



ENDANGERED SPECIES BIOLOGICAL ASSESSMENT

I-595 (SR-862) PROJECT DEVELOPMENT & ENVIRONMENT STUDY

FM No. 409354-1-22-01
FAP No. 5951 539 I
From the I-75 Interchange West of 136 Avenue
To the I-95 Interchange
Broward County, Florida



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January 24, 2006





ENDANGERED SPECIES BIOLOGICAL ASSESSMENT

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1.0 INTRODUCTION

The Florida Department of Transportation (FDOT) is conducting a Project Development and Environment (PD&E) Study for proposed improvements to the I-595 corridor in central Broward County, Florida. The PD&E Study limits extend from the I-75/Sawgrass Expressway interchange (Mile Post 0.592) west of 136th Avenue to the I-95 interchange (Mile Post 10.407) for a total project length of approximately 10 miles. Figure 1-1 illustrates the location and limits of the project.

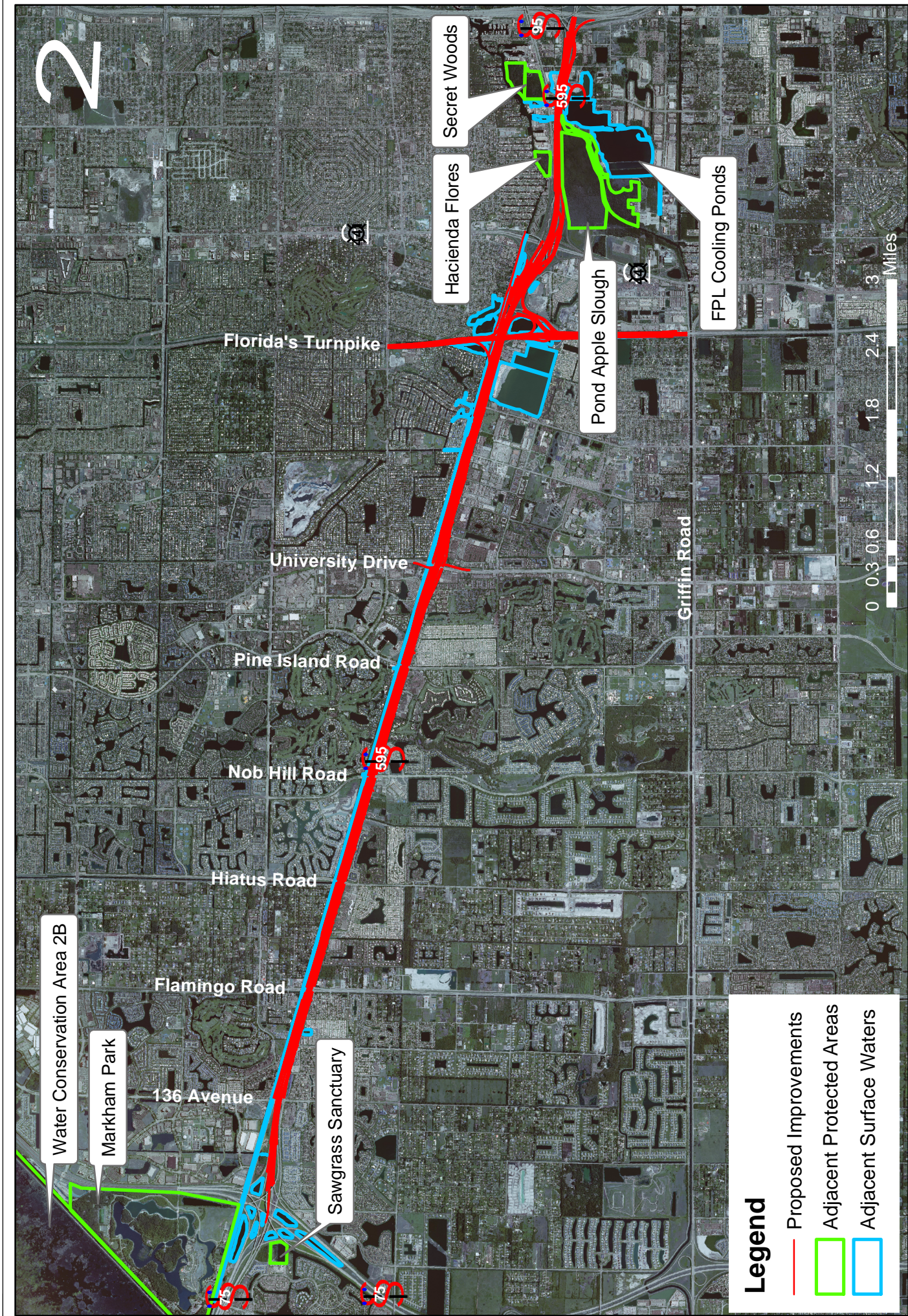
The purpose of this report is to present the findings of the Endangered Species Biological Assessment (ESBA) for the proposed project and to meet the requirements of Section 7 of the Endangered Species Act (ESA) of 1973, as amended. The ESA requires federal agencies, in consultation and with the assistance of the Secretaries of the Departments of Interior and Commerce, to insure that their actions are not likely to jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of critical habitat of such species.

Under the law, the Secretary of the U.S. Department of Interior, acting through the Fish and Wildlife Service (FWS) and the Secretary of the U.S. Department of Commerce, acting through the National Marine Fisheries Service (NMFS), have broad powers to protect and conserve all forms of wildlife, plants, and marine life they find in serious jeopardy. This report will be sent to the FWS and NMFS for their review and comments.

The potential involvement with listed species and critical habitat was determined through a review of existing data and literature, several field surveys, and coordination with the FWS, NMFS, Florida Fish and Wildlife Conservation Commission (FWC), Broward County Department of Planning and Environmental Protection (now Broward County Environmental Protection Department – BCEPD) and other agencies. Some of the literature and data also used included:

- ◆ FWS South Florida Field Office's *Listed Species in Broward County* on their website, dated June, 2000, and confirmed current by contacting the FWS South Florida Field Office in October, 2005.
- ◆ FWS's *Federally Listed Endangered and Threatened Species and Candidates for Federal Listing in South Florida* (December 7, 1999),
- ◆ FWS's *South Florida Multi-Species Recovery Plan* (May 18, 1999),
- ◆ FWC's *Florida's Endangered Species, Threatened Species and Species of Special Concern* (January 29, 2004),
- ◆ Florida Natural Areas Inventory (FNAI)'s *Tracking List for Broward County* (updated April 2005),
- ◆ FNAI's *Online Field Guide to Rare Plants and Animals of Florida* (2000),
- ◆ FNAI's *GIS Element Occurrence* (December 1999),





I-595 PD&E STUDY
 ENDANGERED SPECIES BIO ASSESSMENT
 PROJECT LOCATION MAP

STATE OF FLORIDA
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- ◆ FWC's GIS data for waterbird colonies (1999), wildlife observations (2003), Florida panther telemetry data (2003), and bald eagle nests (2004),
- ◆ Ray Ashton's *Rare and Endangered Biota of Florida* (1992),
- ◆ *Pond Apple Slough Species List* (May 1, 1996) obtained from the BCEPD.
- ◆ Broward County Parks and Recreation Department (BCPRD)'s *Pond Apple Slough Restoration Project Management Plan* (December 26, 1996).
- ◆ FDOT's Final Plans for the Cypress Creek Park and Ride Lot Mitigation at Pond Apple Slough (October 21, 1995).

The agency coordination included:

- ◆ October 21, 2004, a meeting with the US Environmental Protection Agency (EPA), Federal Highway Administration (FHWA), South Florida Water Management District (SFWMD), BCEPD, and BCPRD,
- ◆ On December 10, 2004, a meeting with the SFWMD, ACOE, and EPA,
- ◆ On January 28, 2005, a field meeting with an NMFS Fisheries Biologist at Pond Apple Slough to discuss Essential Fish Habitat and NMFS listed species concerns,
- ◆ On February 9, 2005, a meeting with BCPRD to discuss Pond Apple Slough issues,
- ◆ On March 23, 2005, a meeting with BCEPD to review their Pond Apple Slough files,
- ◆ Public workshops on March 30 and March 31, 2004 were attended by BCEPD,
- ◆ Public workshops on April 13 and April 14, 2005 were attended by BCEPD and a NMFS Fisheries Biologist,
- ◆ On June 28, 2005, a meeting with the US Army Corps of Engineers (ACOE), FWS, NMFS, U.S. Coast Guard, FWC, BCEPD, and BCPRD. During the meeting, a FWC Biologist noted that American crocodiles have been recorded at the FPL Cooling Ponds immediately east of the South Fork New River, and in the Water Conservation Area at Holiday Park, located at the western terminus of Griffin Road,
- ◆ On July 6, 2005, the FDOT presented the project to FHWA.

Geographic Information System (GIS) datasets were used to identify known locations of listed species and potential listed species habitat occurring within or near the project corridor and field surveys were conducted between August 2003 and June 2005 to determine if the project corridor contains habitat for the previously identified listed species and to determine if any previously unidentified listed species occur in the area. The surveys also included meandering transects within Pond Apple Slough Natural Area and the FDOT limited access right of way for I-595 (LA ROW) under its viaduct over the South Fork of the New River on June 11, 2004, August 26, 2004, and January 28, 2005, November 9, 2005, and a kayak survey on July 13, 2004.





ENDANGERED SPECIES BIOLOGICAL ASSESSMENT

No Federally-listed species were recorded during the field surveys conducted for this study. Discussion of potential involvement with Federally-listed species that have been recorded by others in Broward County is provided in Section 4.0.





