ENDANGERED SPECIES BIOLOGICAL ASSESSMENT
TECHNICAL MEMORADUM
FOR THE ALL ABOARD FLORIDA PASSENGER RAIL PROJECT
WEST PALM BEACH TO MIAMI, FLORIDA

Prepared Pursuant to Section 7 (c) of the Endangered Species Act of 1973, as amended

by the Federal Railroad Administration
and
All Aboard Florida

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1.0 INTRODUCTION

All Aboard Florida (AAF) project is an intercity passenger rail service that will provide a necessary transportation solution for millions of Floridians and tourists, connecting downtown West Palm Beach (MP 299.6 +/-) to downtown Miami (MP 365.5 +/-) with one stop in downtown Fort Lauderdale (MP 341.2+/-).

The existing FEC corridor between Miami and West Palm Beach is approximately 100 feet wide and has supported freight and/or passenger service on a continuous basis for more than 100 years. The FEC corridor was originally built as a double-track railroad, but today it is a single track railroad with several long sidings. The roadbed for the second track in the corridor still exists today and would be used for the additional track improvements.

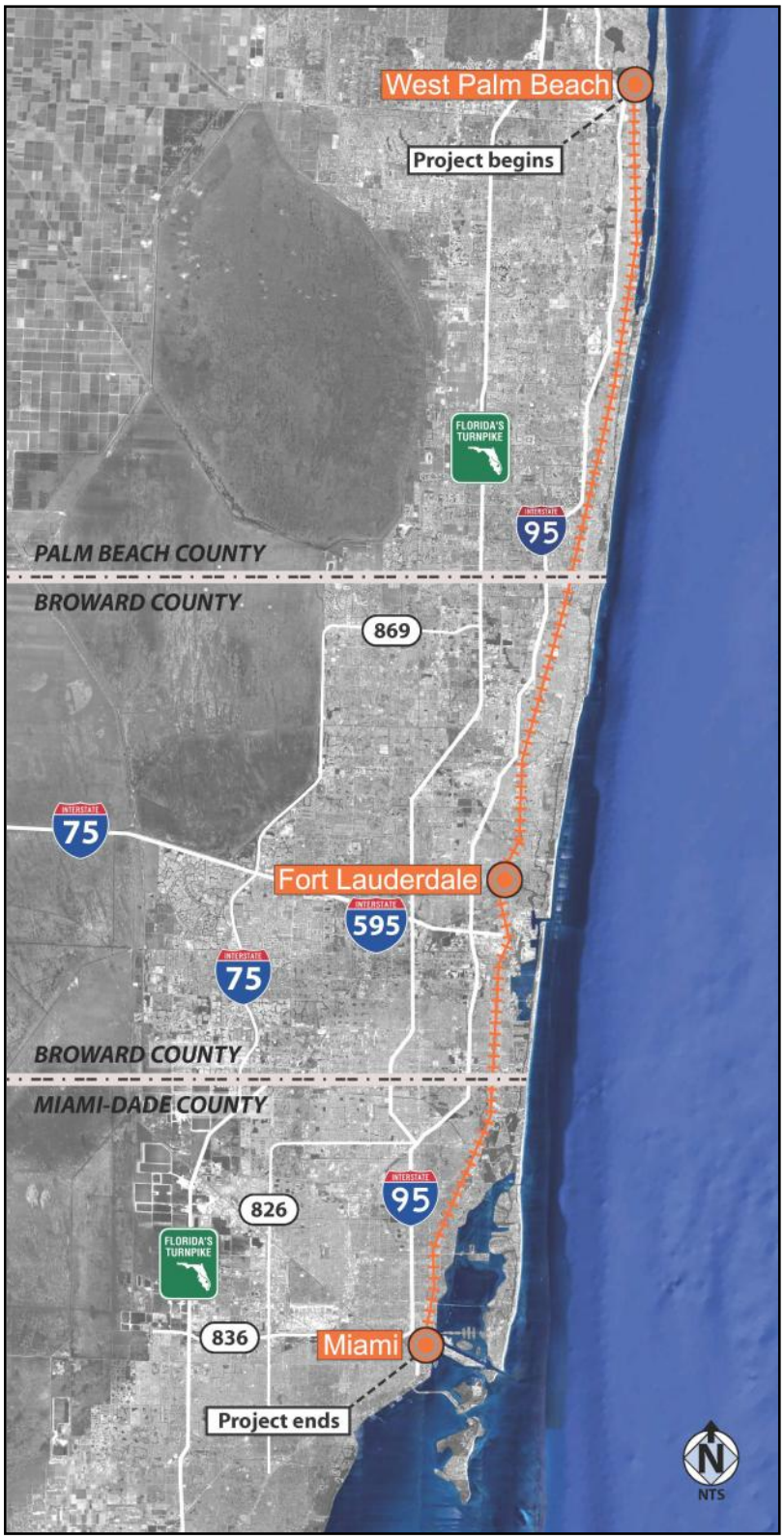
In 2006, FECR moved approximately 26 through freight trains per day over this segment, in addition to local trains serving customers along the line. Today, the number of daily through freight trains is 14. The new intercity passenger rail system would provide hourly service (consisting of approximately 16 roundtrip trains that will be approximately 725 feet long. Trains will operate at speeds up to 79 mph, but will likely average 60 mph. The current FRA Class IV track conditions along the FEC corridor would permit passenger train trains to operate up to a maximum speed of 79 mph today.

The existing track is FRA Class 4 track, permitting 60 mile per hour freight and 80 mile per hour passenger operations. The project will maintain this class of track and will require only minor infrastructure improvements for the main line, including replacement of the second main line track, reconstruction of existing crossovers and the addition of crossovers to facilitate operational improvements. No additional right of way is anticipated to complete these improvements. Further, no bridge structures located over bodies of water will be touched.

AAF plans to complete all infrastructure improvements for the main line track for the project within the existing FEC corridor that is approximately 100 feet wide throughout this segment (i.e. no additional right-of way acquisition is expected). Three existing bridge structures will have an additional second main track added to the existing deck, but no improvements to the structure's footprint will need to be made. Seven existing bridges will remain single track and will not be expanded to accommodate two tracks. Additionally, 49.2 miles of new track will be constructed in the corridor and 8.3 miles of existing track will be rehabilitated. See Project Location Map, Figure 1.

The proposed downtown Miami station will be situated on an approximately nine-acre site that is currently owned by AAF's affiliate. This proposed site was once the location of the original Florida East Coast Miami Station built by Henry Flagler. Likewise, the proposed stations at Fort Lauderdale and West Palm Beach stations will be situated on downtown sites, providing easy access for auto, bike and pedestrians.

Figure 1. Project Location Map



The purpose of this technical memorandum 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

2.0 ALTERNATIVE DEVELOPMENT

This section discusses those alternatives developed and considered during the EA process. As per NEPA and CEQ guidance, the No-Build Alternative will remain a reasonable and feasible alternative throughout this evaluation. The No-Build Alternative represents "no change" from current conditions and a continuation of the present course of planned and funded actions until that action is changed.

For an alternative to be considered worthy of evaluation, the following criteria were deemed essential:

- Geographic location in close proximity to the Downtown core or Central Business District (CBD) as well as the FECR right-of-way;
- For West Palm Beach and Fort Lauderdale Stations – ability for the FEC ROW to accommodate the addition of a second main line track necessary for both passenger rail and freight operations, as well as gauntlet tracks through the platform zones for use by periodic high and wide freight trains;
- For Miami Station – necessity to maintain railroad infrastructure for continued Port Lead freight operations;
- Availability of land within the FEC ROW for workable track alignment and platform zones; and
- Availability of land adjacent to the designated stations to accommodate customer access (pedestrian and vehicular) and minimum on-site passenger-oriented facilities.

Several sites initially nominated for evaluation did not pass this test. Thus, they were dismissed from further analysis.

2.1 No Build Alternative

The No-Build Alternative, which involves no changes to the transportation facilities within the FEC corridor beyond those that have been currently planned and programmed, was evaluated as part of this study. Under this scenario, the existing freight operations and maintenance infrastructure by FECR would be maintained. Specifically, the No-Build Alternative would maintain FECR's operations as a freight provider within the FEC corridor assuming an annual growth of approximately 5%-7% between today and 2016 due to current FEC projects at the Port of Miami and Port Everglades and 3% after 2016.

Routine maintenance, safety improvements and as-needed track work would continue as planned. Also, the No-Build Alternative would include future planned and programmed roadway, transit, air and other intermodal improvements within the study area.

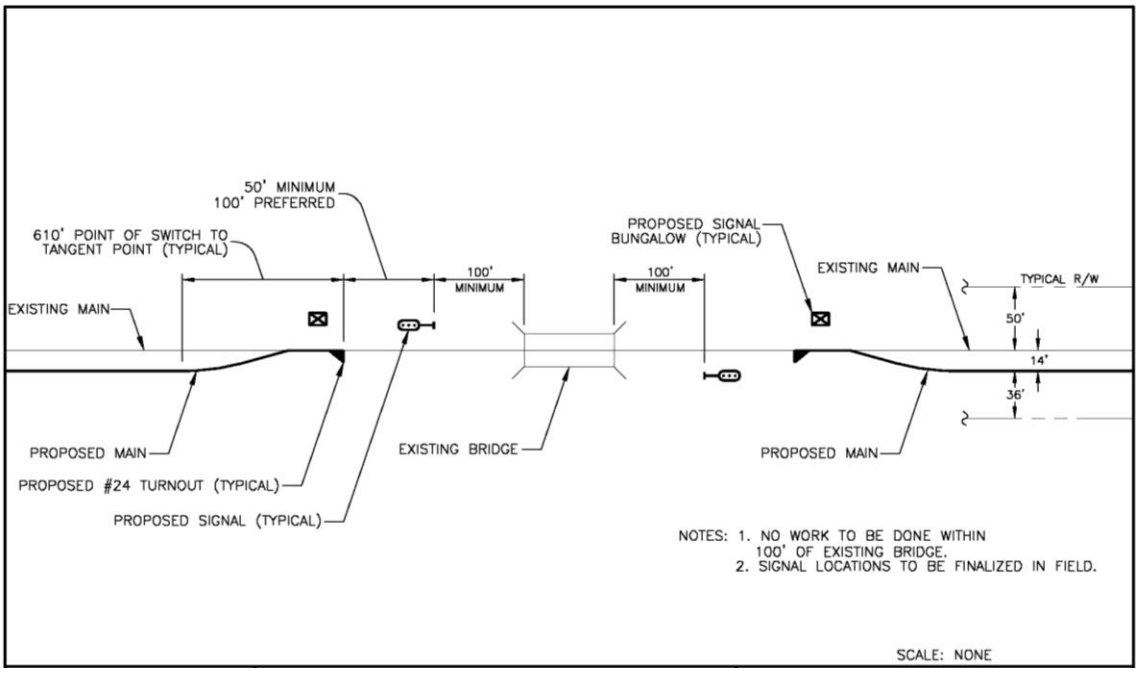
In the absence of passenger service within the FEC corridor, the need for stations and station-associated development is negated. It is assumed that land use development would continue consistent within the approved and adopted local comprehensive, master and/or visioning plans of each municipality but that only planned and programmed improvements will be completed.

Although the No-Build Alternative does not meet the purpose and need for the project, it was retained for detailed analysis in order to evaluate potential benefits and impacts associated with the proposed action in comparison to taking no action.

2.2 System Build Alternative

The proposed system build alternative will return the existing FEC corridor to a dual-track system allowing for the development and re-introduction of passenger service to southeast Florida. Infrastructure improvements are planned to be completed within the existing right-of-way (i.e. no additional right-of way acquisition is anticipated). Three existing bridge structures will have an additional second main track added to the existing deck, but no improvements to the structure's footprint will need to be made. Seven existing bridges will remain single track and will not be expanded to accommodate two tracks. See Figure 2 for typical bridge transition. Additionally, 49.2 miles of new track will be constructed in the corridor and 8.3 miles of existing track will be rehabilitated.

Figure 2. Typical Track Configuration at Single Track Bridge



2.3 Station Alternatives

Station alternatives are defined as those alternatives in West Palm Beach, Fort Lauderdale, and Miami for the development of stations and ancillary development needed to support the AAF project.

2.3.1 Downtown West Palm Beach

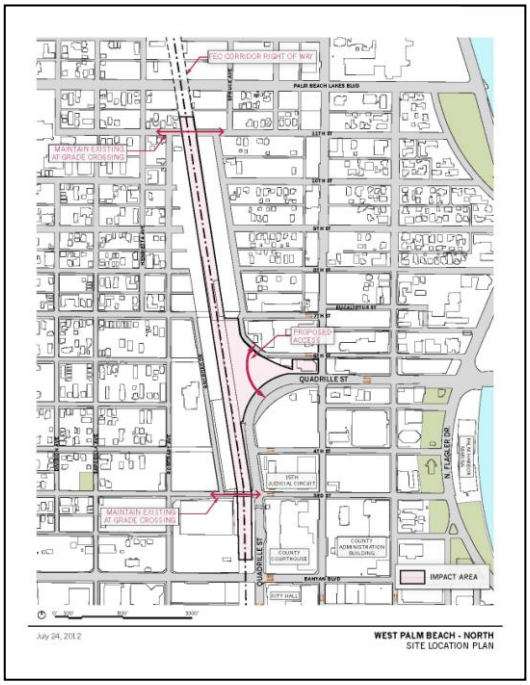
2.3.1.1 West Palm Beach – North

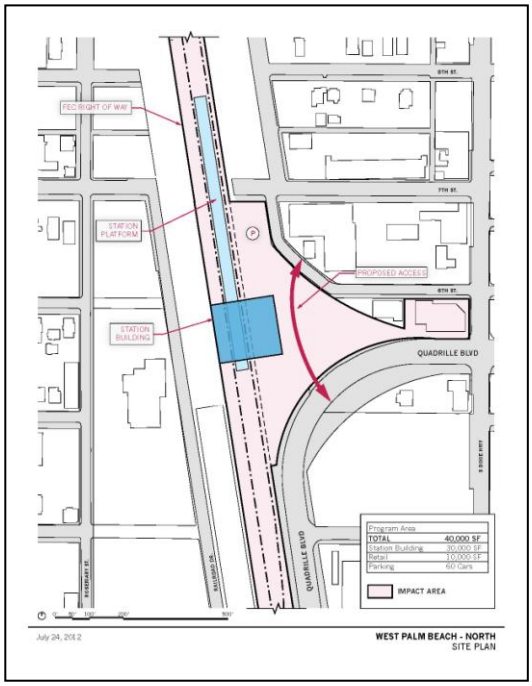
For this site location alternative, the AAF station would be located in the northern portion of Downtown West Palm Beach roughly between Third and Seventh Streets proximate to the 15th Judicial Circuit Courthouse Complex, County Courthouse, County Administration Building and City Hall.

