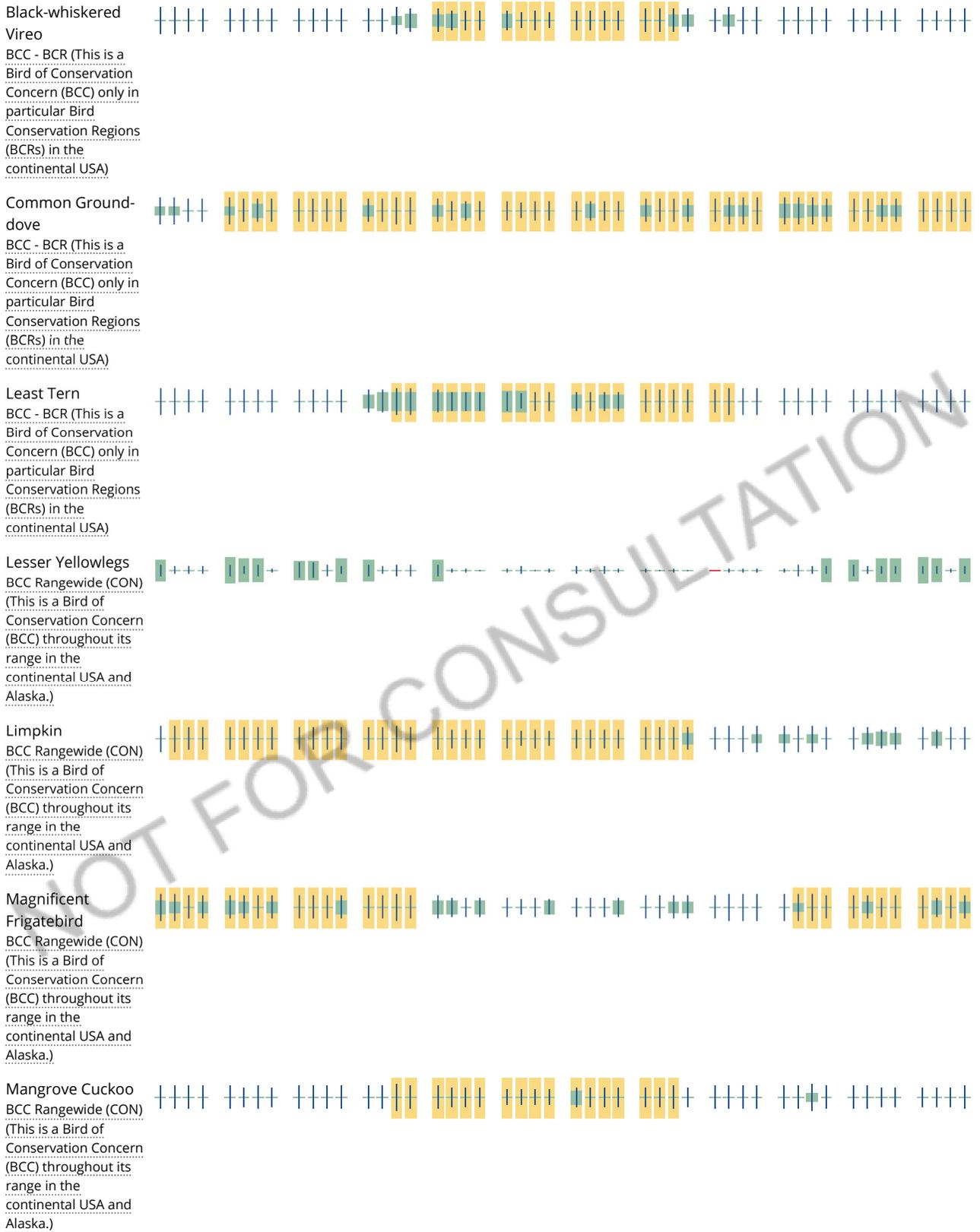
**No Data (-)**

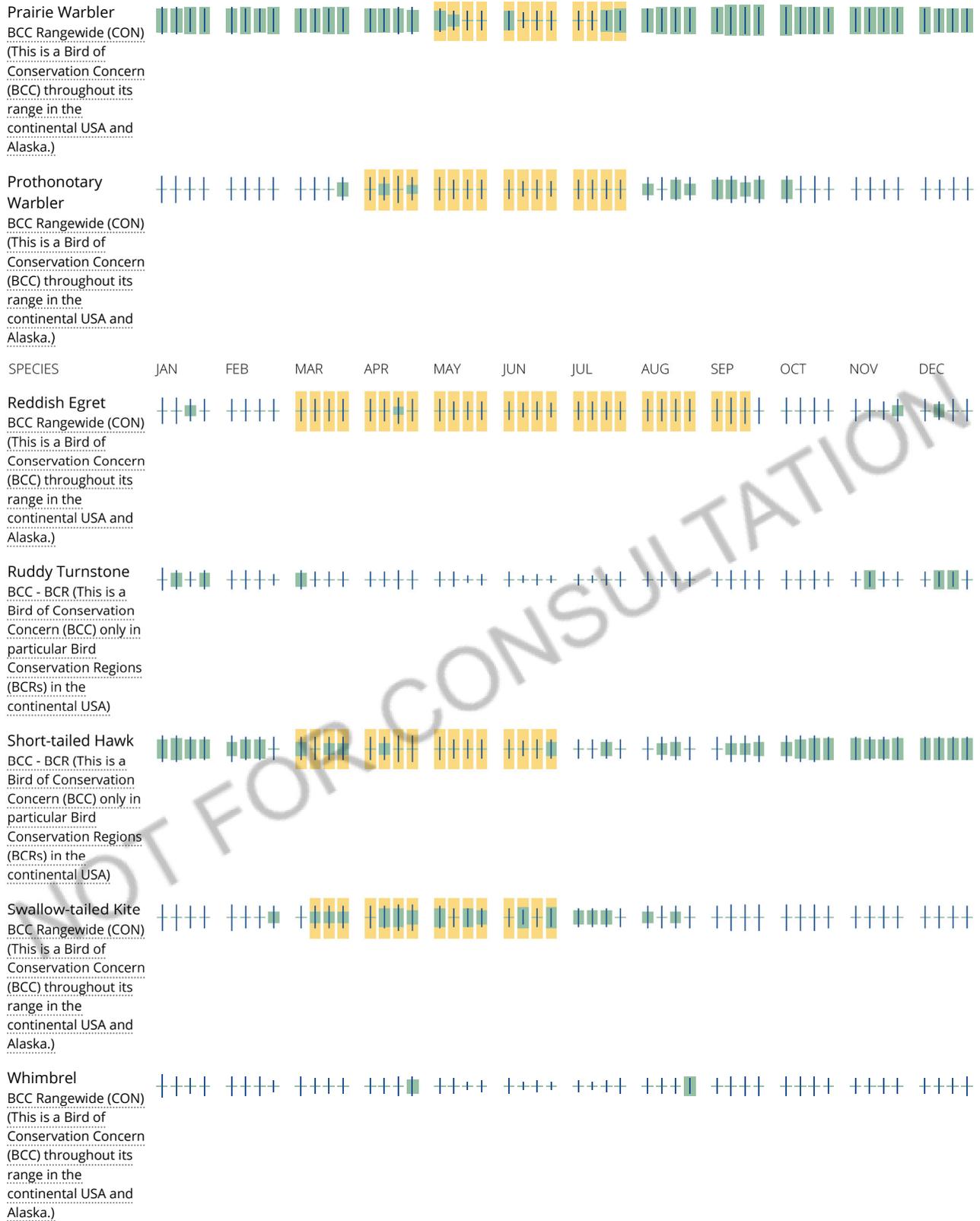
A week is marked as having no data if there were no survey events for that week.