2.0 PROJECT DESCRIPTION

The western study limit is the I-75/Sawgrass Expressway interchange and the eastern study limit is the I-95 interchange. The total project length is approximately ten miles. I-595 is currently a six general purpose lane, limited access facility with interchanges I-75/Sawgrass Expressway, SW 136th Avenue, Flamingo Road (SR 823), Hiatus Road, Nob Hill Road, Pine Island Road, University Drive (SR 817), Davie Road, Florida's Turnpike (SR 91), and US 441 (SR 7). Also included in the study limits is SR 84, which has two westbound lanes immediately north of I-595 and two eastbound lanes immediately south of I-595.

The proposed improvements being studied include:

- ◆ Reversible lanes serving express traffic from I-75 to east of SR 7
- ◆ Continuous connection of SR 84 between Davie Road and SR 7
- ◆ Collector-Distributor (C-D) system between Davie Road and I-95
- ◆ Modifications to the I-595/Florida's Turnpike interchange
- ◆ Braided interchange ramps to eliminate mainline weaving segments
- ◆ Bypass systems that combine two interchanges of traffic on one ramp to reduce the number of entrance/exit points along mainline
- ◆ Two-lane off-ramps, as needed
- ◆ Curb-and-gutter systems at select locations for stormwater collection
- ◆ Continuous shoulders for that provide bicycle areas along the outside SR-84 travel lanes
- ◆ Shared-use, bi-directional path located along the outside of eastbound SR 84, between SW 136th Avenue and Davie Road.
- ◆ Transit envelope, for a system such as a commuter rail, integrated into the corridor (with details of the concept to be developed in a separate study)

Additional details regarding the proposed improvements are available in the Preliminary Engineering Report prepared for this study. This study is a continuation of the I-95/I-595 Multimodal Transportation Corridor Master Plan Study completed in March 2003. The Master Plan included a Tier One Alternative Corridor Study and evaluated fifteen different build alternatives and produced a Locally Preferred Alternative (LPA) based on interagency coordination and public comment received at a Public Hearing conducted on November 16, 2000. The LPA was adopted by the Broward County Metropolitan Planning Organization (MPO) on January 7, 2003 and subsequently approved by the Federal Highway Administration (FHWA).





The objective of the I-595 PD&E Study is to re-examine the original justifications for the Master Plan LPA and accommodate a new design year of 2032, which adds 14 years of additional traffic growth to the corridor. Based on the updated conditions in the project area, four design alternatives were developed that all maintained the basic design components of the Master Plan LPA. Two alternatives were eliminated based on a comparative analysis resulting in further consideration of Alternatives 1B and 2A during the PD&E Study.

The typical sections proposed for Alternatives 1B and 2A will each provide six 12-foot wide general purpose lanes (three per direction) and two 12-foot auxiliary lanes between interchanges. The I-595 mainline will have 10-foot paved shoulders on both the inside and outside.

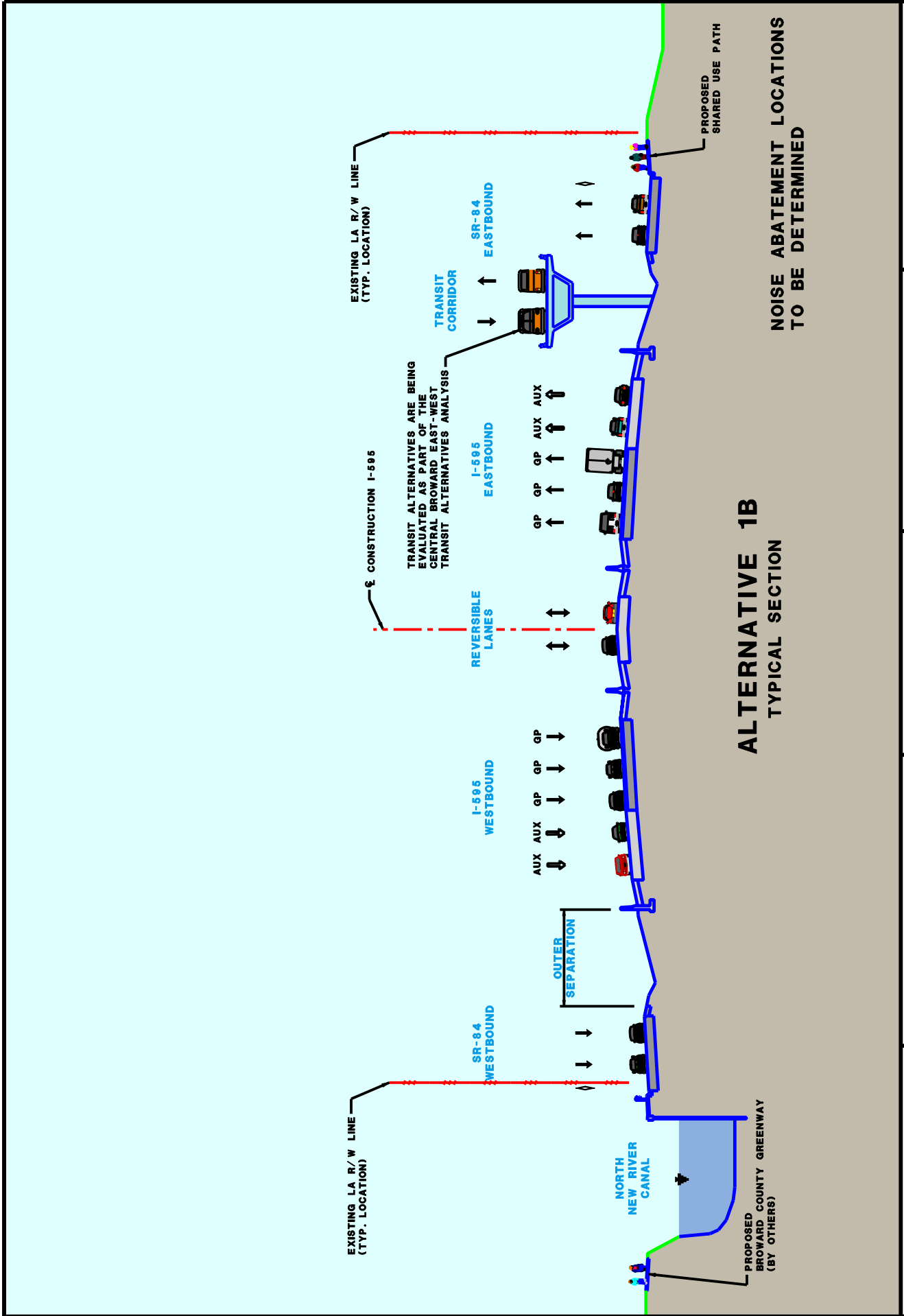
SR 84 will have two 12-foot lanes with 4-foot paved shoulders to the inside and to the outside. Type F curb and gutter and 6 feet to 12 feet of shared-use sidewalk/bicycle path will be included on the outside.

The configuration of the reversible lanes features is the primary way in which the two alternatives differ.

- ◆ **Alternative 1B** proposes that the reversible lanes be constructed at grade level within the I-595 median, separated from the mainline by median barrier walls. Under this design concept, there will be two 12-foot reversible lanes with 10-foot shoulders.
- ◆ **Alternative 2A** proposes that the reversible lanes be carried on a bridge structure that is 59 feet wide. It, too, will be located within the I-595 median. In Alternative 2A, there will be three 12-foot reversible lanes with 10-foot shoulders. Alternative 2A will also provide direct connect ramps from the reversible lanes to the Turnpike median.

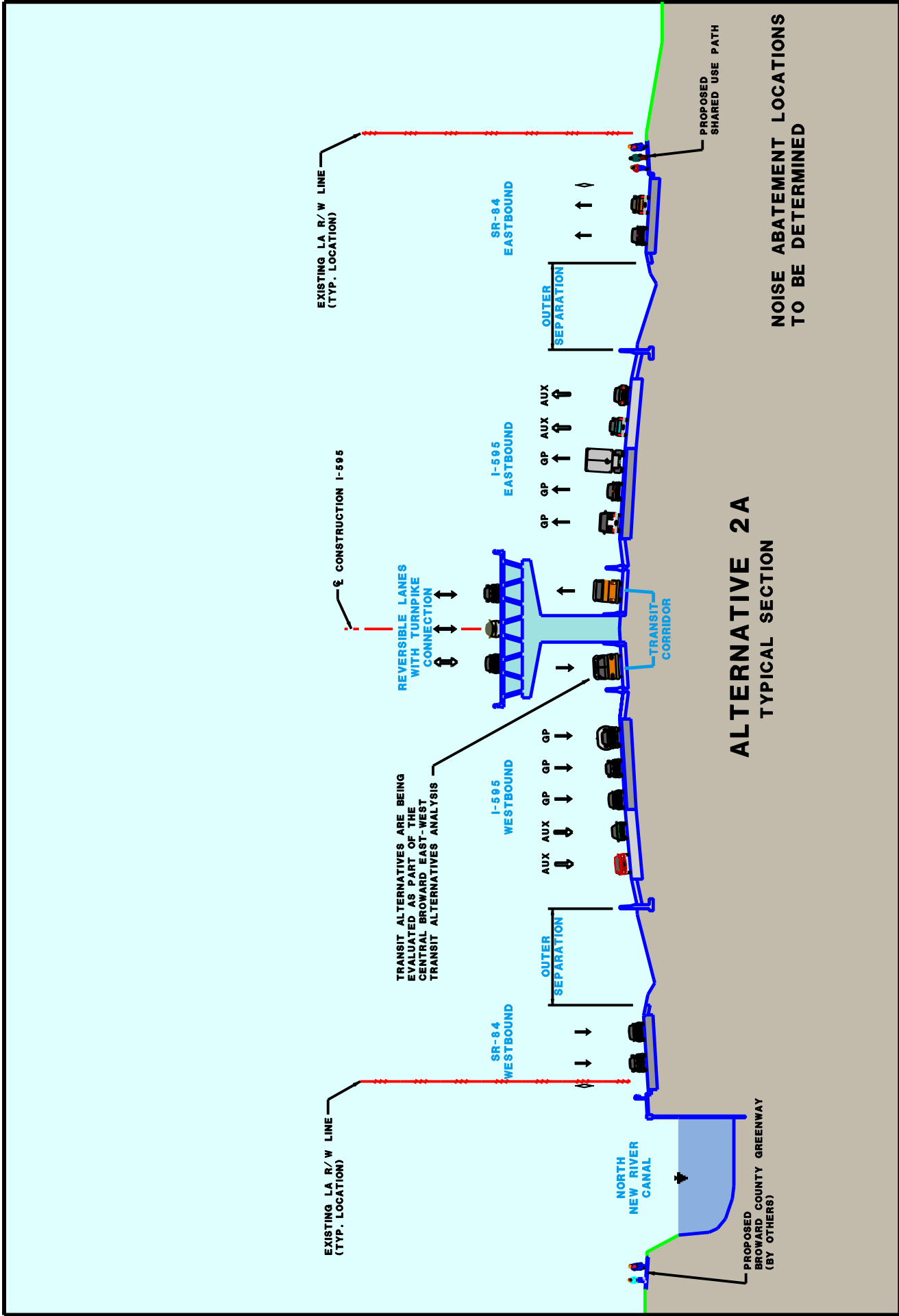
The proposed typical sections for **Alternatives 1B** and **2A** are shown in Figures 2-1 and 2-2. Both alternatives have the same potential involvement with listed species.