The station's 800-foot long, 35-foot wide high-level platform would be located well north of Third Street because the platform must be on tangent track north of the curve. This site would take advantage of an uninterrupted stretch of FEC ROW without the need for new street closure, although it would block NW 7th Street which City Planners have identified for circulation improvement study.

The station would extend to the east side of the FEC ROW on unimproved, publicly controlled properties situated along Quadrille Boulevard including a parcel with frontage on S. Dixie Highway. The two-story station building would face the east. On-site customer facilities would include ticketing, secure waiting area for ticketed passengers located in space above the platform level, and retail. Parking to support the retail would be provided on site. No dedicated passenger parking would be provided on-site; the City supports use of existing parking capacity available within a close radius of the station.

West Palm Beach North Station





2.3.1.2 West Palm Beach – Central

For this site location alternative, the AAF station would be located further south than the option described above, roughly between Clematis Street and Fern Street. The two-story station building would be located to the west side of the FEC ROW on privately controlled property fronting Evernia Street. On-site customer facilities would include ticketing, secure waiting area for ticketed passengers located in space above the platform level, and retail. Parking to support the retail would be provided on site. No dedicated passenger parking would be provided on-site; the City supports use of existing parking capacity available within a close radius of the station.

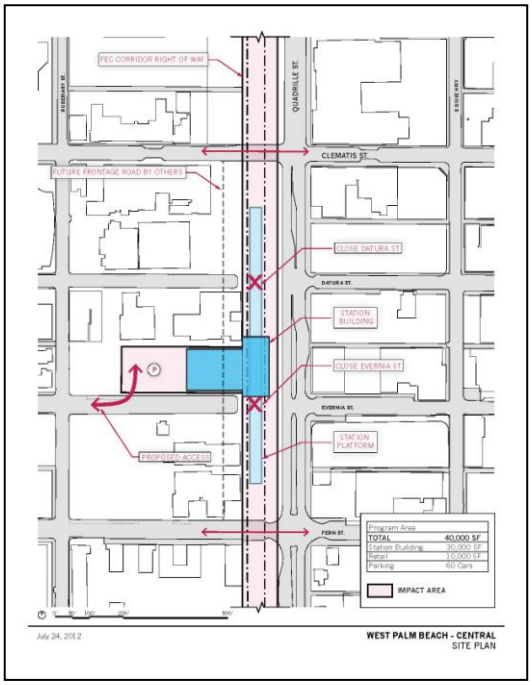
Within the FEC ROW, both main line tracks may be subject to alignment considerations subject to additional ROW from FDOT. The tracks could remain or would shift to the west side of the FEC ROW to avoid a portion of the ROW that was previously sold to FDOT. Both main line tracks would come back on existing alignment through Okeechobee Boulevard.

The north edge of the 35-foot wide center island platform would commence just south of Clematis Street and end north of Fern Street. The high-level platform would physically block the intersections at Datura and Evernia Streets, thus two street closures would be required, due to the short block grid. The City of West Palm Beach is receptive to this need.

On the west side of the ROW closures could be mitigated by creating a frontage road. The City's Master Plan notes "Incentives are offered for the dedication of right-of-way (ROW) which will allow for the construction of a new road adjacent to the west side of the FEC ROW between Gardenia Street and Clematis Street."

For this site's three-block edge along Quadrille Boulevard, significant streetscaping and traffic calming would be considered to support FDOT's desire to transform Quadrille Boulevard into a pedestrian-friendly corridor.

West Palm Beach Central Station



2.3.2 Downtown Fort Lauderdale

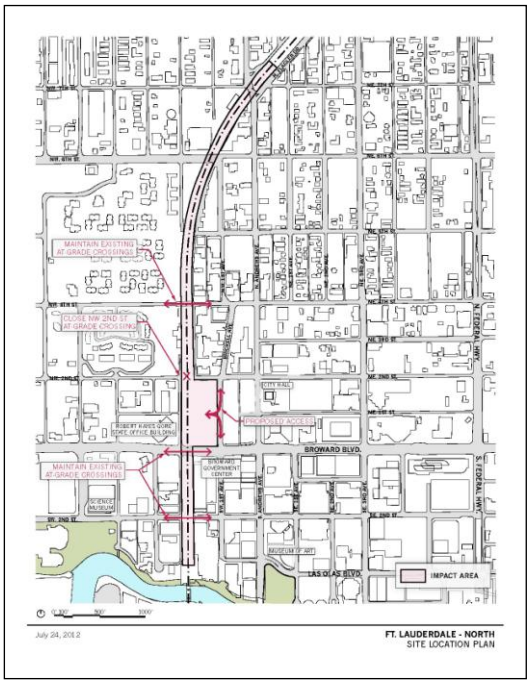
2.3.2.1 Fort Lauderdale – North

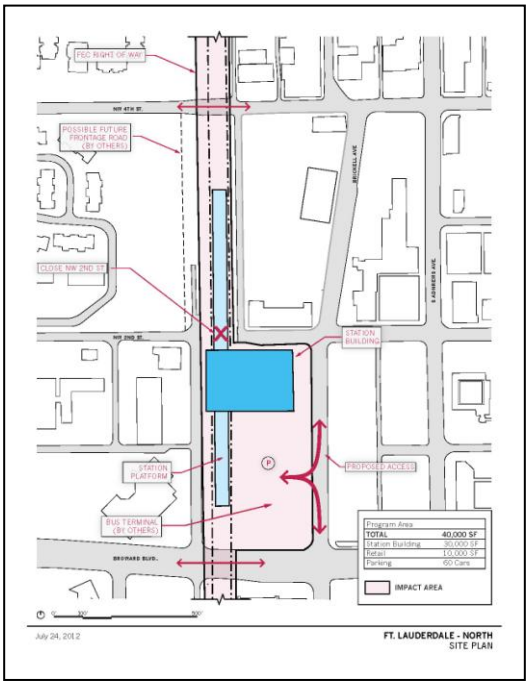
For this site location alternative, the AAF station would be located north of Broward Boulevard. The station's 800-foot long, 35-foot wide platform would be located north of Broward Boulevard and south of NW Fourth Street. The high-level platform would block one intersection and thus NW Second Street would be closed. The City is receptive to this need.

The station would extend to the east side of the FEC ROW onto the existing Broward Transit Center property bounded by Broward Avenue, NW First Avenue and NW Second Street. Along with the County and City, AAF would jointly redevelop the existing bus terminal site and other sites to accommodate, AAF passenger rail, regional and local buses, and future WAVE (light rail service).

AAF's on-site customer facilities would include ticketing, secure waiting area for ticketed passengers located in space above the platform level, and retail. Parking to support the retail would be provided on site. No dedicated passenger parking would be provided on-site; the City supports use of existing parking capacity available within a close radius of the station.

Fort Lauderdale North Station



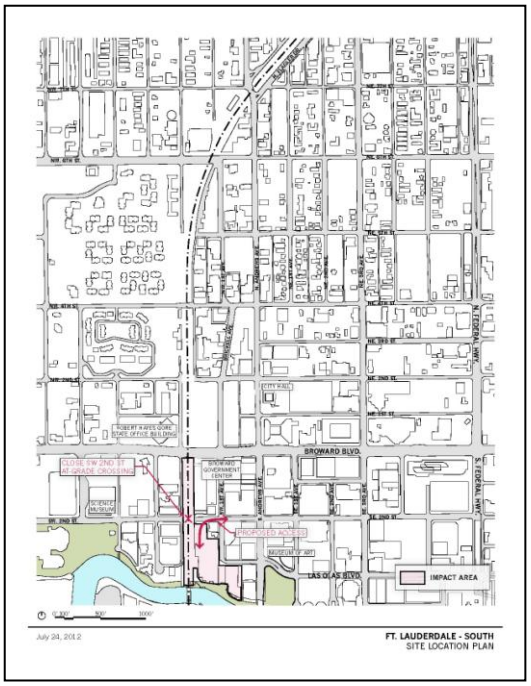


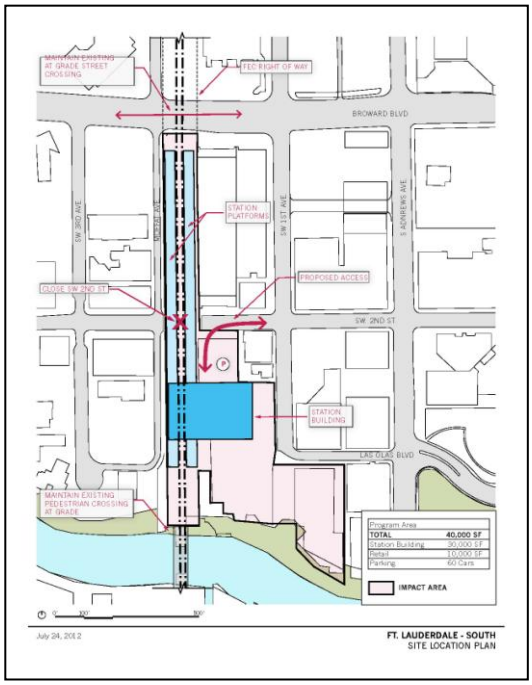
2.3.2.2 Fort Lauderdale – South

For this site location alternative, the AAF station would be located just south of Broward Boulevard and north of the existing railroad bridge over the New River. No track work would be undertaken within 100 feet of the existing bridge. To tie into the existing track alignment over the river crossing, the station would employ a side platform configuration in lieu of the center island platform described for the Fort Lauderdale-North alternative as well as those alternatives in West Palm Beach . The 800-foot long high-level platforms would block one intersection. The City has indicated that closing Broward Boulevard would be out of the question. In all likelihood closing SW Second Street would also be highly problematic. The latter is a necessity for the success of this station location alternative.

The station would extend to the east side of the FEC ROW onto the privately controlled Las Olas Riverfront property. AAF's on-site customer facilities would include ticketing, secure waiting area for ticketed passengers located in space above the platform level, and retail. Parking to support the retail would be provided on site. No dedicated passenger parking would be provided on-site; the City supports use of existing parking capacity available within a close radius of the station. The existing at-grade pedestrian crossing across the FEC tracks would be preserved.

Fort Lauderdale South Station





2.3.3 Downtown Miami / Government Center

Miami's downtown station will be located on a multi-block, nine-acre site owned by AAF's affiliate. This site was the location of the original Florida East Coast Miami Station built by Henry Flagler. The site is centrally situated at the heart of the City's Government Center district, an area characterized by a concentration of City, County, State and Federal government facilities, as well as cultural and civic uses. The Overtown neighborhood is located to the north of the site, and the Flagler Street retail corridor is to the south.

The area possesses strong transit connections the north and south (there are two Metrorail stations) and excellent connectivity with other destinations Downtown (there are two MetroMover stations) plus multiple convenient and well-used bus routes.

2.3.3.1 Miami – South At Grade

This station alternative is an at-grade option. At the north end, two main line tracks would pass under the Dolphin Expressway overpass at grade. The Port Lead would remain in service; the single track would peel off the main line at Eighth Street and head east into the Port of Miami. The passenger track arrangement would fan out to four tracks between Eighth and Fifth Streets, allowing for platforms south of 5th Street.

The Miami layout provides a combination of side and center island platforms. All four tracks would be accessed also by a low-level service platform. The 1,000-foot long platforms would be located between Fifth Street, which would remain open, and Third Street, which would need to be closed. Therefore the entire track and station platform footprint would realize its full width at the south edge of Fifth Street. Four tracks would cross Sixth and Fifth Streets at grade.

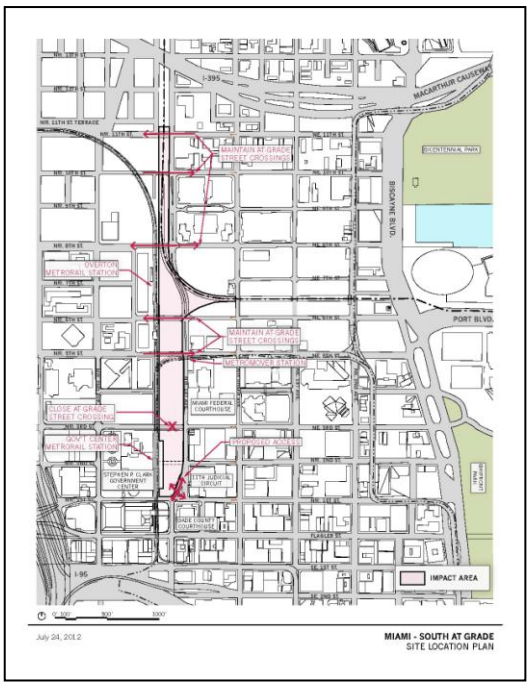
This alternative would not impact the existing Overtown Metrorail Station or existing Government Center Metrorail and Metromover Stations. The existing Metromover station at NE Fifth Street would also be maintained. However, it would not be possible to squeeze four passenger rail tracks and platforms under the existing Metromover alignment without altering the existing pier spacing; hence, the Metromover span through the property owned by AAF's affiliate would be rebuilt.