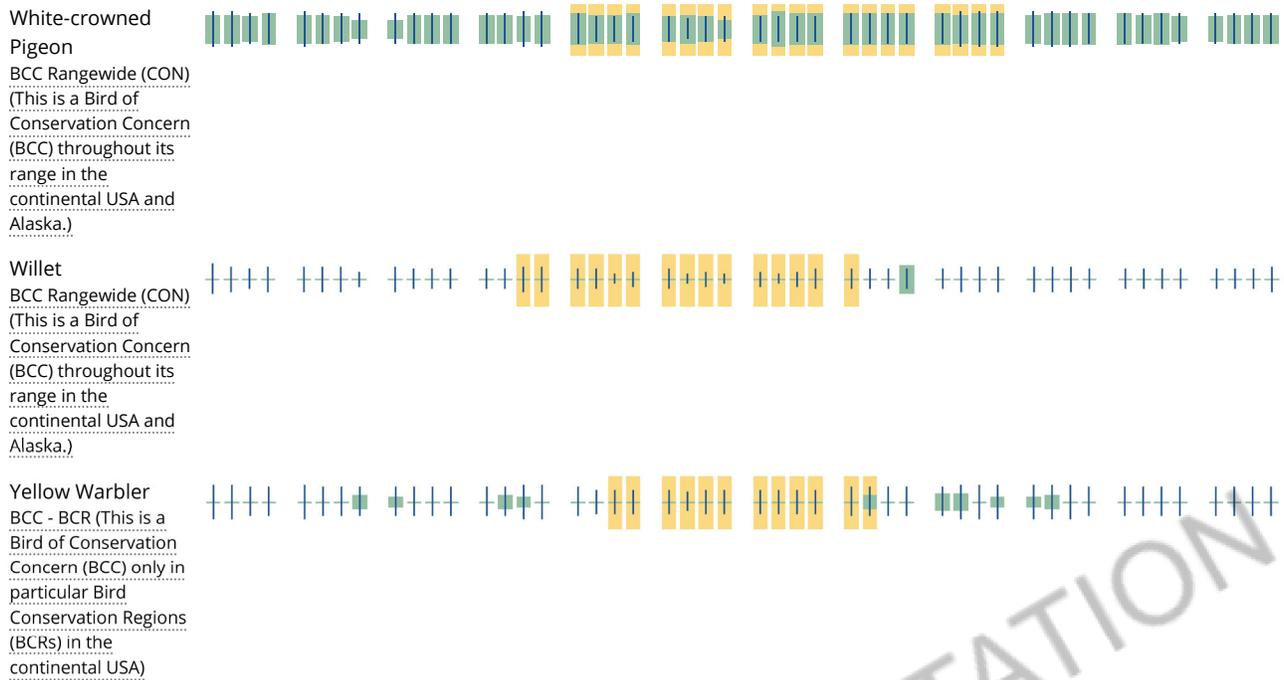
**Survey Timeframe**

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.









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 to 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.

NOT FOR CONSULTATION

# Marine mammals

Marine mammals are protected under the [Marine Mammal Protection Act](#). Some are also protected under the Endangered Species Act

<sup>1</sup> and the Convention on International Trade in Endangered Species of Wild Fauna and Flora<sup>2</sup>.

The responsibilities for the protection, conservation, and management of marine mammals are shared by the U.S. Fish and Wildlife Service [responsible for otters, walrus, polar bears, manatees, and dugongs] and NOAA Fisheries

<sup>3</sup> [responsible for seals, sea lions, whales, dolphins, and porpoises]. Marine mammals under the responsibility of NOAA Fisheries are **not** shown on this list; for additional information on those species please visit the [Marine Mammals](#) page of the NOAA Fisheries website.

The Marine Mammal Protection Act prohibits the take (to harass, hunt, capture, kill, or attempt to harass, hunt, capture or kill) of marine mammals and further coordination may be necessary for project evaluation. Please contact the U.S. Fish and Wildlife Service Field Office shown.

1. The [Endangered Species Act](#) (ESA) of 1973.
2. The [Convention on International Trade in Endangered Species of Wild Fauna and Flora](#) (CITES) is a treaty to ensure that international trade in plants and animals does not threaten their survival in the wild.
3. [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 marine mammals under the responsibility of the U.S. Fish and Wildlife Service are potentially affected by activities in this location:

NAME

West Indian Manatee *Trichechus manatus*  
<https://ecos.fws.gov/ecp/species/4469>

## 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](#)

LAKE

[L1UBHx](#)

RIVERINE

[R2UBHx](#)

[R5UBH](#)

[R5UBFx](#)

A full list 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 tubercid 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.

NOT FOR CONSULTATION

## **Appendix E**

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*Standard Manatee Conditions for In-Water Work*

## STANDARD MANATEE CONDITIONS FOR IN-WATER WORK

2011

The permittee shall comply with the following conditions intended to protect manatees from direct project effects:

- a. All personnel associated with the project shall be instructed about the presence of manatees and manatee speed zones, and the need to avoid collisions with and injury to manatees. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act, the Endangered Species Act, and the Florida Manatee Sanctuary Act.
- b. All vessels associated with the construction project shall operate at "Idle Speed/No Wake" at all times while in the immediate area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.
- c. Siltation or turbidity barriers shall be made of material in which manatees cannot become entangled, shall be properly secured, and shall be regularly monitored to avoid manatee entanglement or entrapment. Barriers must not impede manatee movement.
- d. All on-site project personnel are responsible for observing water-related activities for the presence of manatee(s). All in-water operations, including vessels, must be shutdown if a manatee(s) comes within 50 feet of the operation. Activities will not resume until the manatee(s) has moved beyond the 50-foot radius of the project operation, or until 30 minutes elapses if the manatee(s) has not reappeared within 50 feet of the operation. Animals must not be herded away or harassed into leaving.
- e. Any collision with or injury to a manatee shall be reported immediately to the Florida Fish and Wildlife Conservation Commission (FWC) Hotline at 1-888-404-3922. Collision and/or injury should also be reported to the U.S. Fish and Wildlife Service in Jacksonville (1-904-731-3336) for north Florida or in Vero Beach (1-772-562-3909) for south Florida, and emailed to FWC at [ImperiledSpecies@myFWC.com](mailto:ImperiledSpecies@myFWC.com).
- f. Temporary signs concerning manatees shall be posted prior to and during all in-water project activities. All signs are to be removed by the permittee upon completion of the project. Temporary signs that have already been approved for this use by the FWC must be used. One sign which reads *Caution: Boaters* must be posted. A second sign measuring at least 8½" by 11" explaining the requirements for "Idle Speed/No Wake" and the shut down of in-water operations must be posted in a location prominently visible to all personnel engaged in water-related activities. These signs can be viewed at [http://www.myfwc.com/WILDLIFEHABITATS/manatee\\_sign\\_vendors.htm](http://www.myfwc.com/WILDLIFEHABITATS/manatee_sign_vendors.htm). Questions concerning these signs can be forwarded to the email address listed above.