**ALTERNATIVE 1B
TYPICAL SECTION**

**NOISE ABATEMENT LOCATIONS
TO BE DETERMINED**





3.0 PROJECT NEED

The various improvements that comprise this project address a number of statewide, regional and corridor-specific needs. A detailed discussion of the project justification is provided in Preliminary Engineering Report. Statewide needs can be summarized as enhancing safe operation, expanding the service life of the corridor, boosting state and regional economic competitiveness in the global market, and ensuring that the qualities of life that are of value to Florida citizens are sustained. Regional needs include improving system linkages and modal interrelationships, accommodating transportation and social demands, and supporting economic development.

Within Miami-Dade, Broward and Palm Beach Counties, the I-595 corridor is the only east-west freeway providing connections to all of the region's principal north-south corridors, as well as freeways beyond the region's boundaries. West of the western study limit, I-595 becomes I-75, which provides a direct connection to the Gulf Coast. This linkage is important for many reasons since I-595 plays an important role in the regional, statewide and national distribution of products. I-595 is also a critical link between other components of the Florida Intrastate Highway System network, such as US 27 (west of the project corridor), Sawgrass Expressway, I-75, Florida's Turnpike and I-95. It is also an important link to Strategic Intermodal System network components for other travel modes such as freight and passenger rail, port, aviation and intercity transit. I-595 is also an important emergency evacuation route for Southeast Florida.

Corridor specific needs include reductions of incident-related delay and design solutions for the existing interchange design deficiencies, and unsafe weaving and merging conditions within the project corridor. Broward County MPO's 2030 Long-Range Transportation Plan includes all the elements of the proposed project.





4.0 FEDERALLY LISTED SPECIES

Based on the FWS and NMFS lists of Federally-listed species that have been recorded in Broward County, omitting the plant and sea turtle species that would not occur within the project corridor, potential involvement with the following species was assessed:

| Common Name | Scientific Name | Potential Occurrence | Status | |
|----------------------|---------------------------------------|----------------------|---------|-----|
| | | | FWS | FWC |
| American alligator | <i>Alligator mississippiensis</i> | Moderate | T (S/A) | SSC |
| American crocodile | <i>Crocodylus acutus</i> | Low | E | E |
| Eastern indigo snake | <i>Drymarchon couperi</i> | Low | T | T |
| Crested caracara | <i>Caracara cheriway</i> | Low | T | T |
| Bald eagle | <i>Haliaeetus leucocephalus</i> | Low | T | T |
| Wood stork | <i>Mycteria americana</i> | Moderate | E | E |
| Snail kite | <i>Rostrhamus sociabilis plumbeus</i> | Low | E | E |
| Puma | <i>Felis concolor</i> | Low | T (S/A) | NL |
| Florida panther | <i>Felis concolor coryi</i> | Low | E | E |
| Florida manatee | <i>Trichechus manatus latirostris</i> | Moderate | E | E |
| Smalltooth sawfish | <i>Pristis pectinata</i> | Low | E | NL |

Abbreviation Key

FWS = Federal Status (FWS or NMFS)

FWC = State Status (FWC)

T = Threatened

E = Endangered

T (S/A) = Threatened due to Similarity of Appearance

SSC = Species of Special Concern

NL = Not Listed

Descriptions of each of these species and their potential to occur within the project area are provided in the following sections.





4.1 AMERICAN ALLIGATOR

The American alligator is listed by as Threatened due to Similarity of Appearance (to more endangered crocodilians) by the FWS and is listed as a Species of Special Concern by the FWC. The alligator is a large, mostly black crocodilian with a broadly rounded snout. Its young have yellow crossbands on back, tail, and sides. At all ages, its throat and belly are white to creamy yellow. Its head is smooth in front of the eyes and there are no prominently visible teeth in the lower jaw when the mouth is closed. Adults are typically 6-15 feet in length and hatchlings are approximately 9 inches long.

The American alligator inhabits most permanent bodies of fresh water statewide, including marshes, swamps, lakes, and rivers. It occasionally wanders into brackish and salt water but rarely remains there. The alligator is most active from spring through fall, with nesting in late spring and hatching in summer. It is inactive during cold weather, though some may bask on sunny winter days.

The American alligator is common in Water Conservation 2B (personal observation), which is approximately one mile west of the western project terminus. It has also been reported by others in Pond Apple Slough Natural Area. The American alligator has a moderate potential of occurrence in any of the surface waters within the project corridor, including the stormwater management systems; however there will be no net loss of available American alligator habitat.

During the design and permitting phase of the proposed project, a wildlife survey will be conducted to determine if any American alligators are routinely using any of the areas proposed for construction. If so, all efforts to avoid impacts to the alligator will be considered. Therefore, the proposed project is not expected to adversely affect the American alligator or its preferred habitat.

4.2 AMERICAN CROCODILE

The American crocodile is listed as endangered by both the FWS and the FWC. The American crocodile is a large, gray to brown crocodilian with a long, tapered snout. Crocodiles of all ages have a whitish belly and may have dark crossbands or spots on back, tail, and legs. The fourth tooth of its lower jaw shows prominently when its mouth is closed (except in very young individuals). Adults are typically 7-15 feet in length and hatchlings are approximately 10 inches long. The crocodile often basks with its mouth open.

The American crocodile is usually associated with mangroves. It inhabits coastal estuarine marshes, tidal swamps, and creeks along edges of mainland and islands. It is most active from late winter to fall and less active during cool weather, though it usually





basks on sunny winter days. Nesting occurs on beaches, stream banks, and levees in April and May. Its eggs hatch during summer.

The American crocodile is typically found in coastal waters at the southern end of the Florida peninsula. Breeding occurs from southern Biscayne Bay west to Cape Sable, as well as on Key Largo and some islands in Florida Bay. Additional nesting (without apparent success) has been documented near Marco Island, Collier County. The crocodile occasionally wanders into the Lower Keys as well as northward up to Lee and Broward Counties. Most of the American crocodile's Florida breeding range is protected by Everglades National Park, Crocodile Lakes National Wildlife Refuge, and a private corporation.

An American crocodile has been reported in Pond Apple Slough Natural Area, and has been documented using the Florida Power and Light (FPL) power plant cooling ponds located east of the South Fork of the New River by the FWC. However, the American crocodile has a low potential of occurrence within the project corridor due to the high level of urbanization within it and lack of suitable habitat. Therefore, the proposed project is not expected to adversely affect the American crocodile or its preferred habitat.

4.3 EASTERN INDIGO SNAKE

The Eastern indigo snake is listed as threatened by both the FWS and the FWC. The Eastern indigo snake is very large, shiny, and stout-bodied, reaching lengths as great as 8 feet. It is black ventrally, but its chin, throat, and sides of its head may be reddish or (rarely) white. Its scales are typically smooth (no ridges), though adult males have a keel on the front half of some scales along its back. The anal scale is undivided. Its young are similar to adults though often more reddish anteriorly, and are approximately 17-24 inches long at hatching. When encountered, the Eastern indigo snake often hisses, flattens its neck vertically (from side to side), and vibrates its tail, but rarely bites.

The Eastern indigo snake inhabits a broad range of habitats, from scrub and sandhill to wet prairies and mangrove swamps. It requires very large tracts of land to survive. It is active nearly year-round in southern Florida but winters underground farther north. In the northern part of its range, it often winters in gopher tortoise burrows in sandy uplands but forages in more hydric habitats. Nesting occurs in May and June. The Eastern indigo snake is found throughout Florida, including the Upper and Lower Keys, but it is rare in the Florida panhandle. It is rare in most areas, though it has been recorded in many public lands statewide. It is uncertain whether most of these areas support viable populations.





Figure 4-1 shows the locations of the Eastern indigo snake occurrences documented by the FNAI and FWS. The nearest occurrence in either of these datasets (date unknown) was approximately 20 miles north of the project corridor in Palm Beach County. An Eastern indigo snake has also been reported in Pond Apple Slough Natural Area. However, the Eastern indigo snake has a low potential of occurrence within the project corridor due to the high level of urbanization within it. Therefore, the proposed project is not expected to adversely affect the Eastern indigo snake or its preferred habitat.