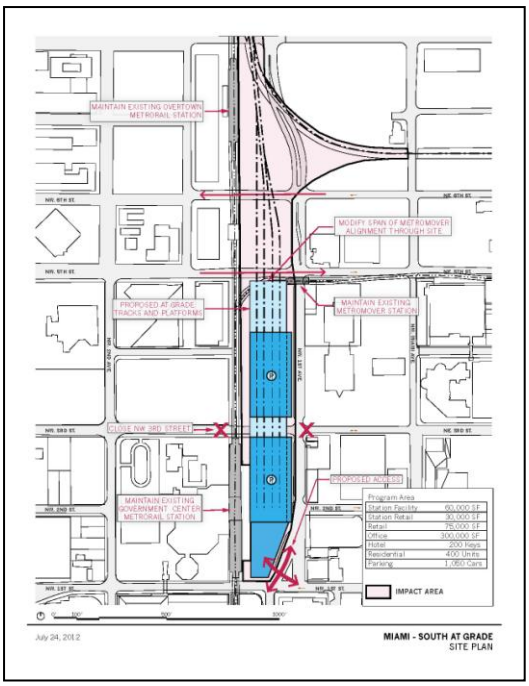
The AAF station would have multiple points of pedestrian access. Passenger facilities would be located at the south end of the platforms. Mixed-use development would be situated on the property south of the station platforms, incorporating the station's primary entry at NW First Street and NW First Avenue. The following TOD uses are anticipated:

- Retail
- Office
- Limited Service Hotel
- Residential
- Parking

The architectural program would be accommodated in several building masses. A fifteen-story office building would anchor the southern end of the property. A thirty-story residential and hotel tower would front on NW First Avenue at Third Street. Structured parking garages would be built in the air rights over the station platforms between Second and Third Streets and between Third and Fourth Streets.

Miami South at Grade Station





2.3.3.2 Miami – Central Elevated

This alternative is an elevated option. The station layout assumes the same passenger and service platform configuration as the at-grade alternative described above, except the station platform footprint would be accommodated entirely on an elevated viaduct structure approximately 45 feet above grade. This alternative shifts the platform closer toward the northern portion of the property owned by AAF's affiliate.

At the north end, the main line tracks would pass under the Dolphin Expressway overpass at grade, and single Port Lead track would peel off the main line at Eighth Street and heads east to the Port of Miami. Unlike the previous alternative, here the two Station Lead tracks would then immediately commence a maximum 3% incline onto the viaduct. The existing at-grade crossings at NW Eleventh and NW Tenth Streets would be eliminated due to the climbing passenger tracks; these streets would become blocked by a retaining wall.

Closure of Tenth and Eleventh Streets would be carefully mitigated and balanced by road capacity enhancements. For example, the frontage road located immediately west of the FECR ROW could potentially be extended to connect the street grid in the Overtown neighborhood to the existing Thirteenth or Fourteenth Street at-grade crossings under I-395 and the proposed viaduct underpass at Eighth or Ninth Streets.

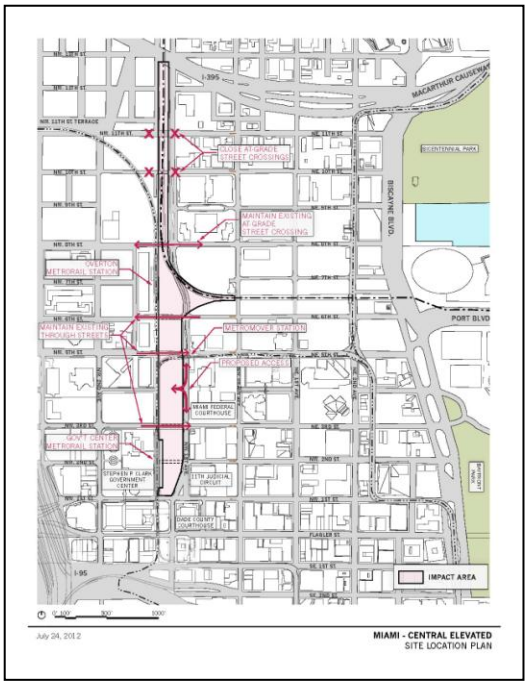
By Ninth Street the elevated railroad approaching the station would transition from retained embankment to viaduct structure. The Port Lead track would remain at grade for continued freight operations. A minimum overhead clearance of 23'-6" above top of rail would be maintained as the Port Lead track passes under the elevated Station Lead tracks.

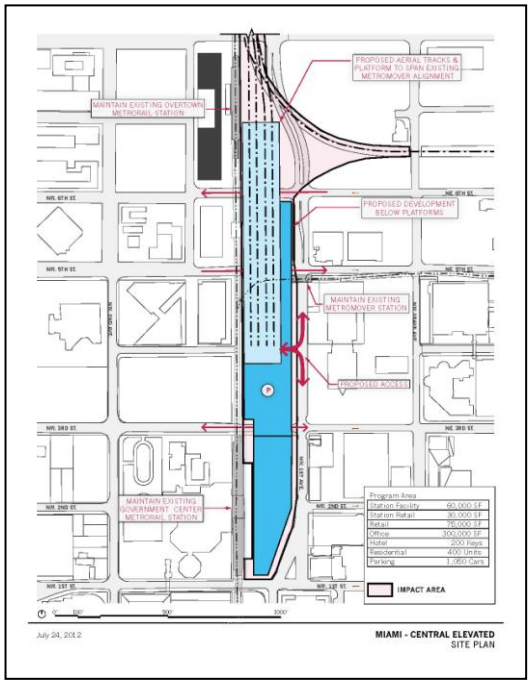
After the Station Lead tracks fan out into four tracks, the 1,000-foot long platform zone would commence just south of Seventh Street and end just south of Fourth Street. The entire track and station platform footprint thus would pass over Eighth Street, the Port Lead, Sixth Street, Fifth Street, and the Metromover. This alternative would not impact the major through streets of Eighth, Sixth and Fifth Street, the existing Overtown Metrorail Station or existing Government Center Metrorail and Metromover Stations.

The AAF station would have multiple points of pedestrian access. The headhouse's primary entry would front NW First Avenue opposite the Federal Courthouse. A three to four story liner of passenger-oriented functions and retail would create a continuous street wall extending to the north. Structured parking would be concealed behind the liner, under the tracks and platforms.

Mixed-use development would be situated immediately south of the station headhouse. The same TOD programs as the at-grade alternative described for the at-grade scenario would be anticipated, in roughly the same massing.

Miami Central Elevated Station





3.0 METHODOLOGY

This ESBA was prepared in compliance with Section 7 (c) of the Endangered Species Act of 1973, as amended. The following information is provided to determine the anticipated effects that the proposed construction of this project will have on those species that are federally endangered or threatened. Other wildlife and plants listed by the State of Florida are also discussed.

The potential involvement with listed species and critical habitat was determined through a review of existing data and literature, field surveys, and coordination with the US Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), Florida Fish and Wildlife Conservation Commission (FWC), and other agencies. Literature and data used included:

- USFWS South Florida Field Office's Listed Species along the corridor in Palm Beach, Broward and Miami-Dade Counties generated by their on-line Information, Planning, and Conservation (IPaC) decision support system ,
- USFWS's South Florida Multi-Species Recovery Plan,
- USFWS National Wetlands Inventory (NWI) database,
- FWC's Florida's Endangered Species, Threatened Species and Species of Special Concern,
- Florida Natural Areas Inventory (FNAI)'s Tracking List for Palm Beach, Broward and Miami-Dade County,
- FNAI's Online Biodiversity Matrix Mapper,
- FNAI's Online Field Guide to Rare Plants and Animals of Florida, and
- SFWMD Land Use Maps based on the FDOT Florida Land Use, Cover Classification System (FLUCCS).

Other databases and Geographic Information System (GIS) datasets managed by USFWS and FWC were used to identify known locations of listed species and potential listed species habitat occurring within or near the project corridor. Databases reviewed included information on designated critical habitat, species consultation areas, scrub jay habitat, bald eagle nests, wood stork nests, wading bird nests, and indigo snake occurrences.

Qualified personnel conducted field reconnaissance and aerial photo interpretation throughout the study area to identify areas of potential habitat for protected species. Field surveys were conducted in July 2012 to determine if the project corridor contains habitat for previously identified listed species, to observe the presence of wildlife using the corridor, and to determine if any previously unidentified listed species occur in the area.

4.0 VEGETATIVE COMMUNITIES

The project corridor is along an existing FEC rail line. The existing FEC railroad track crosses through or close to a number of different habitat types found along Florida's east coast; however, much of the area is urban in character with limited habitat potential. Between the West Palm Beach and Downtown Miami the AAF study corridor is adjacent to various urban land uses, and natural areas/parklands

including Biscayne Bay, wetlands, coastal hardwood hammocks, xeric scrub/shrub, and open/vacant land. Direct impacts would be limited to the existing FEC right of way.

Vegetated areas are limited to the railroad right of way and adjacent landscaped areas, parks and natural areas. Vegetation noted during the site visits included red mangroves (R*hizophora mangle*), white mangroves (*Laguncularia racemosa*), sabal palms (*Sabal palmetto*), strangler figs (*Ficus aurea*), West Indies mahogany (*Swietenia mahagoni*), seagrape (*Coccoloba uvifera*), Brazilian pepper (*Schinus terebinthifolia*), buttonwoods (*Conacarpus erectus*), and gumbo limbo (*Bursera simaruba*).

The FEC tracks run adjacent to the following public land (See Figure 3). Where the public lands run parallel to the FEC right-of-way, there is a 10 – 20 foot maintained roadway/buffer between the inside of the property fence and the natural area:

Hypoluxo Scrub Natural Area: This 91.76 acre site is owned and managed by Palm Beach County. This site is mostly scrub and scrubby flatwoods. Most of the site was cleared in the early 1960s and the natural communities are still in the process of regenerating. A small Florida scrub-jay population lives on this site and also uses several nearby smaller scrub sites.

Seacrest Scrub Natural Area: This 53.69 acre site is owned and managed by Palm Beach County. This site is predominantly scrub and scrubby flatwoods. Most of it was cleared in the 1920s for pineapple farming and the natural communities are still in the process of regenerating.

Leon M. Weekes Environmental Preserve: This 12 acre site is co-owned by Palm Beach County and the Town of Delray Beach and managed by the Town of Delray Beach. The site is scrub habitat with paved and natural trails. The old sand pine scrub burned in late 1990s near the railroad and now is mostly occupied by scrub oaks. Gopher tortoise burrows are found on the property.

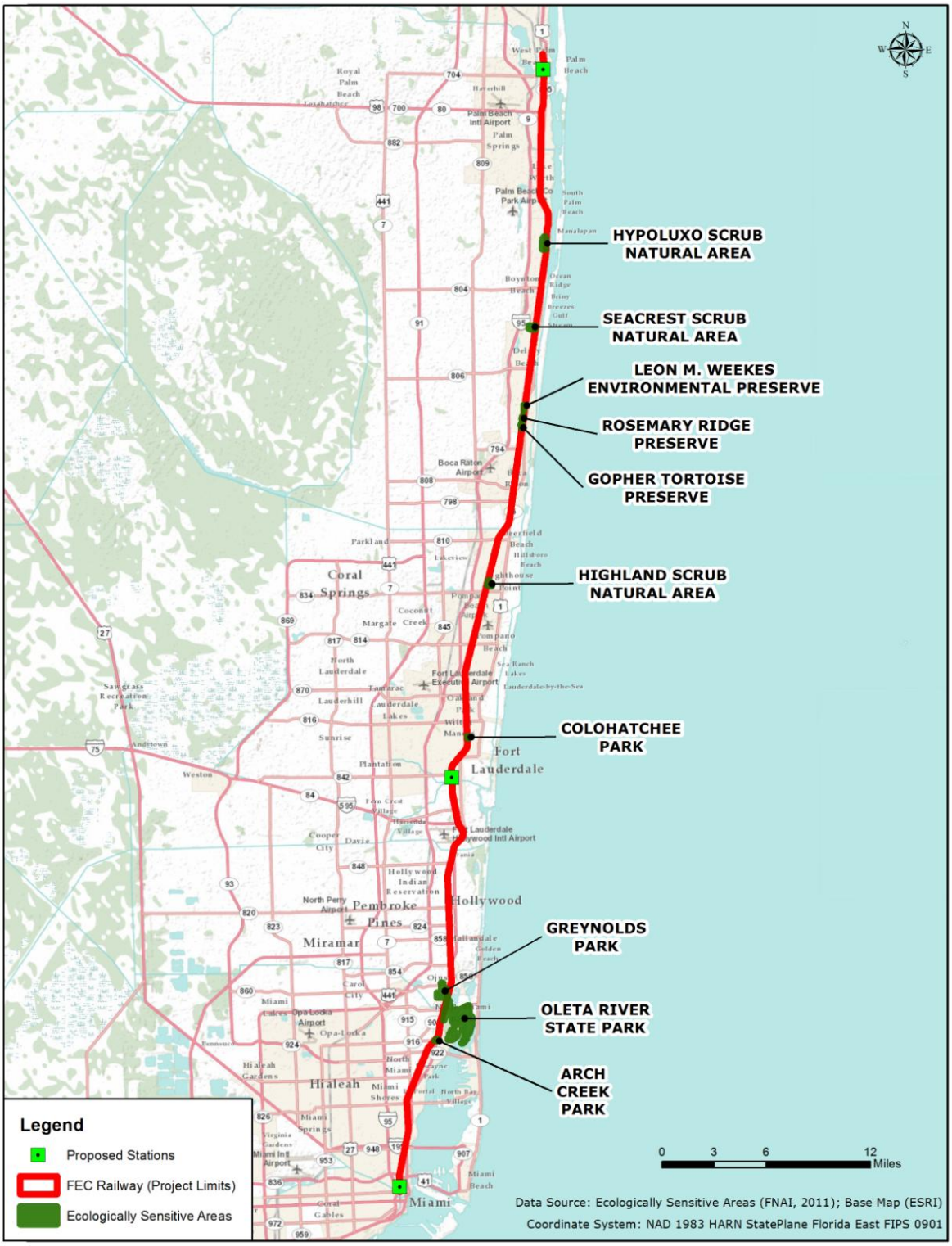
Rosemary Ridge Preserve: This 7.29 acre site is owned and managed by the City of Boca Raton. The site consists of xeric sand pine scrub.