# CAUTION: MANATEE HABITAT

All project vessels

**IDLE SPEED / NO WAKE**

When a manatee is within 50 feet of work  
all in-water activities must

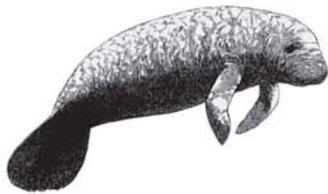
**SHUT DOWN**

Report any collision with or injury to a manatee:

**Wildlife Alert:**

**1-888-404-FWCC(3922)**

cell \*FWC or #FWC



## **Appendix F**

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*Standard Protection Measures for the Eastern Indigo Snake*

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

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

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

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

### **POSTER INFORMATION**

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

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

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

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

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

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

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

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

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

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

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

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

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

## **PRE-CONSTRUCTION ACTIVITIES**

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

## **DURING CONSTRUCTION ACTIVITIES**

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

## **POST CONSTRUCTION ACTIVITIES**

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

## **Appendix G**

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### *Surface Water Photographs*

## Environmental Site Photos

<b>Project Name/Description:</b>	SR 826 South PD&E
<b>Photo 1 of 8</b>	<b>Date of Site Visit:</b> November 13, 2018
	<b>County / State:</b> Miami-Dade, FL
	<b>Photo Direction:</b> <input checked="" type="checkbox"/> N <input type="checkbox"/> S <input type="checkbox"/> E <input checked="" type="checkbox"/> W
<b>Photos Taken by (Name, Company):</b>	Michael Breiner, AECOM
<p><b>Description / Comments:</b></p> <p>Typical view of canal crossing. This view is northwest of the east side of South Dixie Highway at the C-100A Canal.</p>	
<b>Photo 2 of 8</b>	<b>Date of Site Visit:</b> November 13, 2018
	<b>County / State:</b> Miami-Dade, FL
	<b>Photo Direction:</b> <input checked="" type="checkbox"/> N <input type="checkbox"/> S <input type="checkbox"/> E <input type="checkbox"/> W
<b>Photos Taken by (Name, Company):</b>	Michael Breiner, AECOM
<p><b>Description / Comments:</b></p> <p>Typical view of canal crossing. This view is north of the east side of SR 826 at the C-2 Canal.</p>	

## Environmental Site Photos

<b>Project Name/Description:</b>	SR 826 South PD&E
<b>Photo 3 of 8</b>	<b>Date of Site Visit:</b> November 13, 2018
	<b>County / State:</b> Miami-Dade, FL
	<b>Photo Direction:</b> <input type="checkbox"/> N <input type="checkbox"/> S <input checked="" type="checkbox"/> E <input type="checkbox"/> W
<b>Photos Taken by (Name, Company):</b>	Michael Breiner, AECOM
<p><b>Description / Comments:</b></p> <p>View east of lake east of SR 826 and north of SW 56<sup>th</sup> Street</p>	
<b>Photo 4 of 8</b>	<b>Date of Site Visit:</b> November 14, 2018
	<b>County / State:</b> Miami-Dade, FL
	<b>Photo Direction:</b> <input checked="" type="checkbox"/> N <input type="checkbox"/> S <input type="checkbox"/> E <input type="checkbox"/> W
<b>Photos Taken by (Name, Company):</b>	Michael Breiner, AECOM
<p><b>Description / Comments:</b></p> <p>Typical view of canal crossing. This view is north of the east side of north-bound SR 826 off-ramp at the C-3 Canal.</p>	

## Environmental Site Photos

<b>Project Name/Description:</b>	SR 826 South PD&E
<b>Photo 5 of 8</b>	<b>Date of Site Visit:</b> November 14, 2018
	<b>County / State:</b> Miami-Dade, FL
	<b>Photo Direction:</b> <input checked="" type="checkbox"/> N <input type="checkbox"/> S <input type="checkbox"/> E <input type="checkbox"/> W
<b>Photos Taken by (Name, Company):</b>	Michael Breiner, AECOM
<p><b>Description / Comments:</b></p> <p>Typical view of an open-water stormwater retention feature within the infield of an intersection with SR 826. This is a view south at the intersection of SR 826 and Tamiami Trail (SW 8<sup>th</sup> Street).</p>	
<b>Photo 6 of 8</b>	<b>Date of Site Visit:</b> November 15, 2018
	<b>County / State:</b> Miami-Dade, FL
	<b>Photo Direction:</b> <input type="checkbox"/> N <input type="checkbox"/> S <input type="checkbox"/> E <input checked="" type="checkbox"/> W
<b>Photos Taken by (Name, Company):</b>	Michael Breiner, AECOM
<p><b>Description / Comments:</b></p> <p>Typical view of a stormwater drainage detention/retention feature within the intersection of SR 826 and SR 836. This is a view west from the eastern extent of feature.</p>	