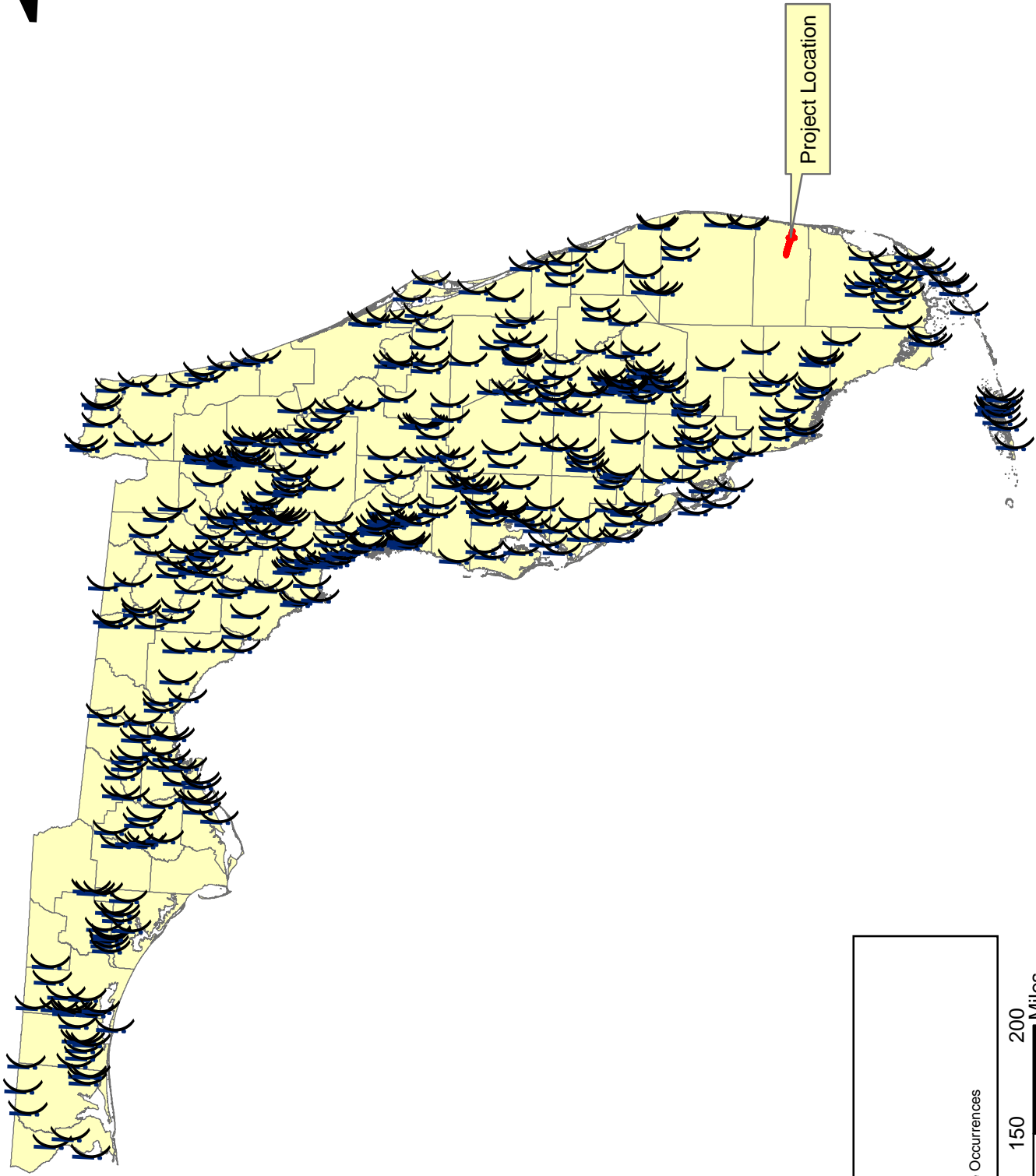
4.4 CRESTED CARACARA

The crested caracara is listed as threatened by both the FWS and the FWC. The crested caracara is a large, distinctive raptor with a large head, black cap and crest. It has a long neck, hooked bill, long legs, and long, rounded wings bent back at the wrist. The caracara is mainly black-brown with a white throat and neck with bare, red facial skin. Its upper back, breast, and tail are buffy white with barring, and it has a broad, dark band at end of tail. White patches at the ends of its dark wings are conspicuous in flight, which is characterized by steady, shallow wing-beats with minimal soaring. Juveniles have pale edging on the brown feathers of their upper side and are streaked below. The caracara's facial color changes from grayish-pink (juveniles) to yellow (second year) to bright yellow-orange or reddish (adults). Facial color also changes depending on blood flow to the facial area. It is often seen with vultures because of its scavenging nature.

The crested caracara inhabits open country, including dry prairie and pasture lands with cabbage palm, cabbage palm/live oak hammocks, and shallow ponds and sloughs. Its preferred nest trees are cabbage palms, followed by live oaks. It is generally monogamous and adult pairs stay year-round on a territory, which may be maintained for years. Based on 1987-1991 data, the caracara is most abundant in south central Florida. Occasional reports outside the known breeding range and south to the Keys, are attributed to escapees or wandering individuals.

Figure 4-2 shows the locations of the crested caracara occurrences documented by the FNAI and FWS. The nearest occurrence in either of these datasets was in 1988, 23 miles west of the western project terminus, in an undeveloped area. However, the crested caracara has a low potential of occurrence within the project corridor. Therefore, the proposed project is not expected to adversely affect the crested caracara or its preferred habitat.



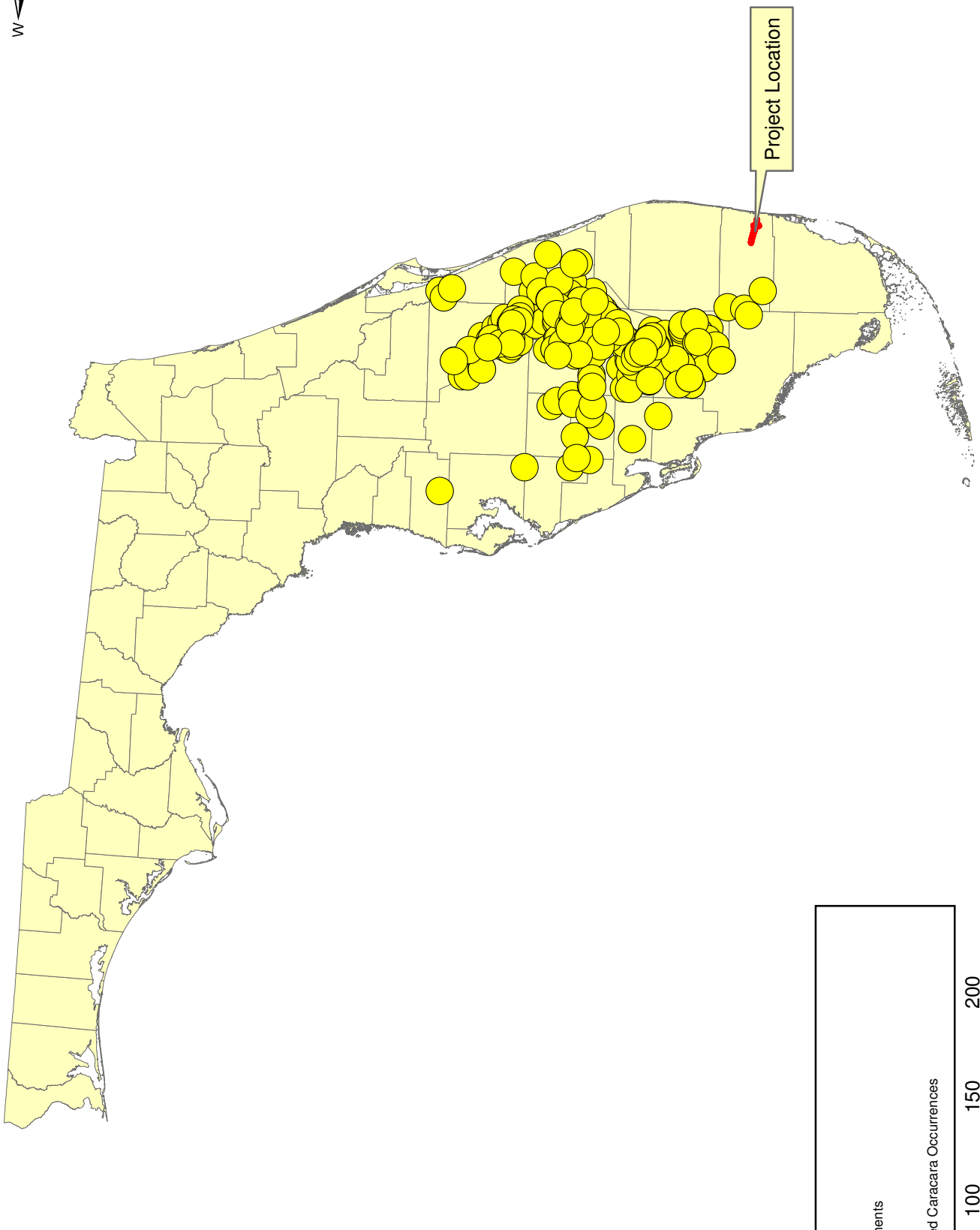
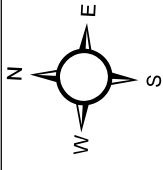


Legend

- Proposed Improvements
- County Boundaries
- Documented Eastern Indigo Snake Occurrences

0 25 50 100 150 200 Miles

| | | |
|------------|--|--|
| | STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION | I-595 PD&E STUDY ENDANGERED SPECIES BIO ASSESSMENT EASTERN INDIIGO SNAKE OCCURRENCES |
| FIGURE 4-1 | | |



Legend

- Proposed Improvements
- County Boundaries
- Documented Crested Caracara Occurrences

0 25 50 100 150 200 Miles



STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

I-595 PD&E STUDY
ENDANGERED SPECIES BIO ASSESSMENT
CRESTED CARACARA OCCURRENCES

FIGURE 4-2



4.5 BALD EAGLE

The bald eagle is listed as threatened by both the FWS and the FWC. The adult bald eagle has a white head, white tail, and a large, bright yellow bill; all other plumage is dark. Juveniles are dark with variable amounts of light splotching on their body, wings, and tail; and its head and bill are dark. In flight the bald eagle's wings are broad and wide and held horizontally, presenting a flat profile when soaring and gliding. It flies with slow, powerful wing-beats.