Gopher Tortoise Preserve: This 8.8 acre site is owned and managed by the City of Boca Raton. The site consists of xeric sand pine scrub.

Highland Scrub Natural Area: This 34.27 acre site is owned and managed by Broward County. The site consists of scrub oak and sand pine and is considered one of Broward's last substantial remaining sand pine scrub communities. The site is characterized by loose white sand with a canopy of sand pine and scrub oak and a subcanopy of saw palmetto, small scrub oaks, gopher apple, and prickly pear cactus.

Colohatchee Park: This 7.21 acre site is owned and managed by the City of Wilton Manors. The site consists of a mangrove preserve along the Middle River dominated by red and white mangroves.

Figure 3. Natural Areas along the FEC Corridor



Greynolds Park: This 240.75 acre site is owned and managed by Miami-Dade County. Once the site of a rock quarry, the site consists of a variety of habitats, including 1 acre of pineland, 18 acres of hammock, 26 acres of coastal habitat, and 31 acres of lake. The hammock is one of the last well-protected natural areas of northern Miami-Dade County.

Oleta River State Park: This 1032.84 acre site is owned by Trustees of the Internal Improvement Trust Fund and managed by the Florida Department of Environmental Protection. Florida's largest urban park, Oleta River State Park borders the north shore of Biscayne Bay and contains the mouth of the Oleta River. Along the Oleta River, at the north end of the park, a large stand of mangrove forest is present. The bulk of the uplands are dredge spoil, and exotic species are a major problem, but natural vegetation has reclaimed 468 acres of tidal swamp.

Arch Creek Park: This 8.5 acre site is owned and managed by Miami-Dade County. The site consists of 7 acres of hammock and 1 acre of coastal habitat. The park was created around a natural limestone bridge formation that was once part of an important Indian trail and is designated as a Florida State Historical Preserve.

5.0 FEDERALLY LISTED SPECIES

Since the project vicinity travels through a highly urbanized area within Palm Beach, Broward, and Miami-Dade Counties, and impacts are limited to the existing right-of-way, the proposed project would have a minimal effect on wildlife and habitat. As shown in Appendix A, the Official USFWS Species list generated with the IPaC on-line system identified 56 endangered and threatened plant and animal species that may occur within the general project vicinity. The habitat requirements and known locations of most of the species identified in the IPaC on-line system ensure that these species will not be found within or near the project corridor. Furthermore, the project area is almost entirely developed or previously impacted and the amount of natural area proposed to be affected is minimal.

Wildlife species observed during field visits were limited and involved species adapted to urban environments, including a raccoon (*Procyon lotor*), boat-tail grackles (*Quiscalus major*), northern mockingbirds (*Mimus polyglottos*), mourning doves (*Zenaida macroura*), white ibis (*Eudocimus albus*), osprey (*Pandion haliaetus*), black-hooded parakeets (*Nandayus nenday*), red-shouldered hawk (*Buteo lineatus*), northern cardinal (*Cardinalis cardinalis*), green iguana (*Iguana iguana*), red-eared slider (*Trachemys scripta elegans*), southern black racer (*Coluber constrictor priapus*), striped mullet (*Mugil cephalus*), mangrove snapper (*Lutjanus griseus*), and land crabs (*Cardisoma guanhumi*). A state listed threatened gopher tortoise (*Gopherus polyphemus*) was observed in the Highland Scrub Natural Area adjacent to the rail corridor along with several burrows at other pine scrub locations. No Federally-listed species were recorded during the field surveys conducted for this study.

The following table (Table 1) lists those endangered and threatened plant and animal species that have a potential to occur within or near the project corridor based on the USFWS species list, species consultation areas, and/or available habitat. Although recently delisted, this list includes the bald eagle

since it is undergoing continued monitoring and is federally protected under the Bald and Golden Eagle Protection Act. None of the plant species observed within the project corridor are designated Endangered or Threatened by the USFWS. Similarly no wildlife species listed in the table were encountered during field visits to the project corridor. Some of the birds listed may forage within the project vicinity but are unlikely to nest there.

Table1. Federally Listed Species Potentially within the Project Area

Common Name	Scientific Name	Potential Occurrence	Status
Fish			
Smalltooth Sawfish	*Pristis pectinata*	Low	E
Reptiles			
American Alligator	*Alligator mississippiensis*	Moderate	T (S/A)
American Crocodile	*Crocodylus acutus*	Moderate	T
Eastern Indigo Snake	*Drymarchon corais couperi*	Moderate	T
Green Sea Turtle	*Chelonia mydas*	Low	E
Hawksbill Sea Turtle	*Eretmochelys imbricata*	Low	E
Leatherback Sea Turtle	*Dermochelys coriacea*	Low	E
Loggerhead Sea Turtle	*Caretta caretta*	Low	T
Birds			
Bald eagle	*Haliaeetus leucocephalus*	Low	Delisted
Everglades Snail Kite	*Rostrhamus sociabilis plumbeus*	Low	E
Florida Scrub-jay	*Aphelocoma coerulescens*	High	T
Kirtland's Warbler	*Dendroica kirtlandii*	Low	E
Piping Plover	*Charadruis melodus*	Low	T
Red Knot	*Calidris canutus rufa*	Low	C
Wood stork	*Mycteria americana*	Moderate	E
Mammals			
Florida Bonneted bat	*Eumops floridanus*	Low	C
Southeastern Beach Mouse	*Peromyscus polionotus niveiventris*	Moderate	T
West Indian Manatee	*Trichechus manatus*	High	E/CH
Plants			
Johnson's Seagrass	*Halophila johnsonii*	Low	T/CH
Tiny polygala	*Polygala smallii*	Low	E

Table Notes:

E = Endangered
T = Threatened
T(S/A) = Threatened - Similarity of Appearance
C = Candidate
CH = Critical Habitat

The proposed project is expected to have "No Effect" on those species identified in Table 1 with a low potential of occurrence within the project area due to specific habitat requirements and known ranges.

The following discusses the potential effect, if any, the proposed project may have on those species with a moderate to high potential to be found within the project area.

5.1 American Alligator (Alligator mississippiensis)

The American alligator is classified as Threatened due to Similarity of Appearance (to the endangered American crocodile) by the USFWS. Though once listed as Endangered, the population has rebounded to the point that it is widespread and often encroaches into urban waterways. 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 has a moderate potential of occurrence in canals and other waterbodies within the study area; however, there will be no construction in or over the waterways and no 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 anticipated to have “No Effect” on the American alligator or its preferred habitat.

5.2 American crocodile (*Crocodylus acutus*)

The American crocodile is listed as endangered by both the USFWS. 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.

The southern half of the project corridor lies within the USFWS Consultation area for the crocodile (Figure 4); therefore, the American crocodile has a moderate potential of occurrence within the project corridor. However, due to the high level of urbanization within the corridor and lack of suitable habitat, the proposed project is anticipated to have "No Effect" on the American crocodile or its preferred habitat.

5.3 Eastern Indigo Snake (*Drymarchon corais couperi*)

The eastern indigo snake is listed as threatened by the USFWS. The eastern indigo snake is the largest of all North American snakes and is easily recognized by its size and distinctive iridescent black coloration. Today the range of the indigo snake covers all of Florida and southern Georgia, though historically it was much larger. 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.

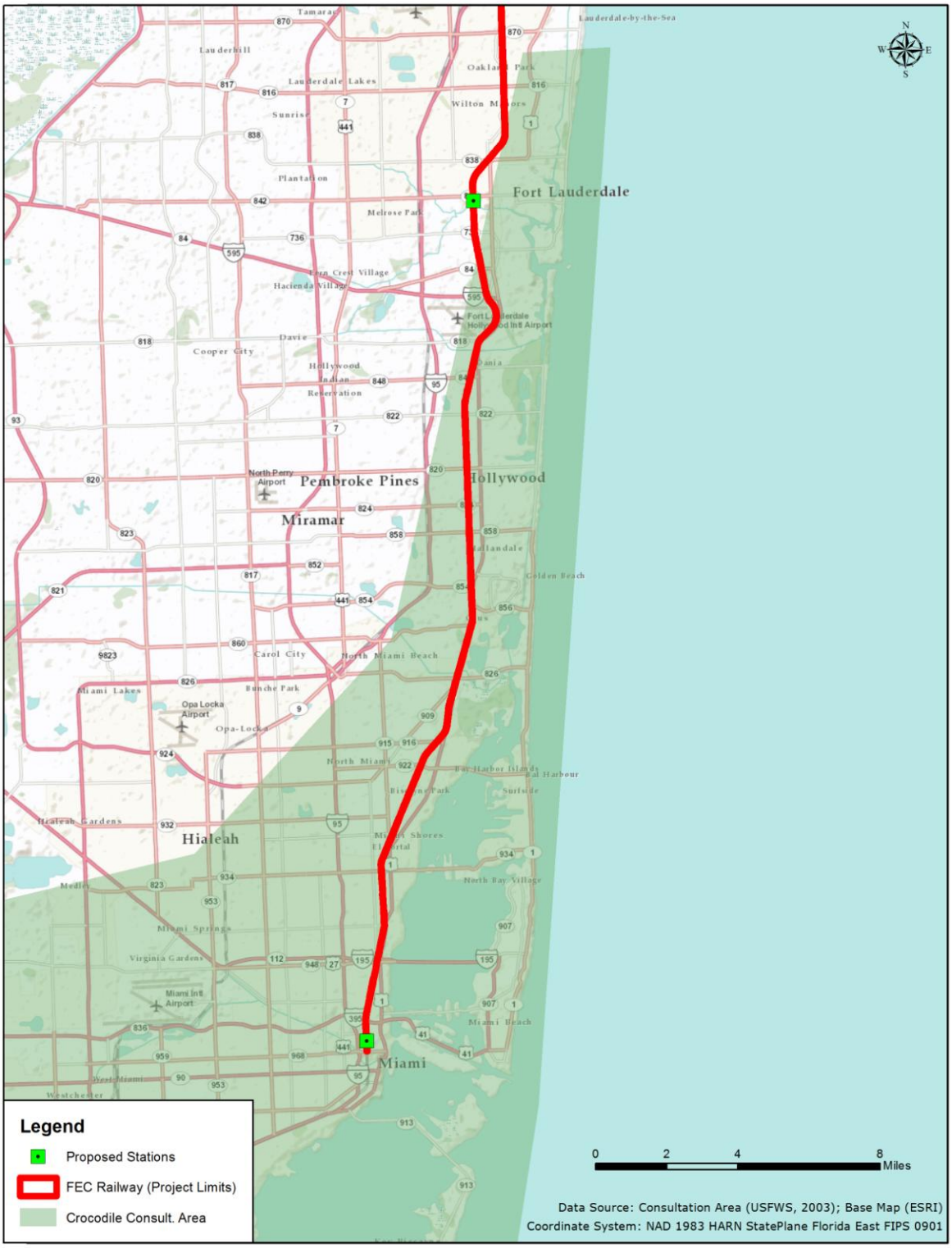
Indigo snakes are found in a wide variety of habitats including mangrove swamps, wetland prairies, xeric pinelands, and scrub. Though generalists in habitat type, suitable habitat must also contain some sort of burrow or underground shelter that the snake uses during winter months.

Indigo snakes are diurnal and wide-ranging, requiring large tracts of undisturbed land. This combination makes them particularly rare because there is so little remaining unfragmented land in Florida, and where they are present they are often readily visible to poachers because of their size and diurnal habit. 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. 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.

No eastern indigo snakes have been documented in the project area. Within the study area, habitat capable of supporting indigo snakes is limited to the adjacent scrub pine and scrub oak areas. It is unlikely that indigo snakes are present within the project corridor since any supporting habitat is isolated fragments of natural habitat surrounded by developed urban land. Snake burrows were not observed during site visits.

Although the presence of the Indigo snake is unlikely, project construction could potentially impact this species during heavy equipment usage should the snake occur within the existing right of way. Due to the frequency of disturbance within these areas, only transient use of the existing right-of-way would be expected. Therefore to avoid conflicts between this snake and construction, the USFWS *Standard Protection Measures for the Eastern Indigo Snake*, will be incorporated into the construction plans and specifications.

Figure 4. American Crocodile Consultation Area



The USFWS's *Eastern Indigo Snake Programmatic Effect Determination Key* was consulted and a determination of "Not Likely to Adversely Affect" was achieved for the proposed project due to adjacent suitable habitat of less than 25 acres along with the assurance that the USFWS *Standard Protection Measures for the Eastern Indigo Snake* will be employed during project construction and any permits will be conditioned that all gopher tortoise burrows will be excavated prior to site manipulation in the vicinity of the burrow and suitable holes will be inspected each morning before site activities.

5.4 Florida Scrub Jay (*Aphelocoma coerulescens*)

The USFWS list the Florida scrub-jay as threatened due to loss, fragmentation, and degradation of scrub habitats throughout Florida. The scrub-jay is a relict species of fire-dominated oak scrub habitat that occurs on well drained sandy soils in peninsular Florida. Scrub-jays are extremely habitat-specific, sedentary, and territorial. Florida scrub-jays form family groups; fledglings remain with their parents in their natal territory as helpers. They are similar in size and shape to the blue jay, but differ significantly in coloration. In addition, unlike the blue jay, scrub-jays lack a crest.