## Environmental Site Photos

<b>Project Name/Description:</b>	SR 826 South PD&E
<b>Photo 7 of 8</b>	<b>Date of Site Visit:</b> November 15, 2018
	<b>County / State:</b> Miami-Dade, FL
	<b>Photo Direction:</b> <input checked="" type="checkbox"/> N <input type="checkbox"/> S <input type="checkbox"/> E <input type="checkbox"/> W
<b>Photos Taken by (Name, Company):</b>	Michael Breiner, AECOM
<p><b>Description / Comments:</b></p> <p>Typical view of canal adjacent to SR 826. This view north of the east side of north-bound SR 826 at the North Line Canal in the intersection with SR 836.</p>	
<b>Photo 8 of 8</b>	<b>Date of Site Visit:</b> November 15, 2018
	<b>County / State:</b> Miami-Dade, FL
	<b>Photo Direction:</b> <input type="checkbox"/> N <input type="checkbox"/> S <input type="checkbox"/> E <input checked="" type="checkbox"/> W
<b>Photos Taken by (Name, Company):</b>	Michael Breiner, AECOM
<p><b>Description / Comments:</b></p> <p>Typical view of a stormwater drainage detention/retention feature within the intersection of SR 826 and SR 836. This is a view west on the east side of SR 826.</p>	

## **Appendix H**

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### *Interagency Meeting Minutes*

## Meeting Notes

**To:** Attendees  
File  
**From:** Keith Stannard, AECOM  
**Date:** December 7, 2018  
**Subject:** SR 826 Express Lanes PD&E Study – SFWMD Right of Way Department Meeting

### Meeting Attendees

Name	Company	Phone	E-mail	Attended Y/N
Beverly Miller	SFWMD	561-682-6979	bmiller@sfwmd.gov	Y
Keith Stannard	AECOM	305-514-2464	Keith.Stannard@aecom.com	Y
Juan Garcia	AECOM	305-514-2443	Juan.C.Garcia@aecom.com	Y
Jeff Coffin	TCG	954-777-0044	Jcoffin@corradino.com	Y
Mike Ciscar	TCG	305-594-0735	MCiscar@corradino.com	Y
Ryan Solis-Rios	TCG	954-777-0044	Rsolis-rios@corradino.com	Y

### Meeting Purpose

The purpose of this meeting was to discuss the proposed project design alternative improvements within the rights-of-way of the C-4, C-2 and C-100A canals owned and maintained by the South Florida Water Management District (SFWMD). Beverly Miller represented the SFWMD Right of Way Dept. at the meeting.

### Items Discussed

- The project design alternatives were introduced to SFWMD by TCG and AECOM.
- Proposed improvements within the C-4 (Tamiami) Canal, the C-2 (Snapper Creek) Canal, and the C-100A Canal were discussed.
- A new ramp from SB SR 826 to WB SW 8<sup>th</sup> Street coming from the CD system to the north is being proposed over the C-4 Canal. The existing ramp at this location will be eliminated (removed).
- Beverly requested a zoomed in design schematic for the area (TCG will send a follow up email with the design detail). The vertical clearance of the new ramp was discussed. The clearance will not be lower than the existing ramp clearance. The ramp will need to be elevated enough

for SFWMD equipment to access an existing staging area in NW quadrant of the interchange. TCG to look into moving C-4 ramp further east to allow more room for SFWMD

- TCG requested the original design configuration of the waterway from SFWMD (Beverly will send in a follow up email).
- The SFWMD asked if there was any encroachment into SFWMD right-of-way along SW 8th Street. TCG advised that there may be minor widening for merge lane but it is expected to be within FDOT right-of-way. The PD&E study will include 3 lanes along SW 8th Street and no encroachment into C-4 canal. The design will account for a future canal crossing being proposed by the County at SW 82nd Avenue, west of SR 826 (not a part of the PD&E Study). TCG will also look into removing any canal encroachments along SW 8th Street west of SR 826, after the new relocated ramp merges with NW 8th Street.
- Beverly will follow up with the design team to let them know if the SFWMD will require a bridge hydraulics report during the permitting process.
- The design alternatives include approximately 20 feet of new widening over the C-2 Canal. Additional piles will be needed for the widening. They will be aligned with existing piles.
- Existing canal permits will be provided by SFWMD to FDOT at the time of permitting – work will require modifications of existing Right-of-Way Permits.
- TCG explained that an existing box culvert at the C-100A canal beneath US 1 would need to be extended to accommodate the roadway widening. It may need to be replaced.
- Dredging may be needed under bridges/widening to meet original canal design.
- No reduction in flow area is anticipated for any of the canals.