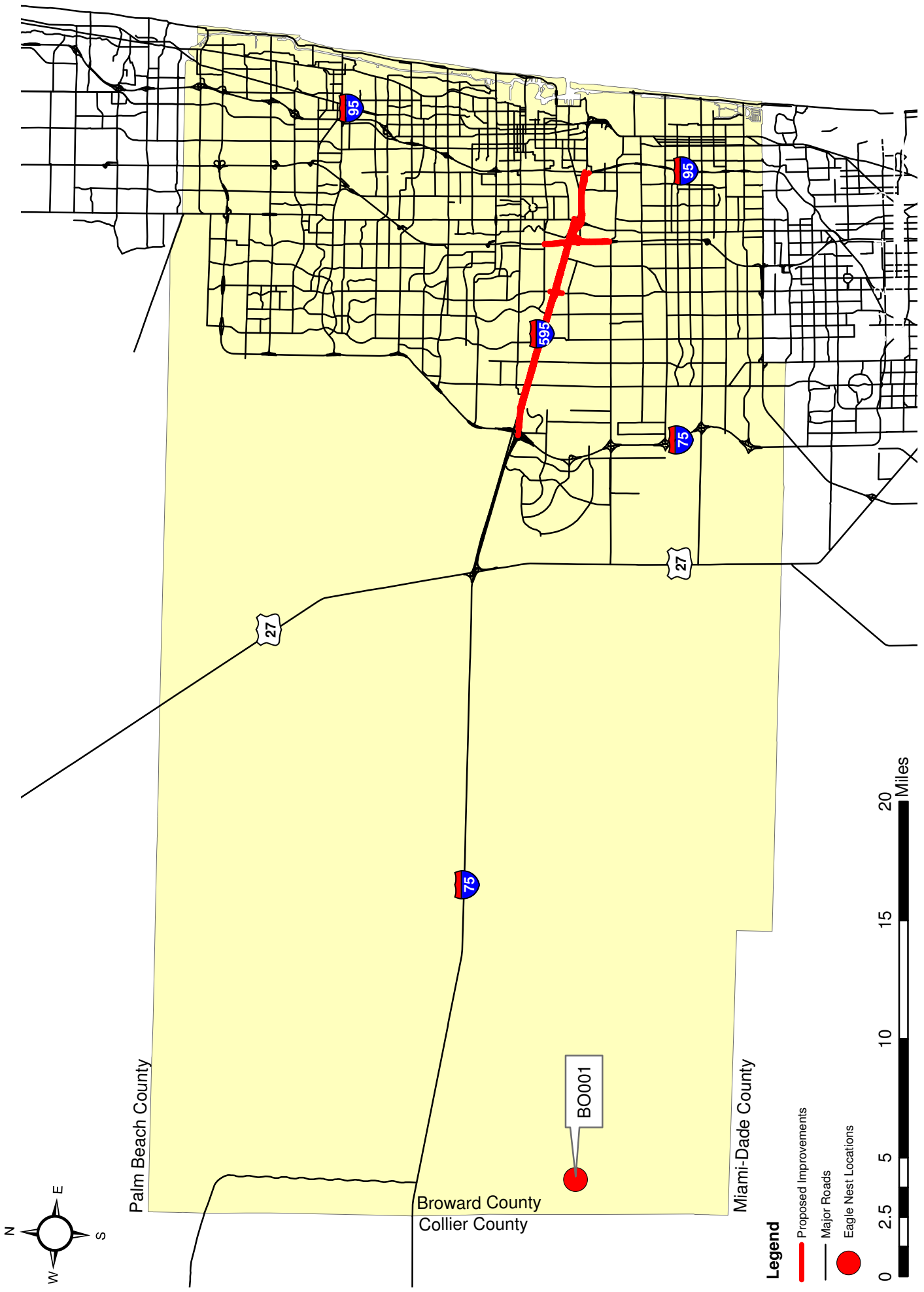
The bald eagle is most commonly found close to coastal areas, bays, rivers, lakes, or other bodies of water that provide abundant food sources including fish, waterfowl, and wading birds. It usually nests in tall trees (mostly live pines) which provide clear views of the surrounding area. In Florida Bay, where there are few predators and few tall emergent trees, bald eagles nest in crowns of mangroves and even on the ground. In extreme southern Florida, most adults are resident. Juveniles mostly migrate north in summer and may be found as far north as Canada. Breeding occurs throughout most of peninsular Florida and the Keys, mainly along the coast in the eastern panhandle. The greatest concentrations of nesting eagles occur around the large lakes in central Florida and in Florida Bay.

Bald eagle nests are monitored annually by the FWC. One bald eagle nest has been documented in Broward County on the FWC Bald Eagle Nest Database (BO001). This nest has not been active since 1997 and is located near the western Broward County line, approximately 31 miles west of the western project terminus. Figure 4-3 shows the location of nest BO001. The bald eagle has a low potential occurrence in the project corridor. Therefore, the proposed project is not expected to adversely affect the bald eagles or its preferred habitat.

4.6 WOOD STORK

The wood stork is listed as endangered by both the FWS and the FWC. The wood stork is a large, white wading bird with black in its wings and a short black tail. It soars with neck and legs extended, displaying its long, broad wings. Its black flight feathers contrast with white along the length of its wings. Its legs are dark and its feet are beige. Adults have bare, scaly, dark-gray heads and necks, with long, heavy, decurved bills. The head and neck of immature wood storks have grayish brown feathering, and their bills are yellowish.





STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

I-595 PD&E STUDY
ENDANGERED SPECIES BIO ASSESSMENT
FWC EAGLE NEST LOCATIONS

FIGURE 4-3





ENDANGERED SPECIES BIOLOGICAL ASSESSMENT

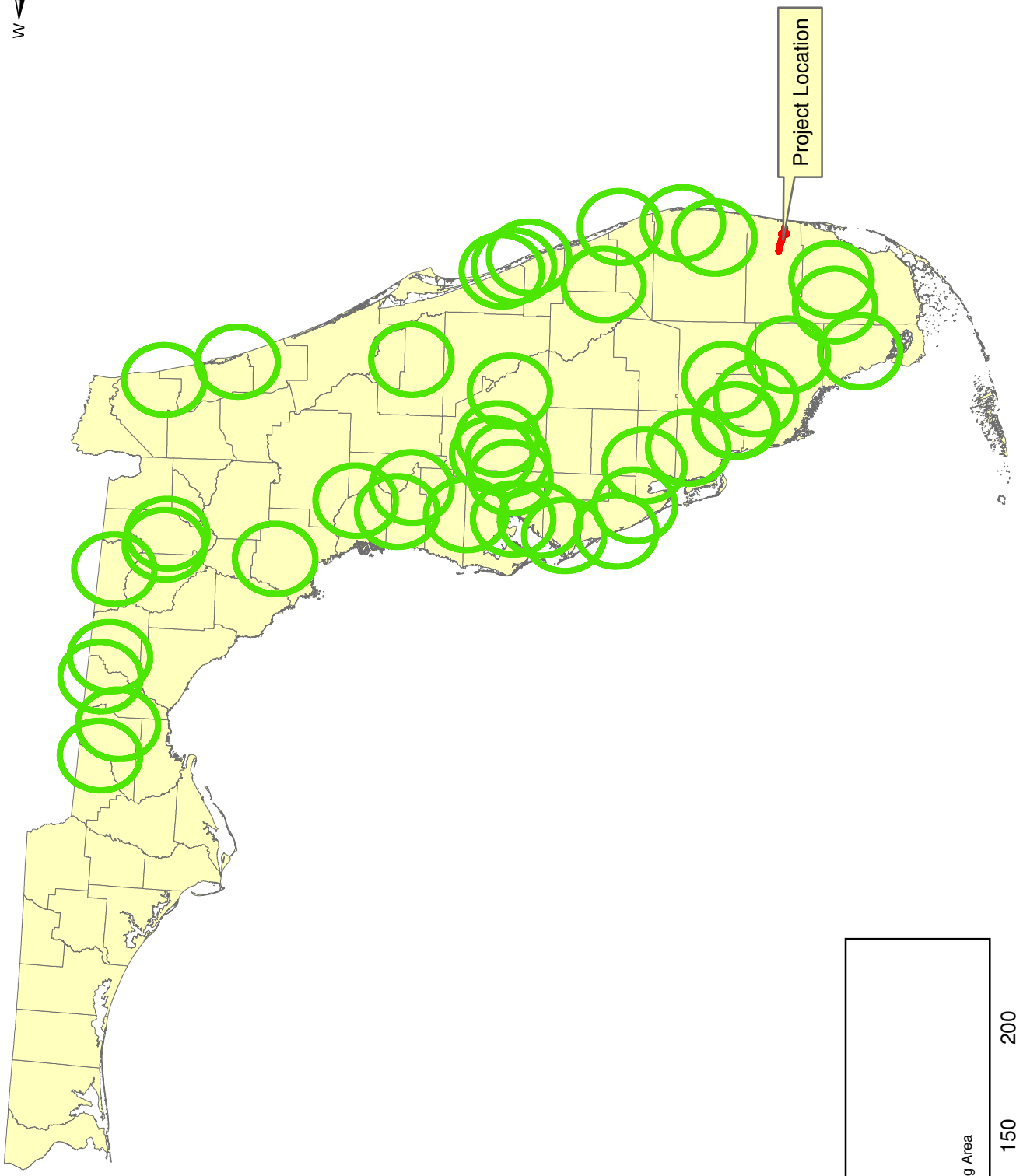
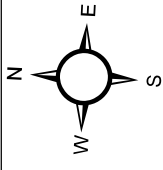
The wood stork nests colonially in a variety of inundated forested wetlands, including cypress strands and domes, mixed hardwood swamps, sloughs, and mangroves. Nesting in artificial habitats (e.g., impoundments and dredged areas with native or exotic vegetation) in north and central Florida is increasing. The wood stork forages mainly in shallow freshwater marshes, swamps, lagoons, ponds, tidal creeks, flooded pastures and ditches, where they are attracted to falling water levels that concentrate food sources (mainly fish). The wood stork breeds locally in South Carolina, Georgia, Florida (formerly west to Texas). It winters throughout its breeding range. Post-breeding dispersal carries large numbers from more southern locales to more northern parts of its range. In winter, northern birds move south. Annual and long-term use of nesting sites is very dependent on feeding conditions, which may be affected dramatically by altered hydrologic patterns. Colonies may form in late November to early March in south Florida, and February to March in central and northern Florida.