The scrub-jay can be found in coastal and ridge scrub areas throughout central Florida but were never considered abundant on the Atlantic coast south of Martin County. There are three defined classes of scrub-jay habitat:

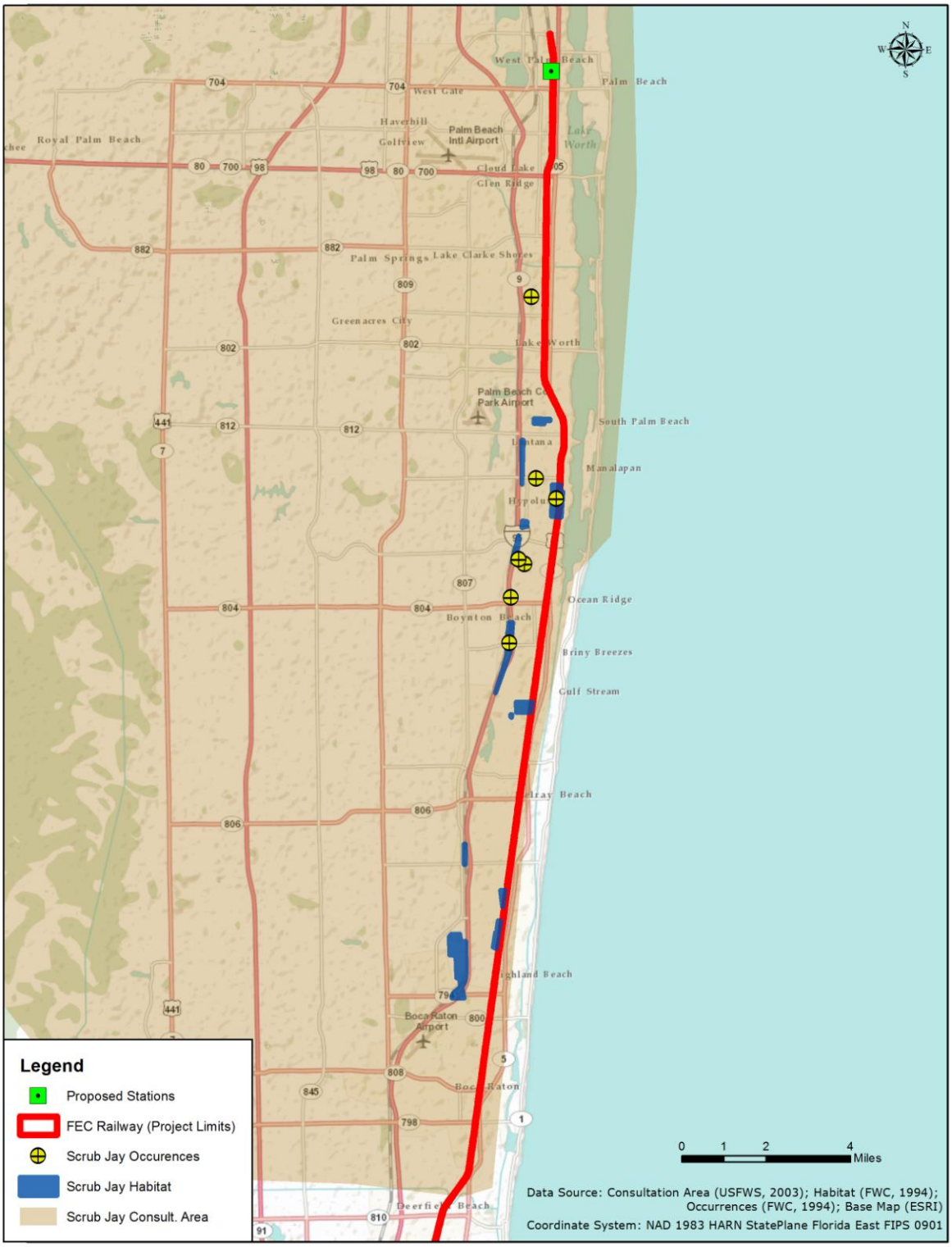
- Type I – any upland plant community in which percent cover of the substrate by scrub oak species is 15 percent or more.
- Type II – any plant community, not meeting the definition of Type I habitat, in which one or more scrub oak species is represented.
- Type III – any upland or seasonally dry wetland within 400 m (0.25 mi) of any area designated as Type I or II habitats.

The proposed project lies along the eastern edge of the USFWS consultation area for scrub jays within Palm Beach County with suitable habitat adjacent to the corridor in five locations: Hypoluxo Scrub Natural Area (Type I), Seacrest Scrub Natural Area (Type II), Leon Weekes Environmental Preserve (Type II), Rosemary Ridge Preserve (Type II), and Gopher Tortoise Preserve (Type II). In addition, scrub jays have been documented in the Hypoluxo Scrub Natural Area adjacent to the corridor and several other areas along the corridor (Figure 5). Therefore, scrub jays have a high potential to occur within the project area. However, since project construction and operation will result in little change to the corridor with regard to scrub jay habitat, the project is "Not Likely to Adversely Affect" scrub jays or their preferred habitat.

5.5 Wood Stork (*Mycteria Americana*)

The wood stork is a gregarious species which nests in colonies (rookeries), and roosts and feeds in flocks, often in association with other species of long-legged water birds. The U.S. wood stork nesting population is listed as endangered by the USFWS.

Figure 5 – Scrub Jay Habitat



Wood storks use freshwater and estuarine wetlands as feeding, nesting, and roosting site. 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). Although wood storks are not habitat specialists, their needs are exact enough, and available habitat is limited enough, so that nesting success and the size of populations are closely regulated by year-to-year differences in the quality and quantity of suitable habitat. Wood storks are especially sensitive to environmental conditions at feeding sites; thus, birds may fly relatively long distances, either daily or between regions annually, seeking adequate food resources. All available evidence suggests that regional declines in wood stork numbers have been largely due to the loss or degradation of essential wetland habitat seasonally important to the species.

The USFWS 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. The Core Foraging Area (CFA) is a 30-kilometer (18.6-mile) zone surrounding the colony. The guidelines recommend restrictions in each of the zones that correspond to nesting and non-nesting season cycles.

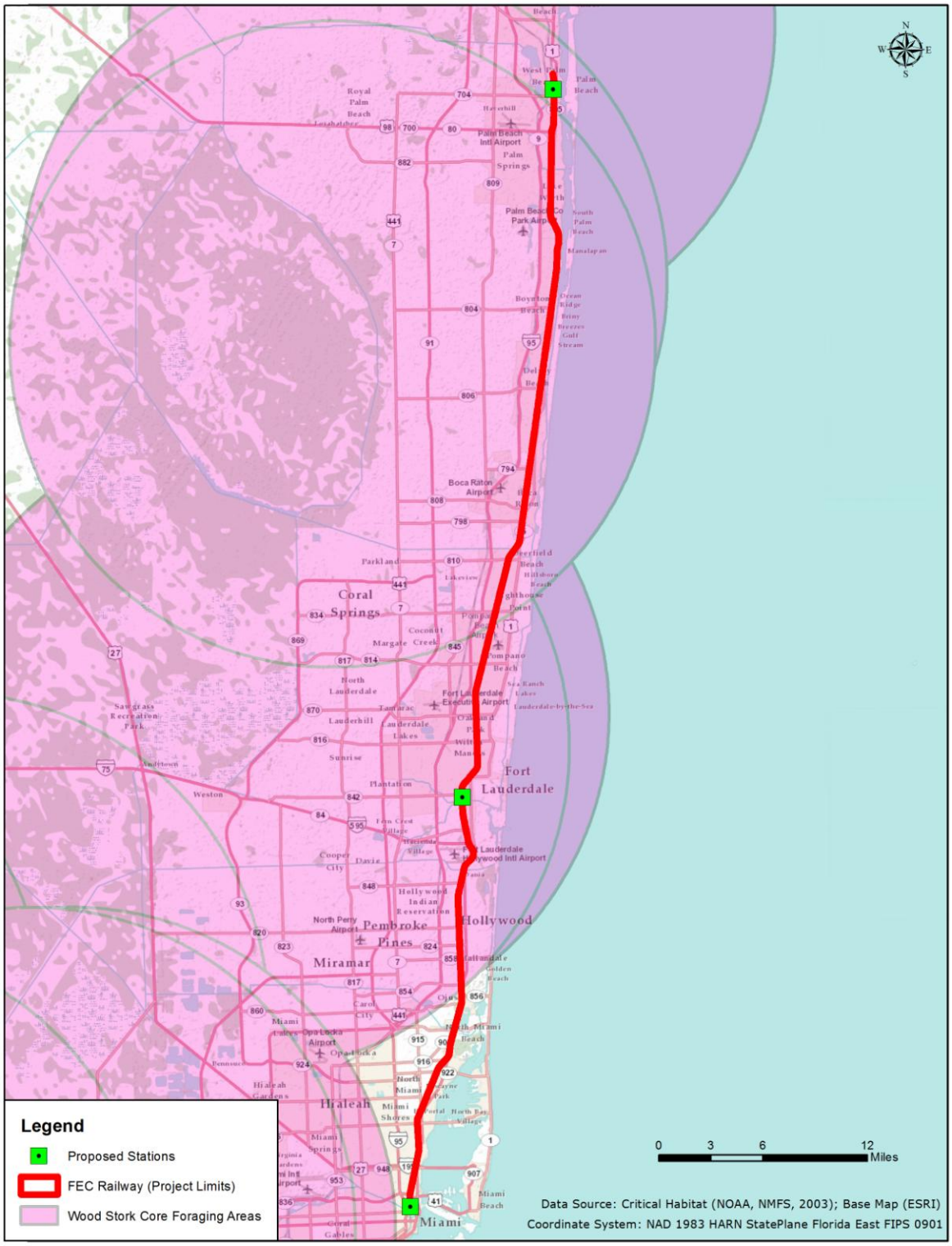
According to information obtained from the FWC, the entire project within Broward and Palm Beach Counties lies within CFAs of four active wood stork colonies with the closest colony approximately 6.5 miles northwest of the projects northern terminus. Figure 6 shows the location of the CFAs for the wood stork colonies identified by FWC within the project area. Due to the urban nature of the corridor, occurrence of this species within the project corridor would be transitory in nature. Any potential foraging areas would provide sub-optimal habitat for wood storks due to high noise levels and human activity. Furthermore, there is no evidence of breeding or foraging occurring within the project area. Though wood storks may use the waterways adjacent to the project as foraging grounds, the project will not alter these areas.

The USFWS's programmatic *Wood Stork Effect Determination Key* was consulted and a determination of "Not Likely to Adversely Affect" was achieved for the proposed project based on lack of impact to suitable foraging habitat. In addition, Wood Stork Technical Special Provisions will be incorporated into the contractor's bid documents for use during project construction.

5.6 Southeastern Beach Mouse (*Peromyscus polionotus niveiventris*)

The southeastern beach mouse is listed as a threatened species by the USFWS. It is one of seven subspecies identified as "beach mice". Historically, the southeastern beach mouse occurred along approximately 174 miles of Florida's east coast barrier islands, from Ponce Inlet, Volusia County to Hollywood, Broward County. However, according to the most recent published literature, this subspecies is currently limited to approximately 50 miles of dune habitat in Volusia County, Brevard County, and within pockets of suitable habitat in Indian River and St. Lucie counties. The beach mouse is believed to have been extirpated from Fort Pierce Inlet, St. Lucie County south through Broward County.

Figure 6. Wood Stork Core Foraging Areas



However, population data is limited in South Florida and population trends are difficult to determine for the southeastern beach mouse.

Dune vegetation, particularly sea oats (*Uniola paniculata*) within the primary coastal dunes is considered essential habitat of the southeastern beach mouse. This beach mouse has also been reported from sandy areas of adjoining coastal strand vegetation, which refers to a transition zone between the foredune and the inland plant community. Beach mouse habitat is heterogeneous, and distributed in patches that occur both parallel and perpendicular to the shoreline.

The primary threat to the survival and recovery of the southeastern beach mouse is the continued loss and alteration of coastal dunes. Large-scale commercial and residential development on the Atlantic coast has permanently altered beach mouse habitat in Palm Beach and Broward counties. In addition to increased urbanization, coastal erosion is responsible for the loss of the dune environment along the Atlantic coast, particularly during tropical storms and hurricanes. The construction of inlets has exacerbated coastal erosion problems along the Atlantic coast.

The coastal areas of Palm Beach, Broward and Miami-Dade Counties lie within the USFWS's southeastern beach mouse consultation area. However, since the project corridor does not have suitable habitat for the beach mouse and is located south of its current known range, the proposed project is expected to have "No Effect" on the southeastern beach mouse or its habitat.