## Meeting Notes

**To:** Attendees  
File  
**From:** Keith Stannard, AECOM  
**Date:** January 11, 2019  
**Subject:** SR 826 Express Lanes PD&E Study – Miami-Dade County DRER/DERM Water Control Meeting

### Meeting Attendees

Name	Company	Phone	E-mail	Attended Y/N
Maria Molina	DERM	305-372-6769	Molinm@miamidade.gov	Y
Jaime Lopez	RS&H	305-388-0234	Jamie.lopez@rsandh.com	Y
Maria Perdomo	FDOT	305-640-7186	Maria.perdomo@dot.state.fl.us	Y
Rosario Cardenas	RS&H	305-428-3223	Rosario.cardenas@rsandh.com	Y
Isaiah Mosley	AECOM	305-514-2468	Isaiah.mosley@aecom.com	Y
Keith Stannard	AECOM	305-514-2464	Keith.stannard@aecom.com	Y
Jeff Coffin	TCG	954-777-0044	Jcoffin@corradino.com	Y
Mike Ciscar	TCG	305-594-0735	MCiscar@corradino.com	Call In
Ryan Solis-Rios	TCG	954-777-0044	Rsolis-rios@corradino.com	Call In

### Meeting Purpose

The purpose of this meeting was to discuss the proposed project design alternative improvements within the rights-of-way of the Coral Gables Canal and the North Line Canal owned and maintained by the Miami-Dade County Department of Regulatory and Economic Resources / Department of Environmental Resources Management (DERM). Maria Molina represented the DERM Water Control Dept. at the meeting.

### Items Discussed

- The project design alternatives were introduced to DERM by TCG, RS&H and AECOM.
- It was discussed that the project is not expected to interfere with existing wellfields.
- TCG explained that sections of the Coral Gables Canal will need to be culverted as a part of the project to accommodate the roadway improvements:

- SB off ramp from SR 826 to SW 24<sup>th</sup> Street/Coral Way: A portion of the SB off-ramp will be widened over the existing Coral Gables Canal by approximately 200-250 feet. This portion will be culverted to accommodate the widened roadway.
  - East side of SR 826 from the hypothetical SW 23<sup>rd</sup> Street to 16<sup>th</sup> Terrace: This area will be culverted for a distance of approximately 1,500-1,600 feet.
  - NB off-ramp from SR 826 to SW 8<sup>th</sup> Street (Tamiami Trail): This area will be culverted for a distance of approximately 700 feet.
- In addition, a new NB off-ramp is proposed to cross the North Line Canal.
  - Maria Molina advised that DERM will need as-builts for the North Line Canal from the FDOT since the FDOT recently modified the canal alignment as part of the SR 826/SR 836 Interchange Improvements project. The as-builts are needed so DERM can assess how the canal will be affected by the proposed improvements (culverting).
  - Maria Molina also stated that she is waiting on the canal easement to be deeded back to the County from the FDOT (North Line Canal). Water Control would like this to occur prior to application submittal for any modifications to the canal. The County legally does not have flow rights in the canal until the deed is transferred back to the County. However, the County is currently maintaining the waterway.
  - Maria Molina asked if any new pilings will be placed within the County waterways. TCG responded no.
  - Maria Molina advised a Class III Permit will be needed for each encroachment within County Canal right-of-way. She also stated that the County Modeling Dept. will need to review and approve the proposals prior to the Water Control Department approval (flow hydraulics report will need to be prepared and submitted to the county as part of the class III application process for each culvert). A separate Class III application will be needed for each culverted section.
  - The project includes new impervious surface due to the widening. ICPR Modeling will be used to determine the drainage requirements.
  - Maria Molina requested that the drainage report be submitted with the Class III Permit applications, so the County Modeling folks can review the calculations. County Modeling will determine if Water Control can approve culverting the sections of the canal.
  - Maria Molina advised that she can not review any preliminary information without submittal of a Class III application package. She also asked TCG if they can shorten the culverts as much as possible within the Coral Gables Canal.
  - TCG advised that the culvert size may be approximately 10' X 6'
  - Keith Stannard added that we will try to submit the applications as soon as possible.
  - Maria Molina asked about the disposition of the docks located on the canal for homeowners. She added that they were not installed legally. Jaime advised that the docks will need to be removed.
  - Rosario added that the project includes a discharge to Miller Lake, outfalls to Tropical Park and a private lake/borrow pit but the flow volumes will not increase.

- Maria Molina reiterated for FDOT to submit separate applications for each canal impact as best as possible since permit issuance can be faster this way. Also, as part of the packages, ask to waive the application fee on behalf of FDOT.