The FWS South Florida Ecological Services Office has established Standard Local Operating Procedures for Endangered Species (SLOPES) for wood storks to provide a tool to assist in determining if an action could adversely affect wood storks. For the purpose of the wood stork SLOPES, the colony boundary includes all nests and a 100 meter (325 feet) buffer surrounding the nests. The primary zone adds an additional 400 meters to the colony boundary and the secondary zone adds an additional 350 meters to the primary zone boundary. The core foraging area (CFA) is a 30-kilometer (18.6-mile) zone surrounding the colony boundary. The guidelines recommend restrictions in each of the zones that correspond to nesting and non-nesting season cycles. Figure 4-4 shows the location of the CFA for each wood stork colony identified on the FWC Waterbird Colony Locator.

Wood storks are frequently observed on the edges of roadway stormwater ponds and swales in South Florida. They likely forage in the roadside swales of the project corridor especially in winter, but these areas provide sub-optimal habitat for Wood storks due to high noise levels and the accumulation of run-off contaminants in the stormwater ponds and swales. A wood stork has also been reported in Pond Apple Slough Natural Area and it has a moderate potential for occurrence within the project area. However, the project corridor is not located within a wood stork CFA.

During the design and permitting phase of the proposed project, a wildlife survey will be conducted to determine if TSP's need to be incorporated into the construction plans. If any wood storks are found routinely using any of the areas proposed for construction, the TSP's will be incorporated into the contractor's bid documents. Therefore, the proposed project is not expected to adversely affect the wood stork or its preferred habitat.





Legend

- Proposed Improvements
- County Boundaries
- 18.6-mile Wood Stork Core Foraging Area

0 25 50 100 150 200 Miles



4.7 SNAIL KITE

The snail kite is listed as endangered by both the FWS and the FWC. The snail kite is a medium-sized raptor. The adult male is dark slate gray to black; its tail is white with a broad, dark band and pale terminal band; and it has a long, hooked bill. Breeding males have orange-red legs and reddish eyes and facial skin. The adult female is brown with streaking on head, throat, and underparts; and its soft part colors are like that of the male. Juveniles and subadults are similar to adult females.

The snail kite inhabits large open freshwater marshes and lakes with shallow water, less than four feet deep, and a low density of emergent vegetation. It is dependent upon apple snails (*Pomacea paludosa*) which are caught on the water surface. Nests usually are located over water in a low tree or shrub (commonly willow, wax myrtle, pond apple, or buttonbush, but also in non-woody vegetation like cattail or sawgrass). The snail kite is nonmigratory, but exhibits nomadic dispersal in response to habitat changes (e.g., water level, food availability, hydroperiod). It was formerly found in freshwater marshes throughout peninsular Florida. Currently, depending on water conditions and food availability, the snail kite is restricted to St. Johns River headwaters, Kissimmee Valley, Lake Okeechobee, Loxahatchee National Wildlife Refuge, and Holey Land Wildlife Management Area; Water Conservation Areas 2A, 2B, 3A, 3B in Palm Beach, Broward and Dade Counties; and parts of Everglades National Park and Big Cypress National Preserve. The snail kite may widely disperse in drought years.

The western terminus of the proposed project is approximately one mile east of Water Conservation Area 2B, which is designated by the FWS as Critical Habitat for the snail kite. However, the snail kite has a low potential of occurrence within the project corridor because suitable nesting and foraging habitat does not exist within it. Therefore, the proposed project is not expected to adversely affect the snail kite or its critical habitat.

4.8 FLORIDA PANTHER (AND PUMA)

The Florida panther is listed as endangered by both the FWS and the FWC. The Florida panther is a large (70-150 lbs.) cat with a long tail. Its fur is dark buff to tawny above and light buff to white below. The muzzle and tip of its tail are black. Its head is broad, and ears are round. Its typical track shows four clawless toe pads around a three-lobed heel pad. Defining characteristics of the subspecies are a dorsal hair whorl, a crook in the tail, and white flecking on the neck and shoulders. Pumas (*Felis concolor*) and different *Felis concolor* subspecies occasionally escape captivity or have been released and can be mistaken for Florida panthers; the defining characteristics listed above may be unreliable in distinguishing these close relatives.





The Florida panther requires extensive blocks of mostly forested communities. Large wetlands that are generally inaccessible to humans are important for diurnal refuge. The panther will tolerate improved areas in a mosaic of natural communities. It is a year-round resident. Collier, Glades, and Lee Counties are the stronghold for the Florida panther; but Miami-Dade and Monroe Counties are also important. Dispersing individuals may range well north in the peninsula searching for new territories. The subspecies was formerly found throughout the southeastern US. It is currently found on several public conservation lands, including Big Cypress National Preserve, Florida Panther National Wildlife Refuge, Fakahatchee State Park, Picayune Strand State Forest, and Everglades National Park. Population numbers are apparently increasing as a result of a genetic improvement project.

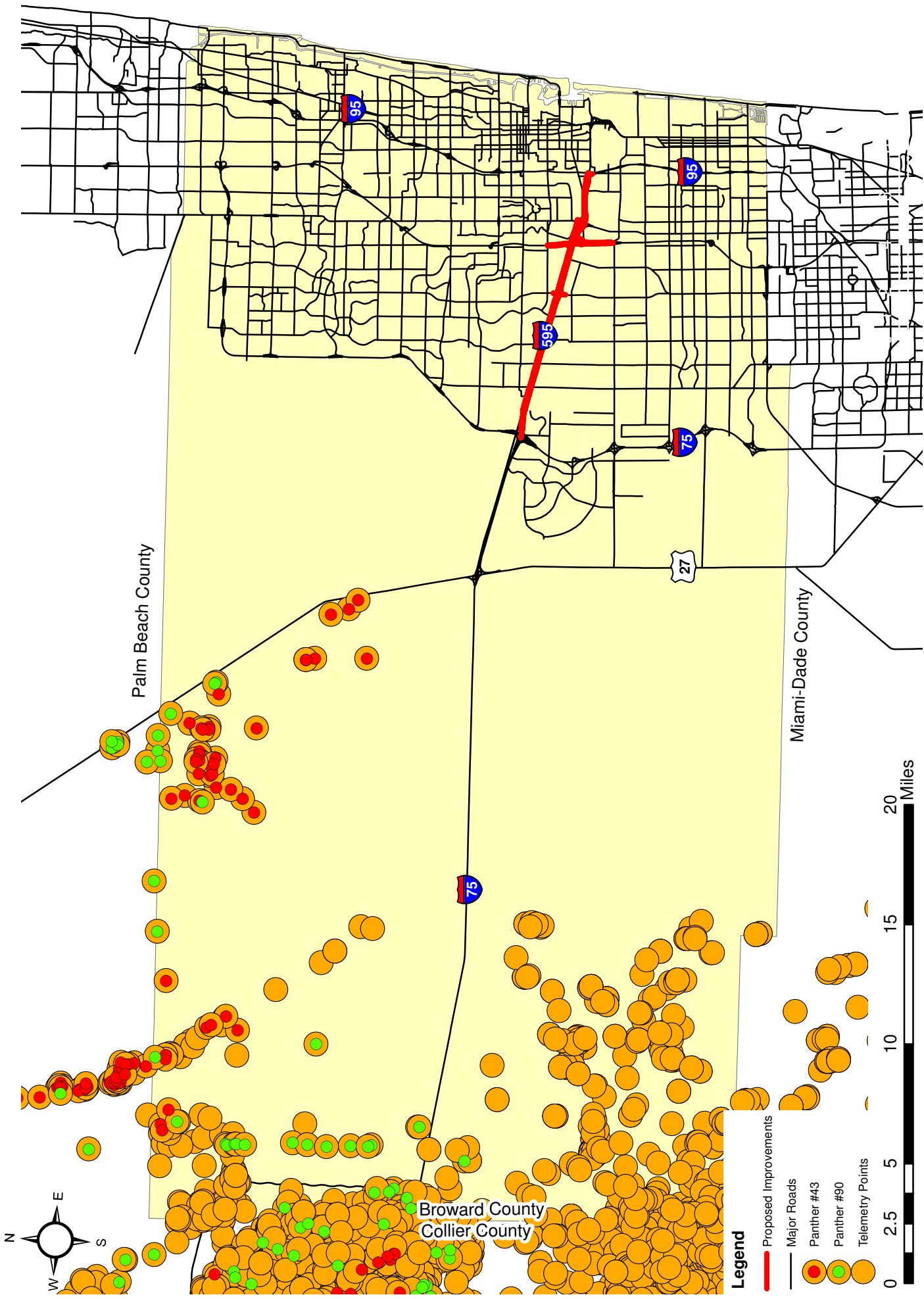
Figure 4-5 shows the distribution of Florida panthers in the vicinity of Broward County based on telemetry data used obtained from the FWC. In 1991, Panther #43 came within 10 miles of the western project terminus and in 2001, Panther #90 came within 17 miles of the western project terminus. While either of these panthers could have come closer to the project terminus while not being tracked and other untracked panthers could have too, their potential occurrence within the project corridor is very low due to the high level of urbanization within the project corridor. Therefore, the proposed project is not expected to adversely affect the Florida panther or its preferred habitat.