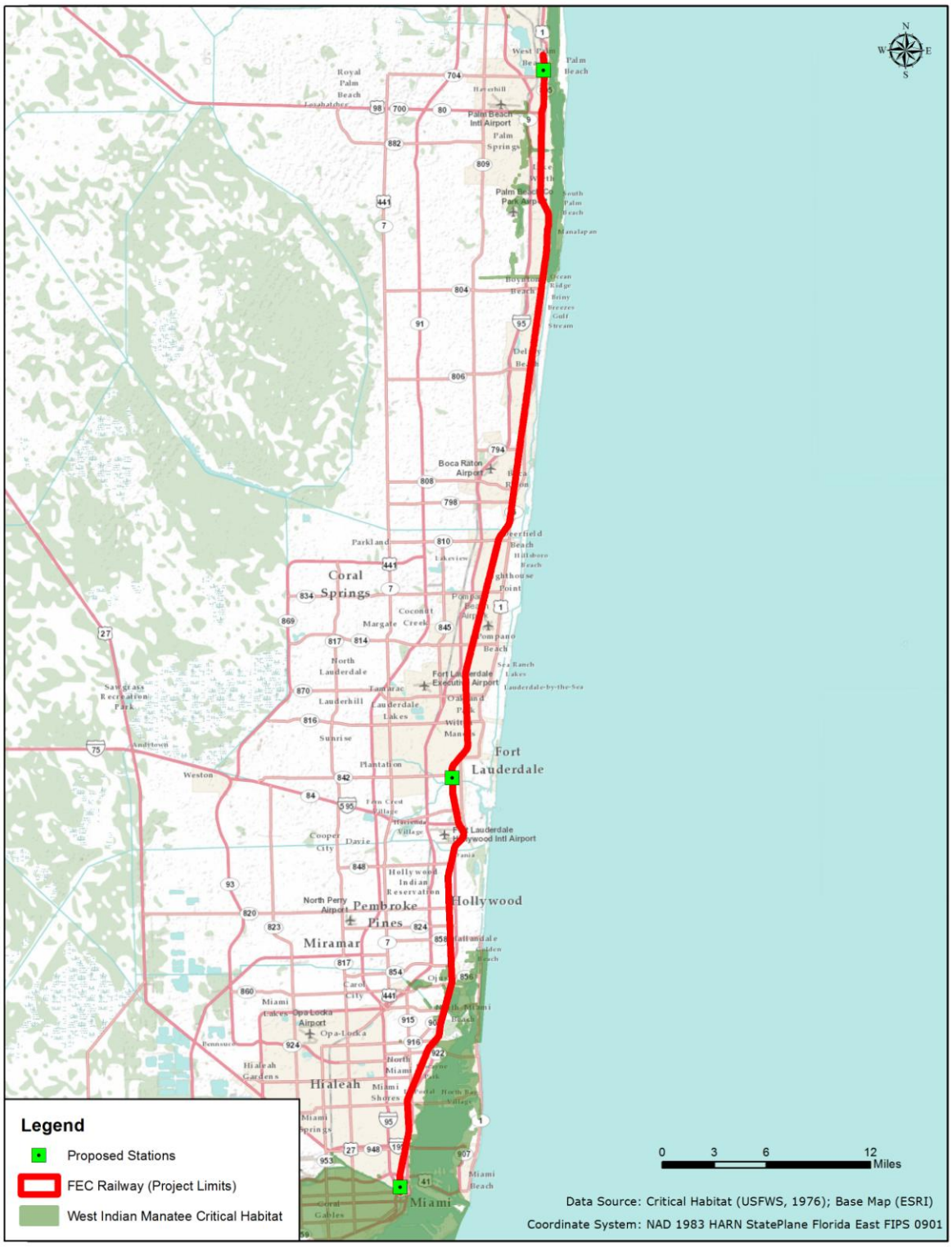
5.7 West Indian Manatee (*Trichechus manatus*)

The West Indian Manatee is classified as endangered by the USFWS, and receives further protection under the U.S. Marine Mammal Protection Act of 1972 and the Manatee Sanctuary Act of 1978. Portion of the project in Miami-Dade and Palm Beach Counties lie within designated Critical Habitat for the manatee (Figure 7). Chapter 68C-22.009, 68C-22.010 and 68C-22.025 of the Florida Administrative Code establishes Manatee Protection Zones in Palm Beach, Broward, and Miami-Dade Counties, respectively.

The manatee population was very near extinction during the 1950s and 60s but with increased protection the species has rebounded. Accurate population counts remain problematic because of a lack of appropriate census methods.

The range of the manatee is a function of water temperature. The manatee is confined to Florida coastal, estuarine, and riverine waters during winter months, but during the summer months its range often includes neighboring states. Habitat requirements include warm water, freshwater sources, plentiful aquatic vegetation for foraging and waterways of sufficient depth and width to allow passage. Manatees are frequently found in large congregations at warm water discharge points such as nuclear cooling facilities or natural springs where warm fresh water is abundant and conditions are favorable for vegetative blooms.

Figure 7. Manatee Critical Habitat



The greatest threats to manatee populations are boat propellers and periods of unseasonably cold weather. Gathering of manatees around warm water discharge points makes the species more susceptible to single catastrophic events, but more importantly benefits the species by providing a cold weather refuge.

The canals and waterways adjacent to the study area are accessible to manatees so there is a moderate potential for manatees to occur within the corridor; however, there is no proposed work within or adjacent to these areas. Therefore, since the project is not located in or over waters accessible to manatees and does not directly or indirectly affect manatees, the construction and operation of the project would have "No Effect" on the manatee or its habitat based on the USACE Manatee Key. In addition, the *Standard Manatee Conditions for In-Water Work* shall be utilized to ensure protection of the West Indian Manatee during construction of the project.

5.8 State Listed Species and Other Considerations

5.8.1 State Listed Species

Though the primary purpose of this report is to address potential impacts to species protected under the Federal Endangered Species Act, the following additional information is provided for consideration. Table 2 identifies the state listed and FNAI identified rare species not previously discussed that could potentially be encountered in the vicinity of the project corridor.

The Florida Fish and Wildlife Conservation Commission (FWC) maintains the state list of animals designated as endangered, threatened, or species of special concern/ in accordance with- Rules 68A-27.003, 68A-27.004, F.A.C., and 68A-27.005, F.A.C., respectively. The state lists of plants that are designated as endangered, threatened or commercially exploited is administered and maintained by the Florida Department of Agriculture and Consumer Services (FDACS) via Chapter 5B-40, F.A.C.

If the burrowing owl, which has been observed on several occasions in the vicinity of the project corridor in Broward and Palm Beach Counties (Figure 8), builds a nest within the project corridor or a construction staging area, a relocation permit may need to be obtained from the FWC if impacts to the nest could not be avoided. Likewise gopher tortoises have been detected in the scrub habitats adjacent to the corridor (Figure 9) and the appropriate permits would be required if impacts could not be avoided within the project corridor.

Several birds listed as Species of Special Concern by the FWC could be encountered within the project area, including little blue heron (*Egretta caerulea)*, snowy egret (*Egretta thula*), tri-color heron (*Egretta tricolor*), and white ibis (*Eudocimus albus*). Though none of these species were seen during field visits, all of them may use the waterways in the vicinity of the project area as foraging grounds. Many of these species are accustomed to human activity and any use of the project area would be transient. Since none of these species were observed during field visits and the project will not alter foraging grounds, no impacts are anticipated to any of the above mentioned species.

Table 2. State Listed and Rare Species Potentially Within Project Area

Common Name	Scientific Name	Potential Occurrence	State Status
Fish			
Mangrove Rivulus	*Rivulus marmoratus*	Low	SSC
Reptiles			
Gopher Frog	*Rana capito*	Moderate	SSC
Gopher Tortoise	*Gopherus polyphemus*	High	ST
Rim Rock Crowned Snake	*Tantilla oolitica*	Low	ST
Birds			
Florida Burrowing Owl	*Athene cunicularia floridana*	Moderate	SSC
Little blue heron	*Egretta caerulea*	High	SSC
Snowy egret	*Egretta thula*	High	SSC
Tricolored heron	*Egretta tricolor*	High	SSC
White ibis	*Eudocimus albus*	High	SSC
Mammals			
Florida mouse	*Podomys floridanus*	Low	SSC
Plants			
Bahama Brake	*Pteris bahamensis*	Moderate	LT
Bahama Sachsia	*Sachsia polycephala*	Low	LT
Banded Wild-pine	*Tillandsia flexuosa*	Moderate	LT
Blodgett's Wild-mercury	*Argythamnia blodgettii*	Low	LE
Celestial Lily	*Nemastylis floridana*	Low	LE
Christmas Berry	*Crossopetalum ilicifolium*	Low	LT
Clamshell Orchid	*Encyclia cochleata var. triandra*	Low	LE
Coastal Vervain	*Glandularia maritima*	Low	LE
Cutthroat Grass	*Panicum abscissum*	Low	LE
Eaton's Spike Moss	*Selaginella eatonii*	Low	LE
Florida Lantana	*Lantana depressa var. depressa*	Low	LE
Florida Royal Palm	*Roystonea elata*	Low	LE
Giant Orchid	*Pteroglossaspis ecristata*	Low	LT
Golden Leather Fern	*Acrostichum aureum*	Moderate	LT
Large-flowered Rosemary	*Conradina grandiflora*	Moderate	LT
Lignum-vitae	*Guaiacum sanctum*	Low	LE
Nodding Pinweed	*Lechea cernua*	Low	LT
Pine Pinweed	*Lechea divaricata*	Moderate	LE
Pineland Jacquemontia	*Jacquemontia curtissii*	Low	LT
Porter's Broad-leaved Spurge	*Chamaesyce porteriana*	Low	LE
Redmargin Zephyrlily	*Zephyranthes simpsonii*	Low	LT
Rockland Painted-leaf	*Euphorbia pinetorum*	Low	LE
Sand-dune Spurge	*Chamaesyce cumulicola*	Moderate	LE
Small's Flax	*Linum carteri var. smallii*	Low	LE
Two-keeled Helmet Orchid	*Galeandra bicarinata*	Low	LE
West Indies Mahogany	*Swietenia mahagoni*	Moderate	LT

Table Notes: ST = State Threatened;
SSC = Species of Special Concern;
LE = Endangered: species of plants native to Florida;
LT = Threatened: species of plants native to Florida

Figure 8. Burrowing Owl Observations within Project Vicinity

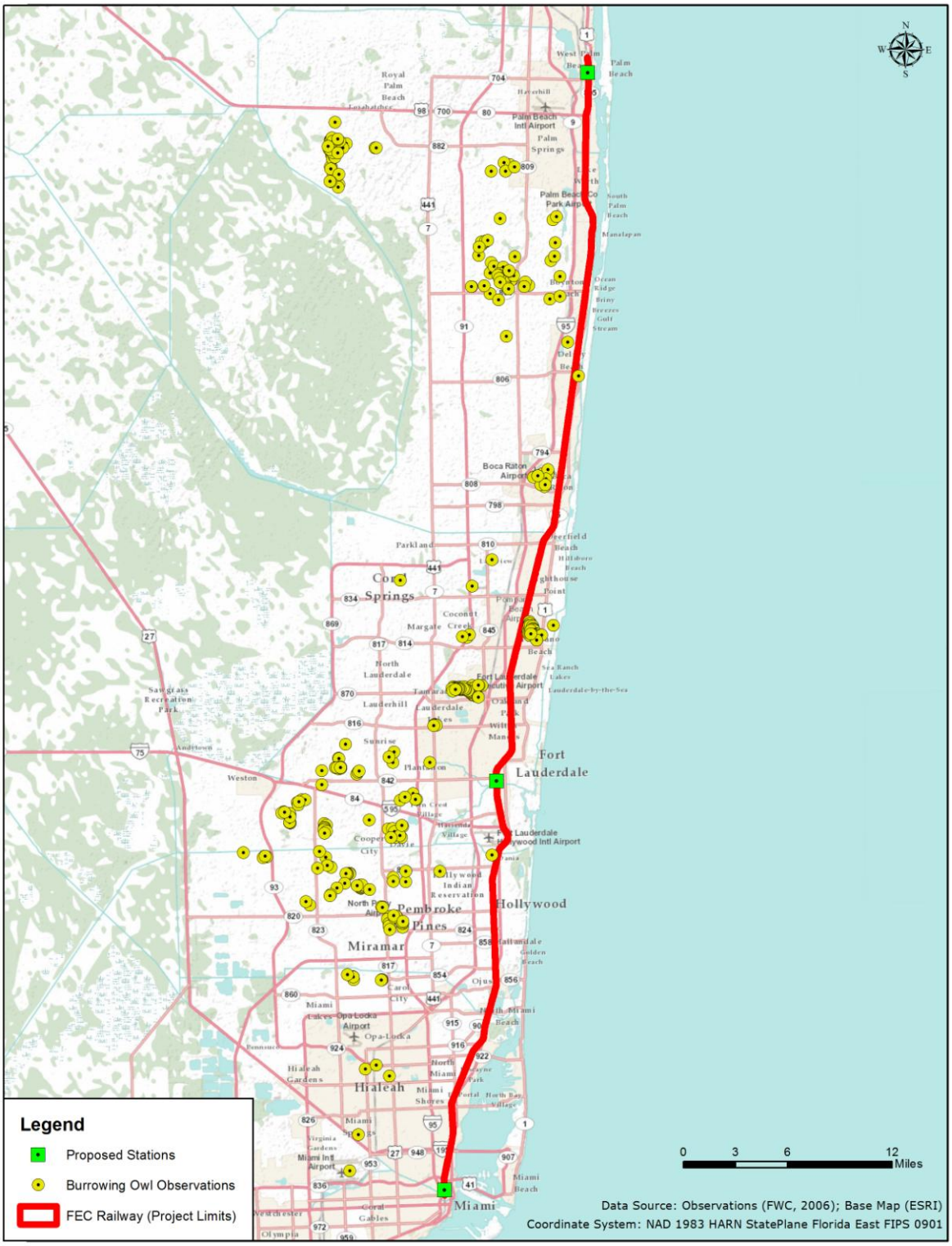
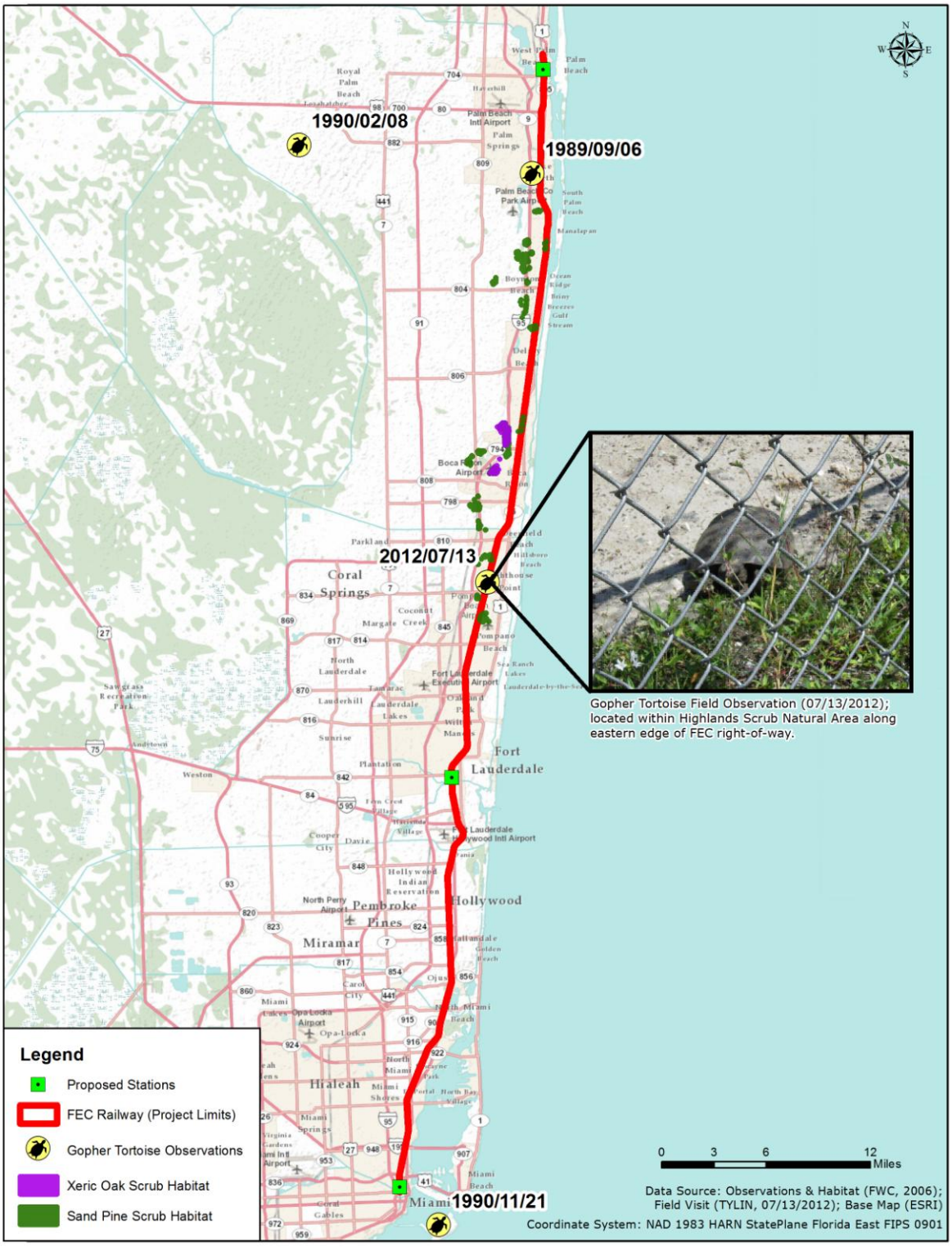