# Minutes

<b>Meeting name</b> FDOT/SFWMD/USACE Interagency Meeting	<b>Subject</b> SR 826/Palmetto Expressway Express Lanes PD&E Study from US 1 to SR 836/Dolphin Expressway	<b>Attendees</b> Huy Tran, SFWMD; Portia Caldwell, SFWMD; Mark Tamblyn, USACE; Joe Marquez, SFWMD; Vladimir Jeune, SFWMD; Jacquelyn DeAngelo, FDOT; Ryan Solis-Rios, TCG; Aylin Costa, RS&H; Zack Gross, RS&H; Chris Jackson, RS&H; Pedro Pelegrin, RS&H; Juan Garcia, AECOM; Keith Stannard, AECOM; Daniel Chomin-Virden, AECOM
<b>Meeting date</b> July 25, 2019	<b>Location</b> SFWMD West Palm Beach Offices	
<b>Project number</b> FM 432639-1-22-01	<b>Prepared by</b> Keith Stannard, AECOM	

The purpose of the meeting was to initiate early coordination with the South Florida Water Management District Surface Water Management and Natural Resources Departments to receive preliminary feedback on the proposed viable build alternatives developed as part of the PD&E Study.

The project was introduced by the PD&E Consultant Project Manager, Ryan Soils-Rios. Ryan explained the purpose and need of the project (improving the highway and interchanges capacity, operations, and safety) and how it ties in to the previously approved and/or constructed Express Lanes projects throughout the County. He mentioned that the project extends approximately seven miles along SR 826 from US-1 to SR 836 and that the project includes ten interchanges, which eight of them provide connection to major arterial/collector facilities (roadways). The other two are major system-to-system interchanges with SR 874 and SR 836.

The remainder of the meeting focused on a discussion of the existing and proposed conceptual drainage plan and the environmental impacts.

## Drainage

Aylin Costa discussed the following information related to drainage:

- Existing Roadway and Drainage Conditions
  - SR 826, between US-1 and SR 874, consists primarily of six travel lanes (three lanes in each direction). Between SR 874 and SR 836, the corridor consists primarily of ten travel lanes (five lanes in each direction) and two undesignated High Occupancy Vehicle (HOV) lanes (one in each direction).
  - Existing stormwater management facilities (SMFs) consists of dry and wet detention and retention ponds/linear swales, French Drains, and Slab Covered Trenches.
  - Water quality treatment and runoff attenuated is provided for the existing built condition and was previously authorized under ERP #s: 13-00791-S, 13-02686-P, 13-02434-P, 13-01782-P, 13-02339-P, 13-01378-P, and 13-04284-P.
- Proposed Roadway and Drainage Conditions

- The PD&E study is proposing to add one express lane in each direction with a direct busway connection along SR 826, from US-1 to SR 874. Between SR 874 and SR 836, there are two proposed express lanes (with direct connections from/to SR 874 and SR 836).
- The proposed stormwater management facilities are being designed to conform to SFWMD water quality treatment volume criteria and water quantity attenuation criteria, while maintaining pre-development peak stages at critical nodes with offsite connections.
- Proposed stormwater management facilities for this project include dry and wet detention and retention ponds/linear swales, French Drains, and previously authorized Slab Covered Trenches to remain, all contained within existing and proposed right-of-way.
- Mainline widening, perimeter road, and ramp bridges are proposed over canal rights-of-way for the C-100A, C-2, and C-4 canals, which are owned/maintained by the SFWMD, as well as the Coral Gables Canal (C-3) and the North Line Canal, which are owned/maintained by Miami-Dade County.

#### C-100A Canal

- US-1 southbound and northbound lanes cross the canal over an existing 9 feet by 9 feet box culvert with 6 feet by 6 feet gate (i.e., S-120), with invert elevation of 3.0 feet NGVD.
- Busway bridge crossing is immediately upstream of S-120.
- Proposed improvements require widening of US-1 towards the median separating US-1 and the busway and relocation of the S-120 structure designed for 1-10 year flood protection.

#### C-2 Canal (Snapper Creek)

- Existing bridges for SR 826 Mainline/Ramps and SW 77th Ave over Snapper Creek Canal will be widening/reconstructed.

#### C-3 Canal (Coral Gables Canal)

- Existing northbound off-ramp bridge at SW 24th Street/ Coral Way will be widened.
- Existing culvert along southbound off-ramp at SW 24th Street/Coral Way will be extended south and west along the Coral Gables Ditch.
- Proposed SR-826 northbound lanes encroach C-3 Canal R/W and will require sheet pile bulkhead walls and culvert/bridge culverts from south of SW 22nd Street to SW 16th Street and from south of SW 10th Street to the confluence point with the C-4 Canal including replacement of the SW 8th Street/Tamiami Trail Bridge over C-3.

#### C-4 Canal (Tamiami)

- Existing bridges for SR 826 mainline will be widened.
- Existing bridges for southbound off-ramps will be relocated/reconstructed.
- Proposed SW 8th Street Tamiami Trail westbound lanes re-alignment may require sheet pile bulkhead walls.