4.9 FLORIDA MANATEE

The Florida manatee is listed as endangered by both the FWS and the FWC. The Florida manatee, a subspecies of the West Indian manatee, is a large (to 400 lbs.), gray, nearly hairless, walrus-like aquatic mammal. Its tail is broad, rounded, and flattened; and its front limbs are flipper-like, with three nails; hind limbs are absent. Its head is broad and undifferentiated from body. Its upper lip is deeply cleft and bears stiff bristles. Its eyes are small and it has no external ears.

The manatee inhabits coastal waters, bays, rivers, and (occasionally) lakes. It requires warm-water refugia such as springs or cooling effluent during cold weather. Sheltered coves are important for feeding, resting, and calving. The manatee is wide-ranging during warm months and restricted to springs and other warm-water areas during the winter. It may be found in any coastal or estuarine waters, but it is most common in peninsular Florida. During warm-water periods, its range extends into coastal waters from Texas to North Carolina, but it is restricted to Florida during the winter.





Legend

- Proposed Improvements
- Major Roads
- Panther #43
- Panther #90
- Telemetry Points

0 2.5 5 10 15 20 Miles



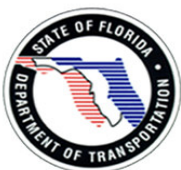
Chapter 68C-22.010 of the Florida Administrative Code establishes Manatee Protection Zones in Broward County. Figure 4-6 shows the location of the protection zones and the restrictions imposed. Manatees can occur in the North New River Canal, the South Fork of the New River, and the FPL power plant cooling canals. They can even pass through the G-54 SFWMD salinity control structure. As noted in Figure 4-6, the FPL power plant cooling canals are a No Entry Zone year-round as they are a manatee aggregation site. There is a high potential for the Florida manatee to occur within the project corridor during winter and be encountered during construction in the North New River Canal, South Fork the New River and FPL cooling canal that passes under the project corridor.

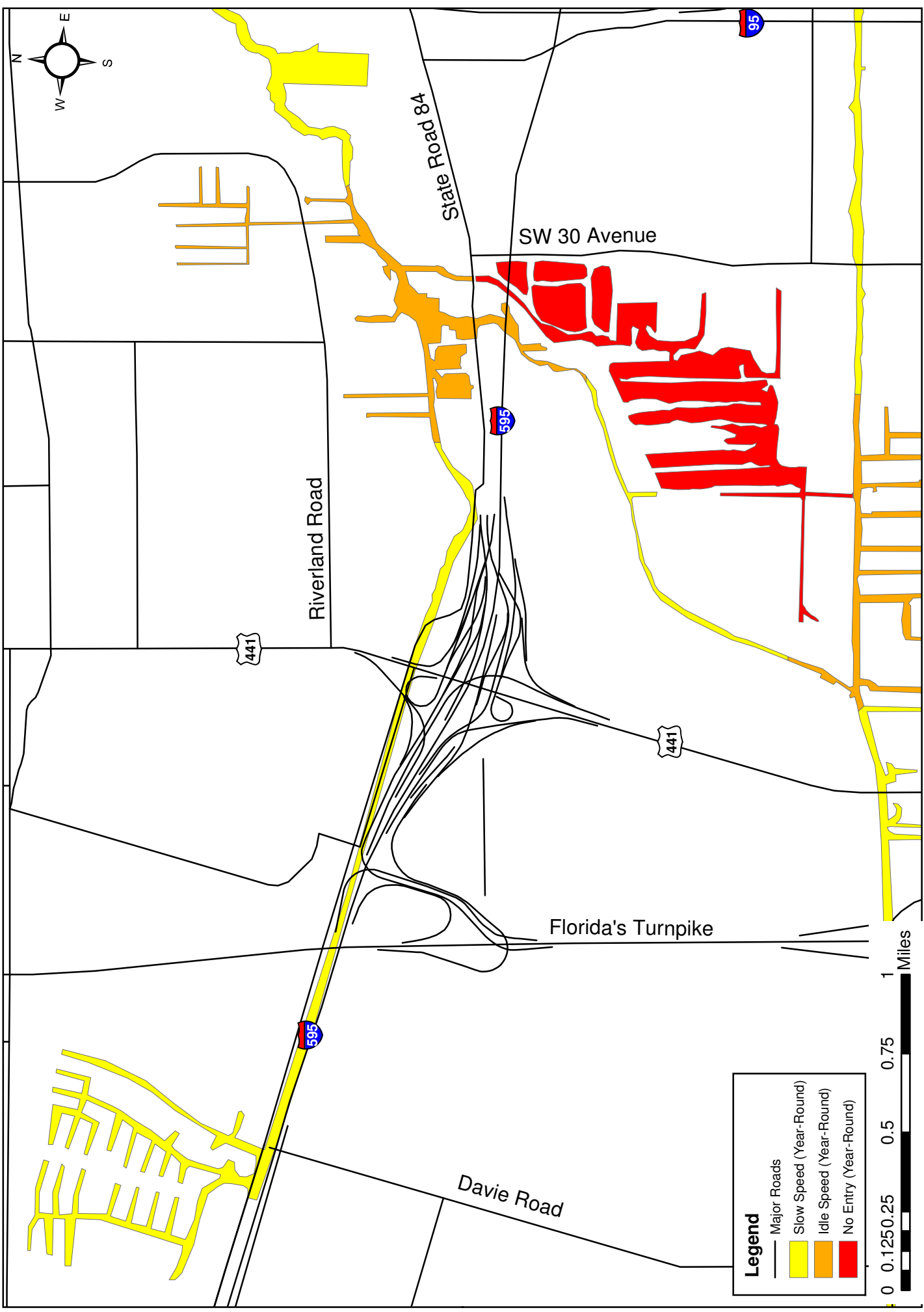
During the design and permitting phase of the proposed project, a wildlife survey will be conducted to determine if TSP's need to be incorporated into the construction plans. If any Florida manatees are found routinely using any of the areas proposed for construction, the TSP's will be incorporated into the contractor's bid documents. Therefore, the proposed project is not expected to adversely affect the Florida manatee or its preferred habitat.

4.10 SMALLTOOTH SAWFISH

The smalltooth sawfish is listed as endangered by the FWS and is not listed by the FWC. The smalltooth sawfish is one of two species of sawfish that inhabit US waters. Smalltooth sawfish commonly reach 18 feet in length and may grow to 25 feet. Little is known about the life history of these animals, but they may live up to 25-30 years and mature after about 10 years. Like many elasmobranchs, smalltooth sawfish are ovoviviparous, meaning the mother holds the eggs inside of her until the young are ready to be born, usually in litters of 15 to 20 pups.

Sawfish species inhabit shallow coastal waters of tropical seas and estuaries throughout the world. They are usually found in shallow waters very close to shore over muddy and sandy bottoms. They are often found in sheltered bays, on shallow banks, and in estuaries or river mouths. Certain species of sawfish are known to ascend inland in large river systems, and they are among the few elasmobranchs that are found in freshwater systems in many parts of the world.



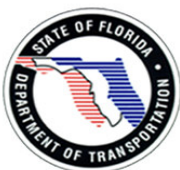




ENDANGERED SPECIES BIOLOGICAL ASSESSMENT

Smalltooth sawfish have been reported in both the Pacific and Atlantic Oceans, but the US population is found only in the Atlantic. Historically, the US population was common throughout the Gulf of Mexico from Texas to Florida, and along the east coast from Florida to Cape Hatteras. The current range of this species is restricted to peninsular Florida, and smalltooth sawfish are relatively common only in the Everglades region at the southern tip of the state. No accurate estimates of abundance trends over time are available for this species. Available records, including museum records and anecdotal fisherman observations, indicate that this species was once common throughout its historic range and that smalltooth sawfish have declined dramatically in US waters over the last century. Sawfish are extremely vulnerable to overexploitation because of their propensity for entanglement in nets, their restricted habitat, and low rate of population growth. The decline in smalltooth sawfish abundance has been caused primarily by bycatch in various fisheries, likely compounded by habitat degradation.

The smalltooth sawfish has a low potential of occurrence within the project corridor due to the high level of urbanization within it. If a smalltooth sawfish is encountered during construction, they will likely move from the area of disturbance and not return until after construction has been completed. Therefore, the proposed project is not expected to adversely affect the smalltooth sawfish or its preferred habitat.





5.0 STATE LISTED SPECIES AND OTHER CONSIDERATIONS

Though the primary purpose of this report is to address potential impacts to species protected under the Endangered Species Act, the following additional information is provided for consideration.

Table 5-1 identifies all the state listed species, and FNAI identified rare species that potentially could be encountered in the vicinity of the project corridor.