Figure 9. Gopher Tortoise Observations within Project Vicinity



The location of the nearest wading bird colony/rookery documented by the FWC is located approximately 1.25 miles east of Miami on a spoil island in Biscayne Bay (Figure 10). No impacts to wading bird colonies are anticipated as a result of the proposed project.

Although the threatened West Indian mahagony was observed along the project corridor as planted landscaping, no natural populations exist along the corridor. No other listed plant species were observed along the corridor.

5.8.2 Other Considerations

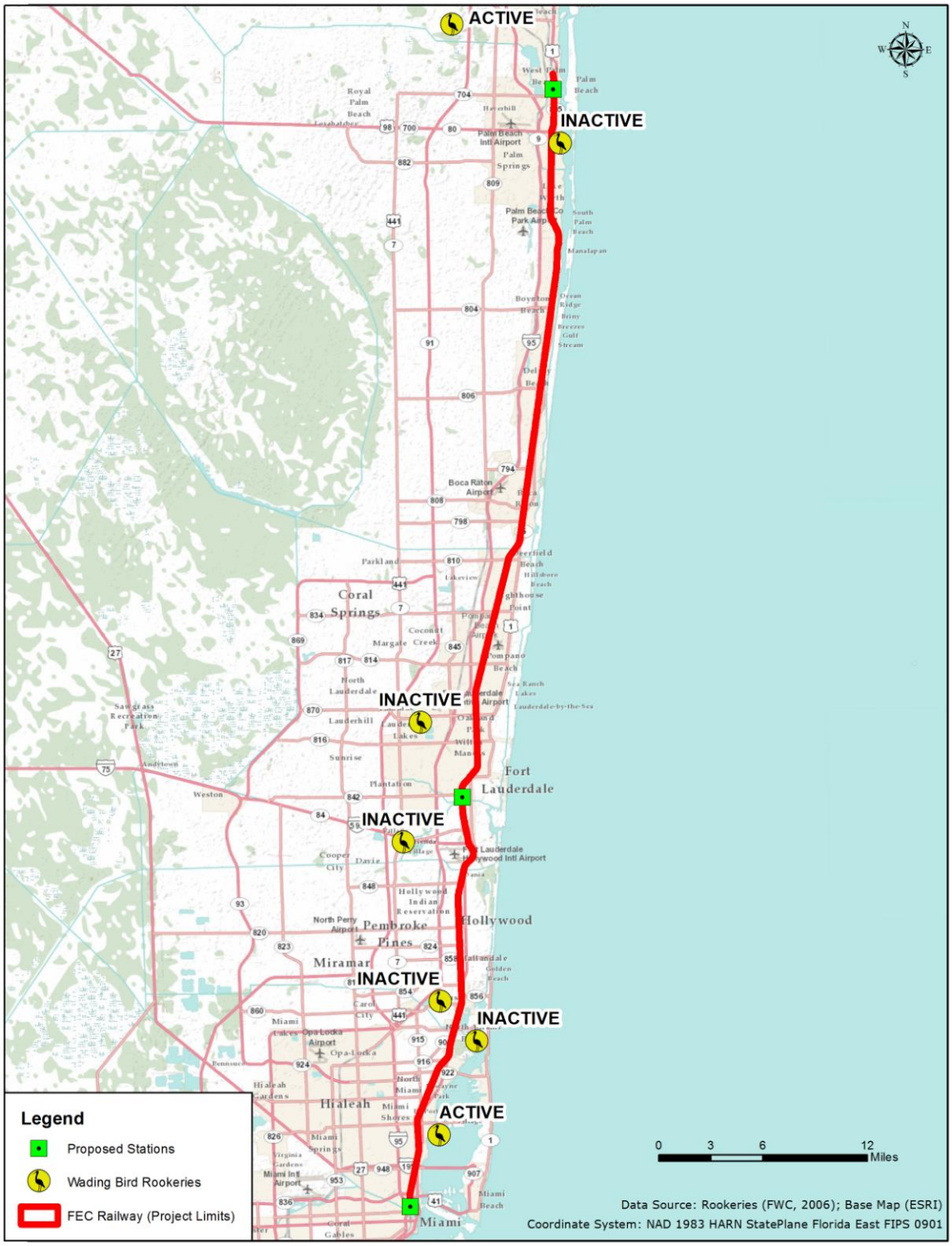
The potential of increased wildlife mortality associated with the increase in number of trains and speeds along the rail line was also considered. There are very few studies on extending service on existing rail lines and most data is anecdotal. Several factors impede the collection of reliable data on railway related to wildlife mortality including the relative inaccessibility of railway lines; the lack of experienced individuals to observe, identify, and record railway kills; and the inherent difficulty of identifying and investigating railway wildlife incidents from moving locomotives. As a consequence, data sets on wildlife mortalities along railways may not have sufficient resolution to define issues and suggest mitigation strategies.

Research primarily shows that there is species-specific, non-uniform distribution of wildlife mortalities along transportation corridors and that each species and situation must be handled on a case by case basis. Animal behavior, environmental factors (such as snow depth and temperature), railroad characteristics, and railroad use (speed/frequency) are all important factors that affect the number of train/wildlife conflicts.

Mitigation strategies which could be employed include: 1) concentrating on identified problem areas; 2) instructing train crews to report wildlife incidents; 3) removing carcasses from right-of-way to reduce scavenging; 4) removing spilled attractants (e.g., grain) in a timely manner; 5) reducing attractant vegetation on right-of-way; and 6) sharing data among jurisdictions.

The increase in the number of trains and speeds associated with this project would be minimal and is not expected to result in a significant increase of wildlife mortality. The trains would be operating on an existing active rail system and wildlife along this corridor is acclimated to the presence of trains. Although there are no dedicated wildlife crossings, overpasses, or underpasses, there are a number of drainage pipes, bridges, and culverts along the corridor that provide the opportunity for animals to cross the track. These structures would remain in place during and after construction. Potential for increased wildlife mortality due to conflicts with higher speed trains are also not anticipated because a high level of wildlife mortality has not been reported along this corridor.

Figure 10. Wading Bird Rookeries within Project Vicinity



6.0 CONCLUSIONS AND COMMITMENTS

This Endangered Species Biological Assessment Technical Memorandum was prepared in compliance with Section 7 (c) of the Endangered Species Act of 1973, as amended in order to document the endangered or threatened species that may be affected by this project.

A literature review, GIS analysis, field surveys, and coordination with resource agencies were conducted to identify threatened or endangered species that may potentially occur in the project area. One (1) fish, seven (7) reptiles, seven (7) birds, three (3) mammals, and two (2) plants, that are listed as federally endangered, threatened or candidate species were identified that may occur within the project vicinity. The species that have a moderate or high potential of occurring within the project vicinity are American alligator, American crocodile, eastern indigo snake, Florida scrub jay, wood stork, southeastern beach mouse, and West Indian manatee. All others have a low or no potential of occurrence in the project corridor and will have "No effect" from the proposed project.

Specific habitat requirements for most of the listed species preclude their presence within the project corridor. Other species that might have historically been present within the project area, are now gone because urban development has replaced all suitable habitat. For the few protected species (primarily birds) that might occur within the project area, their presence is likely to be transient in nature.

Scrub jays may use the scrub habitat in the adjacent natural areas (such as the Hypoluxo Scrub Natural Area) as nesting grounds. However, no other species listed in Table 1 is expected to use the project corridor for nesting. The project lies in the USFWS consultation area for American Crocodile, Florida scrub jays, wood stork, southeastern beach mouse, and West Indian manatee. Critical Habitat for West Indian Manatee lies throughout the coastal waterways of Miami-Dade County and in Palm Beach County from Boynton Beach northward and for Johnson's seagrass throughout the coastal waterways up to North Miami Beach. However, there is no planned construction within the waterways and no change in stormwater outfalls that would have any impact on the critical habitat.

The eastern indigo snake and wood stork keys were used to guide the effect determinations for these two species. Both achieved "Not Likely to Adversely Affect" determinations for the proposed project based on lack of suitable habitat. There are a number of suitable scrub jay habitats adjacent to the project corridor: Hypoluxo Scrub Natural Area (Type I), Seacrest Scrub Natural Area (Type II), Leon Weekes Environmental Preserve (Type II), Rosemary Ridge Preserve (Type II), and Gopher Tortoise Preserve (Type II), and a determination of "Not Likely to Adversely Affect" scrub-jays or their habitat by the proposed project was reached since little change to the corridor is anticipated due to the proposed project.

Due to the potential for the smalltooth sawfish, West Indian manatee and eastern indigo snake to be present in the project vicinity, the following standard construction precautions (see Appendix B) will be utilized to ensure protection of these species during construction of the project:

- *Sea Turtle and Smalltooth Sawfish Construction Conditions*
- *Standard Manatee Conditions for In-Water Work*
- *Standard Protection Measures for the Eastern Indigo Snake*

Standard contract language will also be included on the construction plans indicating that "threatened and endangered mammals, reptiles, and birds may migrate through the area and that the contractor shall comply with all federal and state requirements regarding threatened and endangered species."

AAF further commits to the following as the project proceeds toward final design:

1. AAF will continue to coordinate with the appropriate regulatory agencies as required throughout the design and permitting phases of the project, as well as during and after construction.
2. Staging areas and/or off-site pond areas will be reviewed for protected species involvement during final design.
3. AAF will permit the project with the SFWMD and the USACE during final design, as required.
4. AAF will coordinate on wetland impacts, mitigation, and stormwater management through the environmental permitting process.
5. AAF will comply with the current National Pollutant Discharge Elimination System (NPDES) criteria and Best Management Practices to avoid impacts to water quality and additional impacts to existing wetlands and surface waters located outside the project limits.
6. AAF will continue to seek avoidance and minimization measures for wetland impacts through final design and permitting. If required, compensation for unavoidable wetland impacts will be mitigated according to Section 373.4137 of the Florida Statutes.

The project area has been largely developed leaving little habitat capable of supporting protected species. Based on this assessment, no endangered, threatened or species of special concern, either federal or state-listed, are anticipated to be adversely impacted by project construction or operation. Therefore, it has been determined that the proposed project is unlikely to adversely affect any Federally-listed or State-listed endangered or threatened species and the proposed project is consistent with the Endangered Species Act.

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APPENDIX A

USFWS Official Species List

United States Department of the Interior

FISH AND WILDLIFE SERVICE
SOUTH FLORIDA ECOLOGICAL SERVICES FIELD OFFICE
1339 20TH STREET
VERO BEACH, FL 32960
PHONE: (772)562-3909 FAX: (772)562-4288
URL: fws.gov/verobeach

Consultation Tracking Number: 04EF2000-2012-SLI-0212 July 05, 2012
Project Name: All Aboard Florida

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project.