#### North Line Canal

- Proposed third level flyover ramps.
- BHRs with 2D HEC-RAS Models for Pre, Post, and Temporary conditions for each the referenced encroachments using flows and headwater/tailwater conditions from the C-4 Flood Control Operations Modeling Project, developed for SFWMD by Intera (2011) will be prepared. The C-4 Flood Control Model includes latest available flow data and surface water profiles for the C-2 Canal, C-3 Canal, C-4 Canal and Northline Canal for the 10 year, 25 year, and 100 year storm events and supersede the SFWMD/USACE Historic Conditions and General Design Memorandums.

No adverse comments were received from the regulatory agencies.

### **Natural Resources**

Keith Stannard discussed the following information related to impacts to natural resources:

- No impacts to vegetated wetlands will occur as a result of the proposed project as vegetated wetland habitat does not exist within the project limits.
- 34 surface water features will be impacted by the proposed improvements. These features consist of stormwater swales, dry and wet retention areas, ditches, and canals. The preliminary impact quantities per each alternative were discussed and handed out in the meeting along with a series of maps showing the locations of these features along the project corridor.
- The project lies within the core foraging area (CFA) of active wood stork nests. Any lost CFA within the project limits is anticipated to be compensated in full with the construction of the new stormwater facilities. The quantities/calculations and discussion related to wood stork CFA will be submitted to the agencies as part of the permitting process.
- No adverse impacts to threatened and endangered species (MANLAA finding for wood stork, West Indian manatee, Florida bonneted bat) are anticipated to occur as a result of the project.
- A bald eagle nest is located in close proximity to the project corridor (near SR 874/SR 826 Interchange); however, no impacts to the eagle's nest are anticipated to occur.

No adverse comments were received from the regulatory agencies.

### **Discussion of Permitting Approach**

- The project team also discussed the permitting approach for the project and mentioned that the project is likely to proceed as Design-Build:
  - The project will require the following permits:
    - SFWMD Conceptual Environmental Resource Permit for entire corridor to supersede existing historic permits (SFWMD and USACE agreed to this approach). The Conceptual ERP will be modified by the Design-Build team during the final design process.
    - SFWMD Right of Way Occupancy Permits/Modifications will be applied for.
      - C-100A, C-2 (Snapper Creek Canal), C-3 (Coral Gables Canal) and C-4 (Tamiami Canal),
    - USACE Section 404 Individual Permit will be applied for.
      - USACE Section 408 Approval will be applied for the C-2 (Snapper Creek Canal), C-3 (Coral Gables Canal) and C-4 (Tamiami Canal).
    - Miami-Dade County DRER Class III Right of Way Permits will be applied for work within the rights-of-way of the Coral Gables Canal and North Line Canal.
  - In addition, permits for geotechnical work within the canals will need to be applied for early in the design process.

The USACE advised to submit for the Section 408 approvals as early in the process as possible.

No follow-up action items were identified from the meeting.



# Agenda

<b>Meeting name</b> July 2019 Interagency Meeting	<b>Subject</b> SR 826/Palmetto Expressway Express Lanes Project PD&E Study (FM 432639-1-22-01)
<b>Meeting date</b> July 25, 2019	<b>Time</b> 11:00 AM
<b>Location</b> SFWMD West Palm Beach Offices	<b>Prepared by</b> Keith Stannard

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## SR 826/Palmetto Expressway Express Lanes Project PD&E Study (FM 432639-1-22-01)

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- Project Introduction/Background
  - Purpose and Needs
- Discussion of Proposed Design Build Alternatives
- Discussion of Existing Roadway Drainage Conditions
  - Existing conditions previously authorized under ERP #s: 13-00791-S, 13-02686-P, 13-02434-P, 13-01782-P, 13-02339-P, 13-01378-P, and 13-04284-P
- Discussion of Proposed Roadway Drainage Concepts
  - Designed to conform to SFWMD water quality treatment volume criteria and water quantity attenuation criteria, while maintaining pre-development peak stages at critical nodes with offsite connections
- Discussion of Proposed Impacts to Natural Resources
  - No impacts to vegetated wetland habitat
  - 34 surface water features will be impacted (stormwater swales/retention areas and canals)
  - No adverse impacts to threatened and endangered species (MANLAA finding for wood stork, West Indian manatee, Florida bonneted bat)
- Discussion of Permitting Approach
  - SFWMD Conceptual Environmental Resource Permit for entire corridor to supersede existing historic permits
  - SFWMD Right of Way Occupancy Permits/Modifications
    - C-100A, C-2 (Snapper Creek Canal), C-3 (Coral Gables Canal) and C-4 (Tamiami Canal)
  - USACE Section 404 Individual Permit
  - USACE Section 408 Approval for C-2 (Snapper Creek Canal), C-3 (Coral Gables Canal) and C-4 (Tamiami Canal)
  - Miami-Dade County DRER Class III Right of Way Permit for Coral Gables Canal and North Line Canal
- Other items?