Table 5-1 State Listed and Rare Species

| Common Name | Scientific Name | FWS | FWC | Potential Occurrence | Potential Impact |
|---------------------------------|--|-----|-----|----------------------|------------------|
| Slender spleenwort | <i>Asplenium dentatum</i> | NL | E | Low | None |
| Bird's nest spleenwort | <i>Asplenium serratum</i> | NL | E | Low | None |
| Swamp plume polypoda fern | <i>Pecluma ptilodon</i> | NL | E | Low | None |
| Blunt-leaved peperomia | <i>Peperomia obtusifolia</i> | NL | E | Low | None |
| Many-flowered catopsis | <i>Catopsis floribunda</i> | NL | E | Low | None |
| Night-scented orchid | <i>Epidendrum nocturnum</i> | NL | E | Low | None |
| Celestial lily | <i>Nemastylis floridana</i> | NL | E | Low | None |
| Fahkahaatchee ladies' –tresses | <i>Sacoila lanceolata var paludicola</i> | NL | T | Low | None |
| Florida tree snail | <i>Liguus fasciatus septentrionalis</i> | NL | SSC | Medium | None |
| Gopher frog | <i>Rana capito</i> | NL | SSC | Low | None |
| Gopher tortoise | <i>Gopherus polyphemus</i> | NL | SSC | Low | None |
| Florida pine snake | <i>Pituophis melanoleucus mugitus</i> | NL | SSC | Low | None |
| Roseate spoonbill | <i>Ajaia ajaja</i> | NL | SSC | Low | None |
| Limpkin | <i>Aramus guarana</i> | NL | SSC | Medium | None |
| Florida burrowing owl | <i>Athene cunicularia floridana</i> | NL | SSC | High | None |
| Little blue heron | <i>Egretta caerulea</i> | NL | SSC | High | None |
| Reddish egret | <i>Egretta rufescens</i> | NL | SSC | High | None |
| Snowy egret | <i>Egretta thula</i> | NL | SSC | High | None |
| Tricolored heron | <i>Egretta tricolor</i> | NL | SSC | High | None |
| White ibis | <i>Eudocimus albus</i> | NL | SSC | High | None |
| Florida sandhill crane | <i>Grus canadensis pratensis</i> | NL | T | Low | None |
| Brown pelican | <i>Pelecanus occidentalis</i> | NL | SSC | High | None |
| Black skimmer | <i>Rynchops niger</i> | NL | SSC | High | None |
| Least tern | <i>Sterna antillarum</i> | NL | T | High | None |
| Florida mastiff bat | <i>Eumops glaucinus floridanus</i> | NL | E | High | None |
| Florida mouse | <i>Podomys floridanus</i> | NL | SSC | Medium | None |
| Eastern diamondback rattlesnake | <i>Crotalus adamanteus</i> | NL | NL | Medium | None |
| Diamondback terrapin | <i>Malaclemys terrapin</i> | NL | NL | Medium | None |
| Florida scrub lizard | <i>Sceloporus woodi</i> | NL | NL | Medium | None |

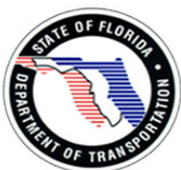




Table 5-1 State Listed and Rare Species (continued)

| Common Name | Scientific Name | FWS | FWC | Potential Occurrence | Potential Impact |
|----------------------------|---------------------------------|-----|-----|----------------------|------------------|
| Short-tailed hawk | <i>Buteo brachyurus</i> | NL | NL | High | None |
| Wilson's plover | <i>Charadrius wilsonia</i> | NL | NL | High | None |
| Osprey | <i>Pandion haliaetus</i> | NL | NL | High | None |
| Sandwich tern | <i>Sterna sandvicensis</i> | NL | NL | High | None |
| Southeastern big-eared bat | <i>Corynorhinus rafinesquii</i> | NL | NL | High | None |
| Royal tern | <i>Sterna maxima</i> | NL | NL | High | None |
| Round-tailed muskrat | <i>Neofiber alleni</i> | NL | NL | High | None |

If the burrowing owl, which was observed on several occasions immediately outside the study area, builds a nest within the project corridor or a construction staging area, a relocation or take permit may need to be obtained from the FWC if impacts to the nest cannot be avoided.

Figure 5-1 shows the locations of waterbird colonies documented by the FWC in Broward County through 1999. Colony # 619003, which is located in Broward County Park and Recreation Department's Pond Apple Slough Natural Area, was last found active during the 1976-1978 survey and contained Little blue heron, Tricolor heron, Green heron (*Butorides striatus*), and Yellow-crowned night-heron (*Nycticorax violacea*). However, no impacts to waterbird colonies are anticipated as a result of the proposed project.



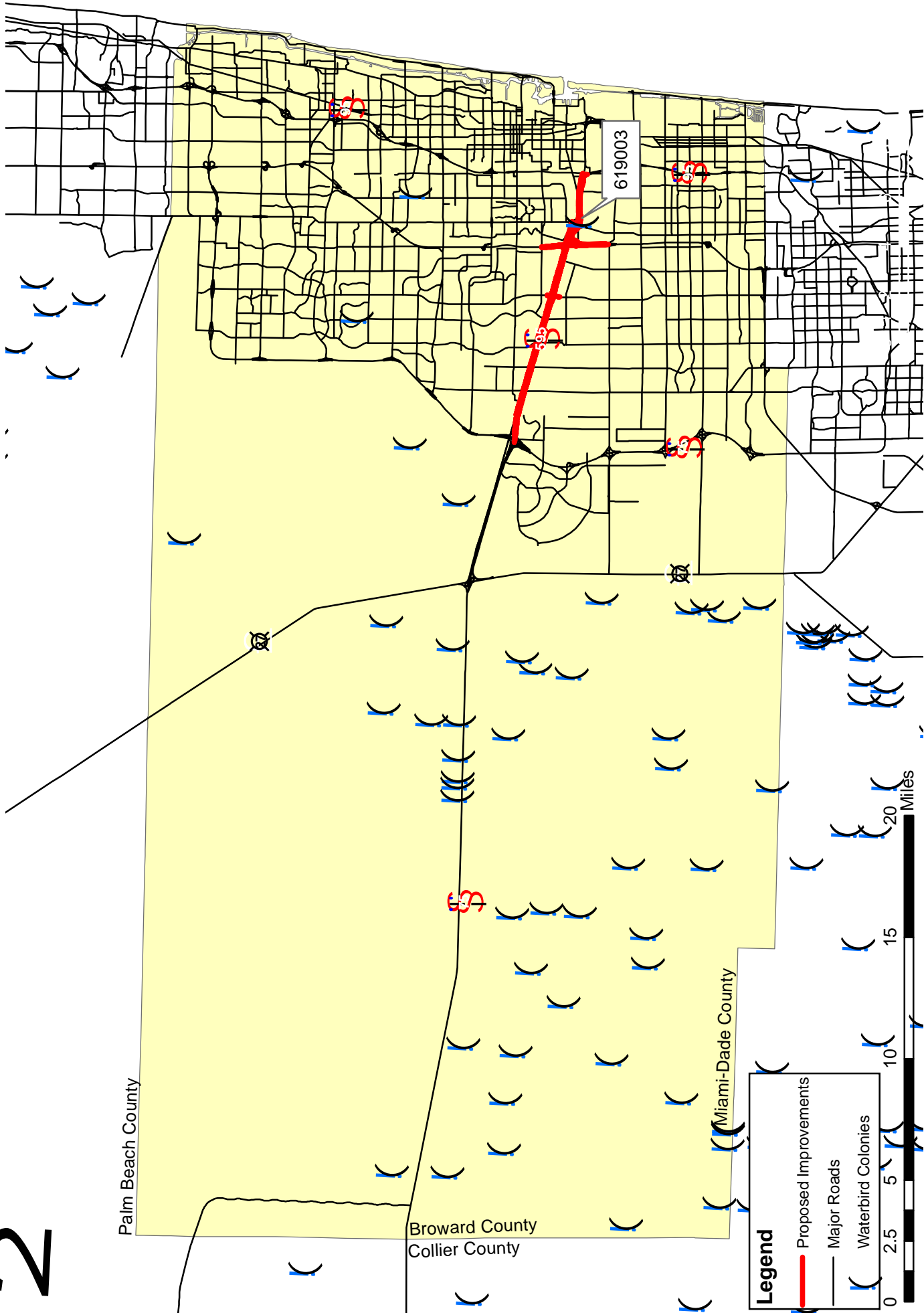


FIGURE 5-1

I-595 PD&E STUDY
 ENDANGERED SPECIES BIO ASSESSMENT
 FWC WATERBIRD COLONY LOCATIONS

STATE OF FLORIDA
 DEPARTMENT OF TRANSPORTATION





6.0 CONCLUSION

The proposed project was evaluated for potential impacts to Federally-listed species. A literature review, GIS analysis, discussions with resource agencies, and field surveys were conducted to identify threatened or endangered species that may potentially occur the project area. The species considered include the American alligator, American crocodile, Eastern indigo snake, crested caracara, bald eagle, wood stork, snail kite, Florida panther, Florida manatee and smalltooth sawfish. The only species that have a moderate potential of occurring in the project corridor are American alligator, wood stork, and Florida manatee. All others have a low potential of occurrence in the project corridor.

During the design and permitting phase of the proposed project, a wildlife survey will be conducted to determine if any Federally-listed species are routinely using the areas proposed for construction. If so, the appropriate Technical Special Provisions (TSP) will be incorporated into the contractor's bid documents to protect the listed species.

Based on field surveys, literature review, and informal consultation with agency personnel and other specialists, it has been determined that the proposed project is unlikely to adversely affect any Federally-listed or State-listed endangered or threatened species. Therefore, the proposed project is consistent with the Endangered Species Act.