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, and proposed species, designated critical habitat, and candidate species that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having

similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment

United States Department of Interior
Fish and Wildlife Service

Project name: All Aboard Florida

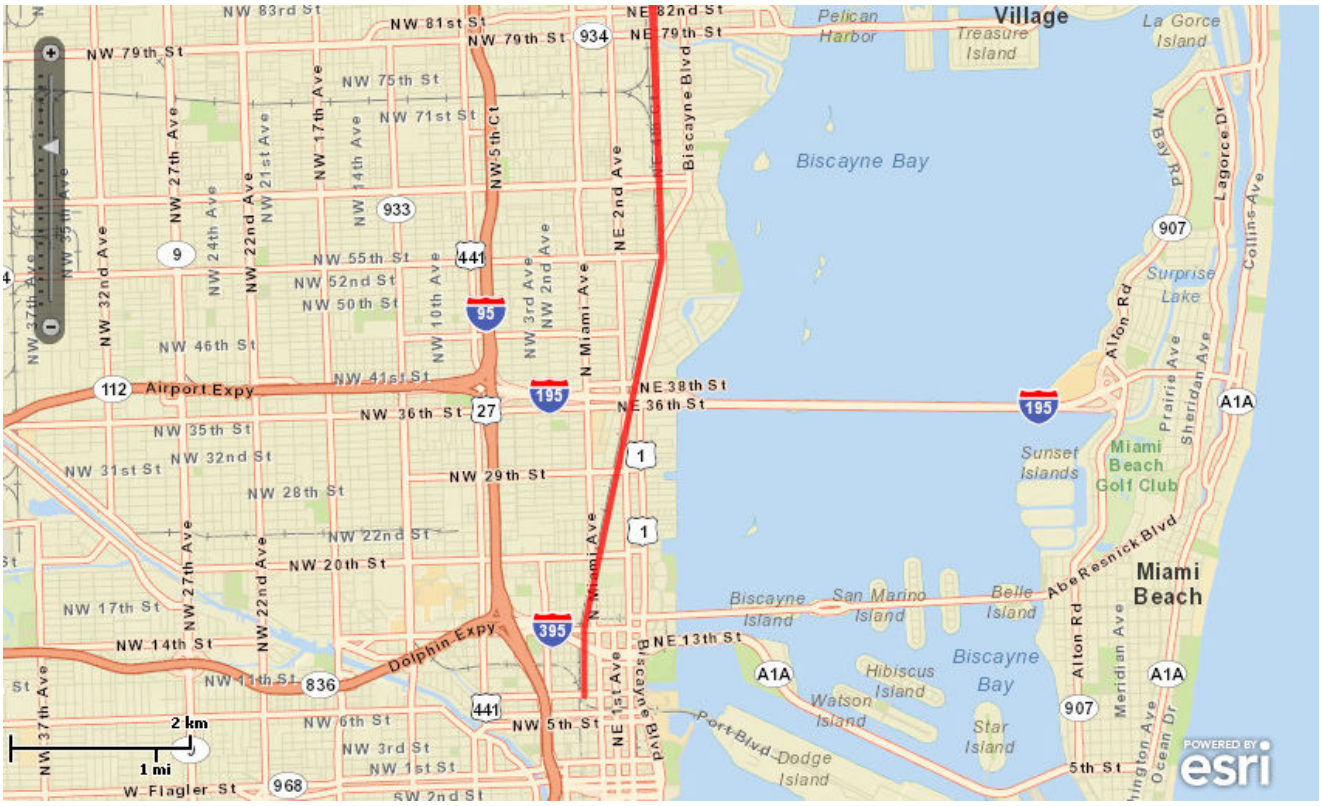
Official Species List

Provided by:

SOUTH FLORIDA ECOLOGICAL SERVICES FIELD OFFICE
1339 20TH STREET
VERO BEACH, FL 32960
(772) 562-3909
http://fws.gov/verobeach

Consultation Tracking Number: 04EF2000-2012-SLI-0212
Project Type: Transportation
Project Description: Railway improvements along existing railine between Palm Beach and Miami

Project Location Map:



Project Coordinates: MULTIPOLYGON (((-80.196182 25.7887284, -80.1961815 25.7887329, -80.1875989 25.8255192, -80.1875989 25.8258327, -80.1887088 25.850768, -80.188707 25.8507771, -80.1720742 25.887802, -80.1690832 25.894593, -80.1690805 25.8945974, -80.1590116 25.9071852, -80.1493016 25.9420733, -80.1477101 25.9480246, -80.1500202 26.037647, -80.1500194 26.037653, -80.1457842 26.052442, -80.1428937 26.0634256, -80.1428905 26.0634324, -80.1352926 26.0736774, -80.1380432 26.0788111, -80.1403274 26.0828981, -80.1403295 26.0829038, -80.145536 26.1075749, -80.1455364 26.1075793, -80.1452253 26.1290643, -80.1452241 26.1290707, -80.1452209 26.1290765, -80.1313038 26.1464991, -80.1323595 26.2087259, -80.1323587 26.2087317, -80.1286275 26.2217766, -80.1010048 26.3202233, -80.1010014 26.32023, -80.0936633 26.3299213, -80.0913185 26.3332945, -80.0609694 26.5213612, -80.0560115 26.5567373, -80.053209 26.590916, -80.0585625 26.6031925, -80.0600094 26.6063452, -80.0600112 26.6063539, -80.058544 26.6774896, -80.058543 26.6774955, -80.057475 26.6806864, -80.0570676 26.6824155, -80.0563085 26.7154794, -80.0563068 26.715487, -80.0563023 26.7154933, -80.0562958

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Project Counties: Broward, FL | Miami-Dade, FL | Palm Beach, FL

Endangered Species Act Species List

Species lists are not entirely based upon the current range of a species but may also take into consideration actions that affect a species that exists in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Please contact the designated FWS office if you have questions.

American alligator *(Alligator mississippiensis)*

Listing Status: Similarity of Appearance (Threatened)

American crocodile *(Crocodylus acutus)*

Population: FL pop.

Listing Status: Threatened

Audubon's Crested caracara *(Polyborus plancus audubonii)*

Population: FL pop.

Listing Status: Threatened

Bachman's warbler *(Vermivora bachmanii)*

Listing Status: Endangered

Bartram's Hairstreak Butterfly *(Strymon acis bartrami)*

Listing Status: Candidate

Beach jacquemontia *(Jacquemontia reclinata)*

Listing Status: Endangered

Blodgett's silverbush *(Argythamnia blodgettii)*

Listing Status: Candidate

Cape Sable Seaside sparrow *(Ammodramus maritimus mirabilis)*

Listing Status: Endangered

Cape Sable Thoroughwort *(Chromolaena frustrata)*

Listing Status: Candidate

Carter's mustard *(Warea carteri)*

Listing Status: Endangered

Carter's Small-Flowered flax *(Linum carteri var. carteri)*

Listing Status: Candidate

Crenulate lead-plant *(Amorpha crenulata)*

Listing Status: Endangered

Deltoid spurge *(Chamaesyce deltoidea ssp. deltoidea)*

Listing Status: Endangered

Eastern Indigo snake *(Drymarchon corais couperi)*

Listing Status: Threatened

Elkhorn coral *(Acropora palmata)*

Listing Status: Threatened

Everglade Snail kite *(Rostrhamus sociabilis plumbeus)*

Population: FL pop.

Listing Status: Endangered

Everglades bully *(Sideroxylon reclinatum ssp. austrofloridense)*

Listing Status: Candidate

Florida Bonneted bat *(Eumops floridanus)*

Listing Status: Candidate

Florida brickell-bush *(Brickellia mosieri)*

Listing Status: Candidate

Florida Bristle fern *(Trichomanes punctatum ssp. floridanum)*

Listing Status: Candidate

Florida Grasshopper sparrow *(Ammodramus savannarum floridanus)*

Listing Status: Endangered

Florida Leafwing Butterfly *(Anaea troglodyta floridalis)*

Listing Status: Candidate

Florida panther *(Puma concolor coryi)*

Listing Status: Endangered

Florida Perforate cladonia *(Cladonia perforata)*

Listing Status: Endangered

Florida Pineland crabgrass *(Digitaria pauciflora)*

Listing Status: Candidate

Florida prairie-clover *(Dalea carthagenensis var. floridana)*

Listing Status: Candidate

Florida scrub-jay *(Aphelocoma coerulescens)*

Listing Status: Threatened

Florida Semaphore Cactus *(Consolea corallicola)*

Listing Status: Candidate

Four-Petal pawpaw *(Asimina tetramera)*

Listing Status: Endangered

Garber's spurge *(Chamaesyce garberi)*

Listing Status: Threatened

Green sea turtle *(Chelonia mydas)*

Population: FL, Mexico nesting pops.

Listing Status: Endangered

Gulf sturgeon *(Acipenser oxyrinchus desotoi)*

Listing Status: Threatened

Hawksbill sea turtle *(Eretmochelys imbricata)*

Listing Status: Endangered

Ivory-Billed woodpecker *(Campephilus principalis)*

Population: entire

Listing Status: Endangered

Johnson's seagrass *(Halophila johnsonii)*

Listing Status: Threatened

Critical Habitat: Final designated

Kirtland's Warbler *(Dendroica kirtlandii)*

Listing Status: Endangered

Leatherback sea turtle *(Dermochelys coriacea)*

Listing Status: Endangered

Loggerhead sea turtle *(Caretta caretta)*

Listing Status: Threatened

Miami Blue Butterfly *(Cyclargus thomasi bethunebakeri)*

Listing Status: Endangered

Okeechobee gourd *(Cucurbita okeechobeensis ssp. okeechobeensis)*

Listing Status: Endangered

pineland sandmat *(Chamaesyce deltoidea ssp. pinetorum)*

Listing Status: Candidate

Piping Plover *(Charadrius melodus)*

Population: except Great Lakes watershed

Listing Status: Threatened

puma *(Puma concolor)*

Population: FL

Listing Status: Similarity of Appearance (Threatened)

Red Knot *(Calidris canutus ssp. rufa)*

Listing Status: Candidate

Red-Cockaded woodpecker *(Picoides borealis)*

Listing Status: Endangered

Sand flax *(Linum arenicola)*

Listing Status: Candidate

Schaus Swallowtail butterfly *(Heraclides aristodemus ponceanus)*

Listing Status: Endangered

Small's milkpea *(Galactia smallii)*

Listing Status: Endangered

Smalltooth sawfish *(Pristis pectinata)*

Listing Status: Endangered

Southeastern Beach mouse *(Peromyscus polionotus niveiventris)*

Listing Status: Threatened

Staghorn coral *(Acropora cervicornis)*

Listing Status: Threatened

Stock Island Tree snail *(Orthalicus reses)*

Listing Status: Threatened

Tiny polygala *(Polygala smallii)*

Listing Status: Endangered

West Indian manatee *(Trichechus manatus)*

Listing Status: Endangered

Critical Habitat: Final designated

Whooping crane *(Grus americana)*

Population: U.S.A. (CO, ID, FL, NM, UT, and the western half of Wyoming)

Listing Status: Experimental Population, Non-Essential

Wood stork *(Mycteria americana)*

Population: AL, FL, GA, SC

Listing Status: Endangered

APPENDIX B

Standard Construction Conditions

Sea Turtle / Small Tooth Sawfish

West Indian Manatee

Eastern Indigo Snake

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
263 13th Avenue South
St. Petersburg, FL 33701

SEA TURTLE AND SMALLTOOTH SAWFISH CONSTRUCTION CONDITIONS

The permittee shall comply with the following protected species construction conditions:

a. The permittee shall instruct all personnel associated with the project of the potential presence of these species and the need to avoid collisions with sea turtles and smalltooth sawfish. All construction personnel are responsible for observing water-related activities for the presence of these species.

b. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing sea turtles or smalltooth sawfish, which are protected under the Endangered Species Act of 1973.

c. Siltation barriers shall be made of material in which a sea turtle or smalltooth sawfish cannot become entangled, be properly secured, and be regularly monitored to avoid protected species entrapment. Barriers may not block sea turtle or smalltooth sawfish entry to or exit from designated critical habitat without prior agreement from the National Marine Fisheries Service's Protected Resources Division, St. Petersburg, Florida.

d. All vessels associated with the construction project shall operate at "no wake/idle" speeds at all times while in the construction area and while in water depths where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will preferentially follow deep-water routes (e.g., marked channels) whenever possible.

e. If a sea turtle or smalltooth sawfish is seen within 100 yards of the active daily construction/dredging operation or vessel movement, all appropriate precautions shall be implemented to ensure its protection. These precautions shall include cessation of operation of any moving equipment closer than 50 feet of a sea turtle or smalltooth sawfish. Operation of any mechanical construction equipment shall cease immediately if a sea turtle or smalltooth sawfish is seen within a 50-ft radius of the equipment. Activities may not resume until the protected species has departed the project area of its own volition.

f. Any collision with and/or injury to a sea turtle or smalltooth sawfish shall be reported immediately to the National Marine Fisheries Service's Protected Resources Division (727-824-5312) and the local authorized sea turtle stranding/rescue organization.

g. Any special construction conditions, required of your specific project, outside these general conditions, if applicable, will be addressed in the primary consultation.

Revised: March 23, 2006
O:\forms\Sea Turtle and Smalltooth Sawfish Construction Conditions.doc

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 Vero Beach (1-772-562-3909) for south Florida, and to FWC at 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 8 ½" 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 MyFWC.com/manatee. Questions concerning these signs can be sent to the email address listed above.

CAUTION: MANATEE HABITAT

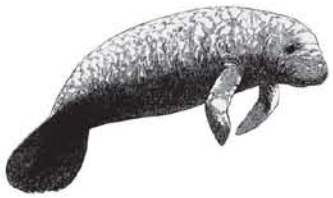
All project vessels

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

STANDARD PROTECTION MEASURES FOR THE EASTERN INDIGO SNAKE

1. An eastern indigo snake protection/education plan shall be developed by the applicant or requestor for all construction personnel to follow. The plan shall be provided to the Service for review and approval at least 30 days prior to any clearing activities. The educational materials for the plan may consist of a combination of posters, videos, pamphlets, and lectures (*e.g.*, an observer trained to identify eastern indigo snakes could use the protection/education plan to instruct construction personnel before any clearing activities occur). Informational signs should be posted throughout the construction site and along any proposed access road to contain the following information:

    a. a description of the eastern indigo snake, its habits, and protection under Federal Law;
    b. instructions not to injure, harm, harass or kill this species;
    c. directions to cease clearing activities and allow the eastern indigo snake sufficient time to move away from the site on its own before resuming clearing; and,
    d. telephone numbers of pertinent agencies to be contacted if a dead eastern indigo snake is encountered. The dead specimen should be thoroughly soaked in water and then frozen.

2. If not currently authorized through an Incidental Take Statement in association with a Biological Opinion, only individuals who have been either authorized by a section 10(a)(1)(A) permit issued by the Service, or by the State of Florida through the Florida Fish Wildlife Conservation Commission (FWC) for such activities, are permitted to come in contact with an eastern indigo snake.

3. An eastern indigo snake monitoring report must be submitted to the appropriate Florida Field Office within 60 days of the conclusion of clearing phases. The report should be submitted whether or not eastern indigo snakes are observed. The report should contain the following information:

    a. any sightings of eastern indigo snakes and
    b. other obligations required by the Florida Fish and Wildlife Conservation Commission, as stipulated in the permit.

Revised February 12, 2004